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NIT No.: 42/EE(E)/DED-202/2026-27

Name of work: RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:- SITC of 40 KVA 3 Phase online UPS at ERP Section) .

Estimated Cost: Rs. 10,15,238/- (Rupees Ten Lac Fifteen Thousand Two Hundred Thirty Eight Only)

Earnest Money: Rs. 20,305/-

Security Deposit: 2.5% of the tendered value

Performance Guarantee: As per OM No. DG/Manual-2024/20 dated 27.02.2026

Time of execution : 02 Months

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Certified that this NIT contains **1 to 37** pages excluding cover.

Assistant Engineer(E) P
DED-202, CPWD,
IGI Stadium, New Delhi.

Executive Engineer (E)
DED-202, CPWD,
IGI Stadium, New Delhi

INFORMATION AND INSTRUCTIONS FOR TENDER INVITING AUTHORITY FOR E-TENDERING

1. The Engineer-in-Charge/DDH of any divisions/projects of CPWD or any other officer designated by CPWD Directorate from time to time, are authorized to receive the EMDs. These authorities should receive the original EMD for their tenders or tenders of any other division/projects.
2. The NIT approving authority/ Tender inviting authority at the time of issue of NIT also fills and upload the following prescribed format of receipt of deposition of original EMD along with NIT:-

Receipt of deposition of original EMD (Receipt No...../date)	
1.	<u>Name of work:-</u> RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:- SITC of 40 KVA 3 Phase online UPS at ERP Section) .
2.	<u>NIT No. : 42/EE(E)/DED-202/2026-27</u>
3.	<u>Estimated Cost :- 10,15,238/-</u>
4.	<u>Amount of Earnest Money Deposit:- 20,305/-</u>
5.	<u>Last date of submission of bid:- 28.08.2026 upto 15:00 hrs.</u>
<i>(*To be filled by Tender inviting authority/NIT approving authority at the time of issue of NIT and uploaded along with NIT)</i>	
1.	Name of the contractor#
2.	Form of EMD#
3.	Amount of Earnest Money Deposit #
4.	Date of submission of EMD#
Signature, Name and Designation of EMD Receiving officer along with Office stamp (# To be filled by EMD receiving EE/DDH)	

3. The Authority receiving EMD in original form examines the EMD deposited by the bidder and issues receipt of deposition of earnest money to the agency in a given format uploaded by tender inviting authority. The receipt can also be issued by any subordinate gazette authority as authorized by the Engineer-in-Charge/DDH.
4. The authority receiving original EMD also intimates tender inviting authority about deposition of EMD by the agency by email/fax/telephonically.
5. The original EMD receiving authority releases the EMD to unsuccessful bidders after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier, after verification from the e-tendering portal website ([https:// etender.cpwd.gov.in](https://etender.cpwd.gov.in)>closed Tender>all) that the particular contractor is not L-1 tenderer and work is awarded.
6. The tender inviting authority calls for original EMD of the L-1 tenderer from EMD receiving authority immediately.

Note:- Receipt of EMD issued by Sub Division will not accepted.

INFORMATION AND INSTRUCTION FOR E-TENDERING

The Executive Engineer (E), Delhi Electrical Division-202, CPWD, IGI Stadium Complex, New Delhi-110002, (Phone No. 011-21400618, E-mail Id: deleeesaimed.cpwd@nic.in) on behalf of President of India invites online percentage rate bids from the **approved and eligible contractors of CPWD in Composite Category / Buildings and roads in Appropriate class** in Single bid system for the following work:-

S. No.	NIT No.	Name of work & location	Estimated cost put to bid (Rs.)	Earnest Money	Stipulated Period of Completion of work (in months)	Last date of online submission of bid, copy of receipt of deposition of original EMD and other documents as specified in the bid document.	Date & time Of opening of bid
1	2	3	4	5	6	8	9
1	42/EE(E)/DED-202/2026-27	RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:-SITC of 40 KVA 3 Phase online UPS at ERP Section) .	Rs. 10,15,238/-	Rs. 20,305/-	02 Months	28.08.2026 upto 15:00 hrs	28.08.2026 at 15:30 hrs

- The intending bidder must read the terms and conditions of CPWD-6 carefully. He should only submit his bid if he considers himself eligible and he is in possession of all the documents required.
- Information and Instructions for bidders posted on website shall form part of bid document.
- 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 <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
- But the bid can only be submitted after deposition of original EMD either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission and uploading the mandatory scanned documents such as Insurance Surety Bonds, Account Payee Demand draft or Bankers Cheque or Fixed Deposit Receipts or/ and Bank Guarantee (for balance amount as prescribed) from any of the Commercial Bank towards EMD in favour of **Executive Engineer, SMCD, CPWD, New Delhi** as mentioned in NIT, receipt for deposition of original EMD to division office of any Executive Engineer (including NIT issuing EE/ AE), CPWD and other documents as specified.
- Those contractors who are not registered or have not updated their profile on the website mentioned above, are required to get registered / update their profile beforehand. The necessary training materials including the videos with step to step process are available on download section of <https://etender.cpwd.gov.in>.
- The intending bidder must have valid Class-III digital signature certificate with encryption key (combo type) to perform any operations / transactions on the e-tendering portal / website and the bidder should download and install the eM signer on their system as per instructions available on download section of <https://etender.cpwd.gov.in>.
- On opening date, the contractor can login and see the bid opening process. After opening of bids he will receive the competitor bid sheets.
- Contractor can upload documents in the form of JPG format and PDF format.
- Contractor must ensure to quote rate in the prescribed column(s) meant for quoting rate in figures appears in yellow colour and the moment rate is entered, it turns sky blue.

In addition to this, while selecting any of the cells a warning appears that if any cell is left blank the same shall be treated as "0". Therefore, if any cell is left blank and no rate is quoted by the bidder, rate of such

item shall be treated as "0" (ZERO).

However, If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in

10. The Technical Bid shall be opened first on due date and time as mentioned above. The time and date of opening of financial bid of contractors qualifying the technical bid shall be communicated to them at a later date.
11. It is mandatory to upload all the required documents by the firms so that all uploaded documents can be seen at document view stage. Document uploaded after this at EMD view stage shall not be considered.
12. The department reserves the right to reject any prospective application without assigning any reason and to restrict the list of qualified contractors to any number deemed suitable by it, if too many bids are received satisfying the laid down criterion
13. Method of application:
 - i. **If the bidder is an individual, the application shall be signed by him above his full type written name and current address.**
 - ii. **If the bidder is a proprietary firm, the application shall be signed by the proprietor above his full typewritten name and the full name of his firm with its current address.**
 - iii. **If the bidder is a firm in partnership, the application shall be signed by all the partners of the firm above their full typewritten names and current addresses, or, alternatively, by a partner holding power of attorney for the firm. In the later case a certified copy of the power of attorney should accompany the application. In both cases a certified copy of the partnership deed and current address of all the partners of the firm should accompany the application.**
 - iv. **If the bidder is a limited company or a corporation, the application shall be signed by a duly authorized person holding power of attorney for signing the application accompanied by a copy of the power of attorney. The bidder should also furnish a copy of the Memorandum of Articles of Association duly attested by a Public Notary.**

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

1. Banker's Cheque, Account Payee Demand Draft, Fixed Deposit Receipt (FDR), Insurance Surety Bonds, and Bank Guarantee of any Commercial Bank towards EMD **in favour of Executive Engineer, SMCD, CPWD, New Delhi**. The Bidder can also deposit EMD in Bharatkosh (www.bharatkosh.gov.in) through Net banking the details of account as given under: -

Controller Code-	030 – Ministry of Housing and Urban Affairs
PAO Code -	043729 – PAO (Food Zone)
NCDDO Code -	318835 – O/o EE
Head of Account: -	844300103020000
2. The receipt for deposition of original EMD to division office of any Executive Engineer, CPWD and other documents as specified.
Copy of receipt for deposition of original EMD issued from division office of any Executive Engineer, CPWD (The EMD document shall be issued from the place in which the office of receiving division office is situated) OR acknowledgment slip of depositing EMD through bharatkosh.gov.in
3. CPWD Enlistment Order of the Contractor in appropriate class in Composite category/Buildings and Roads.
4. Valid Electrical Contractor License.
5. Copy of Certificate of Registration in GST & acknowledgment of upto date filed return of GST.
6. **CPWD Enlisted Contractor to upload Training Certificate of ERP (Enterprise Resource Planning)** training issued by any of the CPWD Regional Training institutes (RTIs) at Delhi, Mumbai, Chennai and Kolkata, National CPWD Academy (NCA) Ghaziabad, ERP unit of CPWD issued to contractor either himself or his authorized representative. Failure to do so CPWD enlisted contractor will not be allowed to participate in tender i.e., price bid will not be opened.

Note: -

In case of non-enlisted contractor being first lowest in the tender then either contractor himself or his authorized representative shall take compulsory ERP training through any of the CPWD Regional Training institutes (RTIs) at Delhi, Mumbai, Chennai and Kolkata, National CPWD Academy (NCA) Ghaziabad, Training arranged by Graduates of ERP "Train the Trainers Programme" conducted by NCA, Ghaziabad or through any other special training arranged by ERP unit of CPWD **within two months from the date of issue of intent letter**. Training will be valid only when non enlisted contractor is registered in LMS of ERP and certificate is issued through LMS of ERP. **Failure to do so, a recovery of Rs. 10,000/- per week** shall be made from the R/A bill without giving any show cause notice in this regard.

Assistant Engineer(E) P
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IGI Stadium, New Delhi.

Executive Engineer (E)
DED-202, CPWD,
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CPWD-6 FOR E- TENDERING

1. Percentage rate bids are invited on behalf of President of India from the **approved and eligible contractors of CPWD in Composite Category / Buildings and roads in Appropriate class** in Single bid system for the following work:-

Name of Work:- RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:- SITC of 40 KVA 3 Phase online UPS at ERP Section) .

The enlistment of the contractors should be valid on the last date of submission of bids.

In case the last date of submission of bid is extended, the enlistment of contractor should be valid on the original date of submission of bids.

- 1.1 The work is estimated to cost **Rs. 10,15,238/-**. 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 bid, 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 bidders 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 **works as mentioned in INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF BID DOCUMENT**

- 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 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 CPWD 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. **CPWD 7/8** (or other Standard Form as mentioned) which is available as a Govt. of India Publication and also available on website **www.cpwd.gov.in**. Bidders shall quote his 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 **02 Months** 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.

OR

~~The site for the work shall be made available in parts as specified below:-~~

~~(ii) The architectural and structural drawing for the work is available or~~

5. The architectural and structural drawings shall be made available in phased manner, as per requirement of the same as per approved programme of completion submitted by the contractor after award of work. 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 on website <https://etender.cpwd.gov.in> or www.cpwd.gov.in free of cost.
6. After submission of the bid the contractor can re-submit revised bid any number of times but before last time and date of submission of bid as notified.

7. While submitting the revised bid, contractor can revise the rate of one or more item(s) any number of times (he need not re-enter rate of all the items) but before last time and date of submission of bid as notified.
8. When bids are invited in three stage system and if it is desired to submit revised financial bid then it shall be mandatory to submit revised financial bid. If not submitted then the bid submitted earlier shall become invalid.
9. Earnest Money in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt, Banker's Cheque or Bank Guarantee (for balance amount as prescribed) from any of the Commercial Banks **(drawn in favour of Executive Engineer, SMCD, CPWD, New Delhi or through Bharatkosh as per details given above in instruction to bidder)** shall be scanned and uploaded on the e-Tendering website within the period of bid submission. The original EMD should be deposited either in the office of Executive Engineer inviting bids or division office of any Executive Engineer, CPWD within the period of bid submission. The EMD receiving Executive Engineer (including NIT issuing EE/AE) shall issue a receipt of deposition of earnest money deposit to the bidder in a prescribed format (enclosed) uploaded by tender inviting EE in the NIT.

A part of earnest money is acceptable in the form of bank guarantee also. In such case, minimum 50% of earnest money or Rs. 20 lac, whichever is less, shall have to be deposited in shape prescribed above, and balance may be deposited in shape of Bank Guarantee of any Commercial bank having validity for a period of 90 days for single bid works and 180 days for two bid system or more from the last date of receipt of bids which is to be scanned and uploaded by the intending bidders.

The earnest money given by all the tenderers except the lowest tenderer shall be refunded immediately after the expiry of stipulated bid validity period or immediately after acceptance of the successful bidder, whichever is earlier. However, in case of two/ three bid system, earnest money deposit of bidders unsuccessful during technical bid evaluation etc. should be returned within 30. days of declaration of result of technical bid evaluation.

Copy of Enlistment Order and certificate of work experience and other documents as specified in the notice inviting e- tender shall be scanned and uploaded on the e-Tendering website within the period of bid submission. However, certified copy of all the scanned and uploaded documents as specified in e- tender notice shall have to be submitted by the lowest bidder within a week physically in the office of tender opening authority. Online bid documents submitted by intending bidders shall be opened only of those bidders, whose original EMD deposited with any division of CPWD and other documents scanned and uploaded are found in order.

The bid submitted shall be opened at 03:30 PM on as per **INFORMATION AND INSTRUCTIONS FOR BIDDERS FOR e-TENDERING FORMING PART OF BID DOCUMENT.**

10. The bid submitted shall become invalid and e-Tender processing fee shall not be refunded if:
 - i. The bidder is found ineligible.
 - ii. The bidder does not upload scanned copies of all the documents stipulated in the bid document.
 - iii. If any discrepancy is noticed between the documents as uploaded at the time of submission of bid and hard copies as submitted physically by the lowest bidder in the office of bid opening authority.
 - iv. If a tenderer quotes nil rates against each item in item rate tender or does not quote any percentage above/below on the total amount of the tender or any section / sub head in percentage rate tender, the tender shall be treated as invalid and will not be considered as lowest tenderer.
11. The contractor whose bid is accepted will be required to furnish **performance guarantee As per OM No. DG/Manual-2024/20 dated 27.02.2026** within the period specified in Schedule F. This guarantee shall be in the form of Insurance Surety Bonds, Account Payee Demand Draft, Fixed Deposit Receipt or Bank Guarantee from any of the Commercial Banks in accordance with the prescribed form. In case the contractor fails to deposit the said performance guarantee within the period as indicated in Schedule 'F', including the extended

period if any, the Earnest Money deposited by the contractor shall be forfeited automatically without any notice to the contractor. The earnest money deposited along with bid shall be returned after receiving the aforesaid performance guarantee. The contractor whose bid is accepted will also be required to furnish either copy of applicable licenses/ registrations or proof of applying for obtaining labour licenses, registration with EPFO, ESIC and BOCW Welfare Board including Provident Fund Code No. If applicable and also ensure the compliance of aforesaid provisions by the sub-contractors, if any engaged by the contractor for the said work within the period specified in Schedule F.

12. The description of the work is as follows:

RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:-SITC of 40 KVA 3 Phase online UPS at ERP Section) .

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 sub-soil (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 bidder shall be responsible for arranging and maintaining at his own cost all materials, tools & plants, water, electricity access, facilities for workers and all other services required for executing the work unless otherwise specifically provided for in the contract documents. Submission of a bid by a bidder implies that he has read this notice and all other contract documents and has made himself aware of the scope and specifications of the work to be done and of conditions and rates at which stores, tools and plant, etc. will be issued to him by the Government and local conditions and other factors having a bearing on the execution of the work.

13. The competent authority on behalf of the President of India 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 bids is strictly prohibited and the bids submitted by the contractors who resort to canvassing will be liable for rejection.
15. The competent authority on behalf of President of India 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 contractor shall not be permitted to bid for works in the CPWD Circle (Division in case of contractors of Horticulture/Nursery category) 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 Central Public Works Department or in the Ministry of Urban Development. Any breach of this condition by the contractor would render him liable to be removed from the approved list of contractors of this Department.
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 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 is liable to be cancelled if either the contractor or any of his employees is found any time to be such a person who had not obtained the permission of the Government of India as aforesaid before submission of the bid or engagement in the contractor's service.
18. The bids for the work shall remain open for acceptance for a period of 30 (thirty) days from the date of opening of bids in case of single bid system and 75 (seventy five) days from the date of opening of technical bids in case bids are invited in 2 or 3 bid system. Further
- (i) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department within 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 50% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.

- (ii) If any tenderer withdraws his tender or makes any modification in the terms & conditions of the tender which is not acceptable to the department after expiry of 7 days after last date of submission of bids, then the Government shall without prejudice to any other right or remedy, be at liberty to forfeit 100% of the earnest money absolutely irrespective of letter of acceptance for the work is issued or not.
 - (iii) In case of forfeiture of earnest money as prescribed in para (i) and (ii) above, the bidders shall not be allowed to participate in the rebidding process of the same work.
19. This notice inviting Bid shall form a part of the contract document. The successful bidder/contractor, on acceptance of his bid by the Accepting Authority shall within 15 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 C.P.W.D. Form 7/8 or other Standard C.P.W.D. Form as applicable.
20. The intending bidders are required to update their profile in CPWD e- tender portal and to upload their bids well in advance of last date of submission of tender. Any issue related to updating profile/uploading tender can be resolved through the concerned Executive Engineer/ Assistant Engineer (Phone no 011-21400618, e-mail Id deleesaimed.cpwd@nic.in) or ERP helpline no. 18001803286 or e-mail ld cpwd.support@techmahindra.com. The e- tendering bidders are also advised not to wait to raise any issues till the last date of submission of bid in their own interest.

Assistant Engineer(E) P
DED-202, CPWD,
IGI Stadium, New Delhi.

Executive Engineer (E)
DED-202, CPWD,
IGI Stadium, New Delhi

CPWD-7

भारत सरकार GOVERNMENT OF INDIA
केन्द्रीय लोक निर्माण विभाग CENTRAL PUBLIC WORKS DEPARTMENT

राज्य STATE :- **New Delhi.**
शाखा BRANCH :- **E & M**
अंचल ZONE :- **NDZ-II**

परिमंडल CIRCLE:- --
मंडल DIVISION :- **DED-202**
उपमंडल SUB-DIVISION :-III

कार्यों के लिए मद दर निविदा एवं संविदा
Composite Tender & Contract for Works

1. कार्य के लिए निविदा : **Tender for the work of :--**

Name of Work:- RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:-SITC of 40 KVA 3 Phase online UPS at ERP Section) .

- (i) Tenders to be submitted online by **15.00 Hrs. on ***** in the office of **Executive Engineer (E), Delhi Electrical Division-202, IGI Stadium, C.P.W.D, New Delhi-110002.**
- (ii) To be opened on line in presence of tenderers who may be present at **15.30 Hrs on ***** in the office of **Executive Engineer (E), Delhi Electrical Division-202, IGI Stadium, C.P.W.D, New Delhi-110002.**

Issued to N/A as the. Tender document made available
Signature of the officer issuing the documents.

Online to the agency.
Online uploading authority

*** As per Instruction & Information for bidder

Designation :

EXECUTIVE ENGINEER (E)
DED-202, C.P.W.D.,
IGI Stadium, New Delhi

Date of issue.....

As per NIT

निविदा 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 President of India 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.

I/We agree to keep the tender open for ...days from the due date of its opening in case of single bid system..... from the date of opening of technical bid in case tenders are invited on 2 /3 bid/ system for specialized work and not to make any modification in its terms and conditions.

A sum of **Rs.20,305/-** is hereby forwarded in cash/receipt treasury challan/deposit at call receipt of a commercial bank/fixed deposit receipt of commercial bank/demand draft of a commercial bank/bank guarantee issued by a commercial bank as earnest money.

A copy of earnest money in receipt treasury challan/deposit at call receipt of a commercial bank/fixed deposit receipt of commercial bank/demand draft of a commercial bank/bank guarantee issued by a commercial bank is scanned and uploaded (strike out as the case may be). If I/We, fail to furnish the prescribed performance guarantee within prescribed period, I/We agree that the said President of India 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 work as specified, I/ We agree that President of India or the successors in office shall without prejudice to any other right or remedy available in law, be at liberty to forfeit the said performance guarantee absolutely. The said Performance Guarantee shall be a guarantee 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 or Performance Guarantee as aforesaid, I/We shall be debarred for participation in the re-tendering process of the work.

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

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

तारीख Dated

डाक पता Postal Address

ठेकेदार के हस्ताक्षर Signature of Contractor

साक्षी Witness :

पता Address:

उपजीविका Occupation :

स्वीकृति /ACCEPTANCE

मैं भारत के राष्ट्रपति की ओर से तथा उनके लिए रु0:- '..... (रूपये '.....
.....) की राशि के लिए उपर्युक्त निविदा
(अधोलिखित पत्रों के अनुसार परिवर्तित) स्वीकार करता हूँ।

The above tender (as modified by you as provided in the letters mentioned hereunder) is accepted by me
for and on behalf of the President of India for a sum of Rs. *.....
(Rupees*.....)

नीचे दिए गए पत्र इस ठेका करार का हिस्सा होंगे।

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

- i) *
- ii) *
- iii) *

तारीख Dated

भारत के राष्ट्रपति की ओर से तथा उनके लिए
For & on behalf of the President of India.
हस्ताक्षर Signature
पदनाम Designation

PROFORMA OF SCHEDULE

(Separate Performa for Civil, Elect.& Hort. Works in case of Composite Tenders)

SCHEDULE 'A'

Schedule of Quantities (as per PWD-3)

---- As attached----

SCHEDULE 'D'

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

-----Nil-----

SCHEDULE 'E'

Reference to General Conditions of contract – GCC Maintenance work as amended up to date.

Name of Work: RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:- SITC of 40 KVA 3 Phase online UPS at ERP Section) .

- | | | | |
|-------|------------------------|---|--|
| (i) | Estimated cost of work | : | Rs. 10,15,238/- |
| (ii) | Earnest money | : | Rs. 20,305/- |
| (iii) | Performance Guarantee | : | As per OM No. DG/Manual-2024/20 dated 27.02.2026 |
| (iv) | Security Deposit | : | 2.5 % of tendered value |

SCHEDULE 'F'

GENERAL RULES & DIRECTIONS:

Officer inviting tender

Executive Engineer(E), DED-202, CPWD, IGI Stadium, New Delhi – 110002

Maximum percentage for quantity of items of work to be executed beyond which rates are to be determined in accordance with Clauses 12.2. & 12.3

See Below

Definitions:

- | | | |
|----------|--|---|
| 2(vi) | Engineer-in-charge | Executive Engineer(E), DED-202, CPWD, IGI Stadium, New Delhi – 110002 |
| 2(viii) | Accepting Authority | Executive Engineer(E), DED-202, CPWD, IGI Stadium, New Delhi – 110002 |
| 2(x) | Percentage on cost of materials and labour to cover all overheads and profits. | 15% |
| 2(x) (b) | Standard Schedule of Rates | Market Rates/DSR-2025 |
| 2(xi) | Department | CPWD |
| 9(ii) | Standard CPWD contract Form GCC 2023 CPWD Form 7/8 as modified & corrected | As amended upto the last date of submission of tender |

Clause 1

- | | | |
|------|---|--|
| (i) | Time allowed for submission of Performance Guarantee programme chart (Time and progress) and applicable labour licenses, registration with EPFO, ESIC and BOCW welfare board or proof of applying there from the date of issue of letter of acceptance. | 07 Days |
| (ii) | Maximum allowable extension with late fee @ 0.1% per day of Performance Guarantee amount beyond the period provided in (i) above. | 03 Days |
| | | (1 to 15 days to be filled by NIT approving authority) |

Clause 2

Authority for fixing compensation under clause 2

Chief Engineer, NDZ-II, CPWD

Clause 2A

Applicable clause 2/ Clause 2A

Clause 2

Clause 5

Number of days from the date of issue of letter of acceptance for reckoning date of start

10 Days

Mile stone(s) as per table given below

Sl.No.	Description of Milestone (Physical)	Time allowed in days (from date of start)	Amount to be with-held in case of non-achievement of milestone
1	Not Applicable		

Time allowed for execution of work

.....**02 Months**.....

Authority to decide:		
(i)	Authority to convey the decision of shifting of Mile Stone and Extension of time.	Executive Engineer (E), DED-202
(ii)	Authority to decide Rescheduling of mile stones and extension of time	Chief Engineer, NDZ-II, CPWD
(iii)	Shifting of date of start in case of delay in handing over of site	Chief Engineer, NDZ-II, CPWD

PROFORMA OF SCHEDULES Clause 5 Schedule of handing over of site

Part	Portion of Site	Description	Time period for handing over reckoned from date of issue of letter of intent.
Part A	Portion without any hindrance	NA	
Part B	Portion with encumbrances	NA	
Part C	Portion dependent on work of other agencies	NA	

Clause 5**Applicable Clause 5/ Clause 5A****Clause 5****Clause 6**

Applicable clause 6

CMB/EMB (Through ERP Portal)

Clause 7

Gross work to be done together with net payment / adjustment of advance for material collected if any, since the last such payment for being eligible to interim payment.

Mutually Agreed

Clause 7A

Whether clause 7A shall be applicable

No

Clause 10A

List of testing equipment to be provided by the contractor at site lab

As per Terms & Conditions

Clause 10B(ii)

Whether Clause 10 B (ii) shall be applicable

Not Applicable

Clause 10C

Component of labour expressed as percent of value of work

70%

Clause 10 CC

Applicable

Not Applicable

Schedule of component of other Materials, Labour etc. for price escalation Component of civil (except materials/covered under clause 10CA)/ Electrical construction Value of work:

Xm.....

Component of Labour:-

Expressed as percent of total value of work

Y.....

Note: Xm..... % should be equal to (110) – (material covered under clause 10CA i.e. Cement, Steel, POL and other material specified in clause 10CA + Component of Labour)

Clause 11

Specifications to be followed for execution of work

All CPWD Specifications related with work as amended upto date

Clause 16 Competent Authority for deciding reduced rates Chief Engineer, NDZ-II, CPWD

Clause 18 Lit of mandatory machinery tools & plants to be deployed by the contractor at site: as per terms & conditions

Clause 19C Engineer-In-Charge ---- authority to decide penalty for each default

Clause 19 D Engineer-In-Charge ---- authority to decide penalty for each default

Clause 19 G Engineer-In-Charge ---- authority to decide penalty for each default

Clause 19 K Engineer-In-Charge ---- authority to decide penalty for each default

Clause 25

(i)	Conciliator	As decided by Chief Engineer, NDZ-II, CPWD
(ii)	Arbitrator Appointing Authority	As decided by Chief Engineer, NDZ-II, CPWD
(iii)	Place of Arbitrator	Delhi

Clause 32**Requirement of Technical Representative(s) and recovery Rate**

S. No.	Discipline	Designation (Principal Technical/ Technical Representative	Requirement of Technical Staff		Minimum Experience	Rate at which recovery shall be made from the Contractor in the event of not fulfilling provision of Clause 36(i)
			Qualification	Number		
-----Not Applicable-----						

Assistant Engineer retired from Government Services that are holding Diploma will be treated at par with Graduate Engineers.

Diploma holder with minimum 10 year relevant experience with a reputed construction co can be treated at par with Graduate Engineers for the purpose of such deployment subject to the condition that such diploma holders should not exceed 50% of requirement of degree engineers.

Clause 38

- (i)(a) Schedule/statement for determining theoretical quality of cement & bitumen on the basis of Delhi Schedule of Rates 2023 Printed by C.P.W.D.,
- (ii) Variations permissible on theoretical quantities.
- (a) Cement
- For works with estimated cost put to tender not more than Rs.25 lakh. 3% plus/minus
- For works with estimated cost put to tender more than Rs.25 lakh 2 % plus/minus
- (b) Bitumen All works 2.5% plus & only & Nil on minus side
- (c) Steel Reinforcement and structural steel Sections for each diameter, section & category 2 % plus/minus
- (d) All other materials. Nil

FORM OF PERFORMANCE Security (GUARANTEE) BANK GUARANTEE BOND

In consideration of the President of India (hereinafter called "The Government") having offered to accept the terms and conditions of the proposed agreement between..... and(Hereinafter called "the said Contractor(s)") for the work..... (Hereinafter called "the said agreement") having agreed to production of an irrevocable Bank Guarantee for Rs. (Rupeesonly) as a security/guarantee from the contractor(s) for compliance of his obligations in accordance with the terms and conditions in the said agreement.

1. We, (Hereinafter referred to as "the Bank") hereby undertake to pay to the Government an amount not exceeding Rs. (Rupees only) on demand by the Government.
2. We, (indicate the name of the Bank) do hereby undertake to pay the amounts due and payable under this guarantee without any demure, merely on a demand from the Government stating that the amount claimed as required to meet the recoveries due or likely to be due from the said contractor(s). Any such demand made on the bank shall be conclusive as regards the amount due and payable by the bank under this
Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. (Rupeesonly).
3. We, the said bank further undertake to pay the Government any money so demanded notwithstanding any dispute or disputes raised by the contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto, our liability under this present being absolute and unequivocal. The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.
4. We, (indicate the name of the Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to be enforceable till all the dues of the Government under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Engineering- Charge on behalf of the Government certified that the terms and conditions of the said agreement have been fully and properly carried out by the said Contractor(s) and accordingly discharges this guarantee.
5. We, (indicate the name of the Bank) further agree with the Government that the Government shall have the fullest liberty without our consent and without affecting in any manner our obligation hereunder to vary any of the terms and conditions of the said agreement or to extend time of performance by the said Contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by the Government against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said agreement and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Contractor(s) or for any forbearance, act of omission on the part of the Government or any indulgence by the Government to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor(s).
7. We, (Indicate the name of the Bank) lastly undertake not to revoke this guarantee except with the previous consent of the Government in writing.
8. This guarantee shall be valid up to unless extended on demand by the Government. Notwithstanding anything mentioned above, our liability against this guarantee is restricted to Rs. (Rupees) and unless a claim in writing is lodged with us within six months of the date of expiry or the extended date of expiry of this guarantee all our liabilities under this guarantee shall stand discharged.

Dated the day of for (indicate the name of the Bank).

GENERAL TERMS AND CONDITIONS

1.1 Introduction

- A.1 The scope of work includes Planning, design, supply, installation, testing and commissioning of Online UPS system with 30 minutes backup with required battery banks for various buildings. The UPS shall be providing supply to sport light fittings with Minimum 30 Minutes Power Backup with maintenance free batteries, Batteries stand made of suitable MS channel. Suitable battery capacity and quantity shall be provided for each UPS and the Battery Size Calculation should be submitted by the contractor for approval by Engineer-in-charge. Energy Efficiency Requirements at 100 % Load: 92 % as per ECBC+ Building 2017. The Electrical supply to and from the Online UPS shall be arranged by department

These conditions are intended to amplify the General Conditions of Contract, and shall be read in conjunction with the same. For any discrepancy between the General Conditions and these Special Conditions, the more stringent shall apply.

1.2 Scope

The general character and the scope of work to be carried out under this contract is illustrated in Specifications. The Contractor shall act as a System Integrator for providing an end-to-end solution for the above, including but not limited to design, supply, providing of the required Uninterrupted Power Supply Units, Batteries, Battery rack, interconnecting cable between batteries and between batteries & UPS, breakers etc. as stipulated in schedule of work and installation, performance testing, commissioning, warranty, etc. The bidders have to ensure the planning and smooth execution of the project. The Contractor shall carry out and complete the said work under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the Engineer in charge. The contractor shall furnish all labour, materials and equipment as listed and specified otherwise, transportation and incidental necessary for supply, installation, testing and commissioning of the complete system through as described in the Specifications.

1.2.1 Uninterrupted Power Supply System

a. Supply, installation, testing and commissioning of IGBT based Uninterrupted Power Supply Units, IP 20 cabinets, ventilation fans with isolation transformer.

b. Suitable nos. of 12 Volt Sealed Maintenance Free Valve Regulated Lead Acid (VRLA) Batteries for 30 minutes backup, Battery racks, suitable capacity battery breakers, Battery Management Units. Design calculation regarding quantity of batteries shall be submitted to Engineer-in-charge along with technical details of batteries for approval.

c. AC/DC Power and Control Cables and its accessories, between batteries, between batteries & UPS, between UPS complete.

1.2.2 Location

UPS shall be installed **Vidyut Bhawan, Shankar Market, New Delhi.**

1.2.3 Related Documents

These additional specifications are to be read in conjunction with the specification given in the tender. In case any item /items or part thereof are not covered under these specifications, the same shall be carried out as per relevant part of the CPWD General Specification for Electrical Works Part-I Internal -2023, Part –II External -2023, HVAC – 2024, Part-IV Sub-Station-2013, amended upto dates, relevant I.E. rules, BIS/IEC and as per direction of Engineer –in - Charge. These additional specifications are to be read in conjunction with above and in case of variations; specifications given in this additional condition shall apply. However, nothing extra shall be paid on account of these additional specifications and conditions, as the same are to be

read along with schedule of quantities for the work. In addition to this if required the instruction of Central Electricity Authority, Central Pollution Control Board, Delhi Pollution Control Board, Electrical Wing of MCD shall be followed for execution of work. In case of discrepancy among the specifications/conditions as mentioned above the precedence given in general condition of contract shall be followed.

1.2.4 Terminology

The definition of terms used in these specifications shall be in accordance with relevant IS.

1.3 Conformity with statutory Acts, Rules, Standards and codes

- i) All components shall conform to relevant Indian Standard Specifications, wherever existing, amended to date.
- ii) All electrical works shall be carried out in accordance with the provisions of Indian Electricity Act, 2003 and Indian Electricity Rules, 1956 amended to date. They shall also conform to CPWD General Specifications for Electrical works, Part-I: Internal, 2023, Part-II: External 2023, amended upto date.

1.4 Safety Codes and Labour Regulations

- i) In respect of all labour employed directly or indirectly on the work for the performance of contractor's part of work, the contractor at his own expense, will arrange for the safety provisions as per the statutory provision, 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 for Rs. 200/- for each violation. In addition the Engineer-in-charge, shall be at liberty to make arrangements and provide facilities as aforesaid and recover the cost from the contractor.
- ii) The contractor shall provide necessary barriers, signals and other safety measures while executing the works of DG Set installation, cable etc. or wherever necessary so as to avoid accident. He shall also indemnify CPWD against claims for compensation arising out of negligence in this respect. 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 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 contractor due to the above provisions thereof.

1.5 Works to be arranged by the department

Unless otherwise specified in the tender documents, the following works shall be arranged by the Department:

- i) Space for accommodating all the equipment's and components involved in the works. However, arrangement to make it lockable shall be made by contractor himself.
- ii) Power Supply (Three / Single Phase)

1.6 Works to be done by the contractor

Unless otherwise mentioned in the tender documents, the following works shall be done by the contractor and therefore, their cost shall be deemed to be included in their tendered cost- whether specifically indicated in the schedule of work or not: -

- i) Foundations for equipment's including foundation bolts and vibration isolation spring/pads.
- ii) Making good all damages caused to the structure during installation and restoring the same to their original finish.
- iii) Minor building work necessary for installation of equipment's, foundation trench for fuel line and cables, making opening in the wall/floors/slabs or modifications in the existing openings wherever provided for carrying bus ducts/cable/cable tray etc. and restoring the same to their original

condition/ finish and necessary grouting etc. as required. Opening in the slab/retaining walls/brick wall etc. shall be made by means of core cutting machines only.

iv) Sealing of all floor slab/wall openings provided by the Department or made by the contractor for laying of pipes, cables from fire safety points of view.

v) Suspenders, brackets and floor/wall supports for suspending/ supporting cable tray, cables etc.

1.7 **Rates**

The rate quoted by bidder, shall be firm and inclusive of all taxes (including work contract tax), duties and levies and all charges for packing, forwarding insurance, freight and delivery, installation, testing, commissioning etc. at site including temporary constructional storage, risks, overhead charges, general liabilities/obligation etc. but exclusive of service tax, which if applicable shall be reimbursed on production of documentary proof of actual payment against this contract / work. Octroi exemption certificate shall be issued by department if required by the contractor. However, department is not liable to reimburse the octroi duty in case exemption certificates are not honored by the concerned authority.

1.8 **Power Supply**

i) Unless otherwise specified, 3 Phase, 415 volts, 50 Hz power supply shall be provided by the department free of charge to contractor at one point for installation at site suitable for 5 KW load. Termination switchgears however, shall be provided by the contractor. Further extension if required shall be done by the contractor.

ii) The contractor shall use the power supply for any other purpose than that for which it is intended for. No major fabrication work shall be done at site. Power supply shall be used only for welding/ cutting works. Power supply shall be disconnected in case of such defaults and the contractor shall then have to arrange required power supply at his cost.

1.9 **Water Supply**

The water supply for testing and commissioning of the complete installation shall be made available by the Department free of charge to the contractor.

1.10 **Acceptable Makes**

The acceptable makes of the various equipment's /components /accessories have been indicated in "Acceptable Makes" annexed with this document.

1.11 **Machinery for Erection**

All tools and tackles required for unloading/handling of equipment's and materials at site, their assembly, erection, testing and commissioning shall be the responsibility of the contractor.

1.12 **Completeness of the Tender, Submission of Programme, Approval of Drawings and commencement of work**

i) Completeness of the tender:-

All sundry equipment's, fittings, assemblies, accessories, hardware items, foundation bolts, supports, termination lugs for electrical connections, cable glands, junction boxes and all other items which are useful and necessary for proper assembly and efficient working of the various equipment's and components of the work shall be deemed to have been included in the tender, irrespective of the fact whether such items are specifically mentioned in the tender or not.

ii) Submission of program:-

Within fifteen days from the date of receipt of the letter of award, the successful tenderer shall submit his program for submission of drawings, supply of equipment, installation, testing, commissioning and handing over of the installation to the Engineer-in -charge. This program shall

be framed keeping in view the building progress and the milestones fixed in Schedule 'F' Clause-5 of CPWD-8 shall be given priority.

iii) **Submission of Drawings**

The contractor shall submit the drawings to the Engineer-in-Charge as per para 1.28 for approval before start of work.

iv) **Commencement of Work**

The contractor shall commence work as soon as the drawings submitted by him are approved either in full or in part as the case may be.

1.13 Dispatch of Materials to Site and their Safe Custody

The contractor shall dispatch material to site in consultation with the Engineer-in-Charge.

Suitable space shall be made available free of charge temporarily. The arrangement to make it lockable/secure by means of partitions, locks etc. shall be responsibility of the contractor. Watch and ward however, shall be the responsibility of contractor. Program of dispatch of material shall be framed keeping in view the building progress. Safe custody of all machinery and equipment supplied by the contractor shall be the responsibility of the contractor till final taking over by the department.

1.14 Extent of Work

The work shall comprises of entire labor including supervision and all material necessary to meet a complete installation and such tests and adjustment and commissioning, as may be required by the department. The term complete installation shall not only mean major items of the plant and equipment's covered by the specification but all incidental sundry components necessary for complete execution and satisfactory performance of installation with all layout charts whether or not those have been mentioned in detail in the tender documents in connection with this contract as this is a turnkey job.

1.15 Compliance with Regulations and Indian Standards:

1.15.1 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:

- i) Factories Act.
- ii) Indian Electricity Rules.
- iii) B.I.S. & other standards as applicable.
- iv) Workmen's compensation Act.
- v) Statutory norms prescribed by local bodies like CEA, Power Supply Co., etc.

1.15.2 Nothing in this specification shall be construed to relieve the successful tenderer of his responsibility for the design, manufacture and installation of the equipment with all accessories in accordance with currently applicable statutory regulations and safety codes.

1.15.3 Successful tenderer shall arrange for compliance with statutory provisions of safety regulations and departmental requirements of safety codes in respect of labour employed on the work by the tenderer. Failure to provide such safety requirement would make the tenderer liable for penalty of Rs. 50/- for each default. In addition, the department will be at liberty to make arrangement for the safety requirements at the cost of tenderer and recover the cost thereof from him.

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

1.17 Co-Ordination with other Agencies

The contractor during the execution of the works shall co-ordinate with other agencies associated work with the project and shall work in harmony with them without causing any hindrance or obstruction on the progress of work in any way.

1.18 Mobilization Advance:

No mobilization advance shall be paid for this work.

1.19 Insurance and Storage:

All consignments are to be duly insured upto the destination from warehouse at the cost of the contractor. The insurance covers shall be valid till the equipment is handed over duly installed, tested and commissioned.

1.20 Verification of Correctness of Equipment at Destination:

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

1.21 Painting:

This shall include cost of painting of the entire installation. The agency shall be required to do only touching to the damages caused to the painting during transportation, handling & installation at site, if there is no major damage to the painting. All iron works shall be painted at the work before dispatch to the site with two coats of anti-corrosive primer paint. One coat of final finishing of approved color may be done at the factory before dispatch if considered necessary by the tenderer on such components, which will not need removal of such parts at site during assembly/erection work. Marking of identification of each switch gears as per direction of engineer-in-charge shall be got done.

1.22 Quality of Materials and Workmanship

- i) The components of the installation shall be such design so as to satisfactorily function under all conditions of operation.
- ii) The entire work of manufacture/fabrication, assembly and installation shall conform to sound engineering practice.
- iii) All equipment's and material to be used in work shall be manufactured in factories of good repute having excellent track record of quality manufacturing, performance and proper after sales service.
- iv) All equipment's and materials to be used in the work shall be brand new having its date of manufacturing not more than 6 month old from the date of delivery at site with manufacturer's certificates, warrantee cards, technical catalogues, instructions, manuals and wiring diagrams etc.

1.23 Care of the Building

Care shall be taken by the contractor during execution of the work to avoid damage to the building. Care shall also be taken by the contractor to avoid the damage to any of these existing service/service lines, any part of the building etc. If any damage is caused to any of the existing services/service lines, or any part of the building the same shall be repaired / rectified and made functional or restored so its original finish by the contractor immediately at his own expenses failing which the same shall be repaired/ rectified and made functional by department at the risk and cost of the contractor. The decision of the Engineer-in-charge in this regard shall be final & binding. He shall also remove all unwanted and waste materials arising out of the installation from the site of work from time to time.

1.24 Inspection and Testing

(a) Initial Inspection and testing

- (i) Initial inspection of material and equipment's at manufacturer's works may be done by the Engineer-in-Charge or his representative. For item/ equipment i.e. UPS and electrical cubical panels, which requires initial inspection at manufacturer's works, the contractor will intimate the date of testing of equipment's at the manufacturer's works before dispatch. The contractor shall give sufficient advance notice of minimum two weeks regarding the dates proposed for such tests to the department's representative(s) facilitate his presence during testing. The Engineer-in-Charge at his discretion may witness such testing. Equipment's will be inspected at the manufacturer/authorized dealer's premises, before dispatch to the site by the contractor. The manufacturer's works implies the manufacturer of respective items mentioned in the list of acceptable make not the manufacturer's vendors works.
- (ii) The department also reserves the right to inspect the fabrication job at factory and the successful tenderer has to make arrangements for the same.
- (iii) The materials duly inspected by Engineer-in-Charge or his authorized representative shall be dispatched to site by the contractor.
- (iv) Copies of all documents of routine and type test certificates of the equipment's carried out at the manufacturer works shall be furnished to Engineer-in- charge and consignee.
- (v) No additional payment shall be made to the contractor for initial inspection /testing at the manufacturer's works by the representative of the Engineer-in- Charge. However, the department will bear the expenses of its representative deputed for carrying out initial inspection/testing.

(b) Final Inspection and Testing

Upon completion of work the performance test shall demonstrate the following among other things:

- (i) Equipment installed complies with specification in all respects and is of the correct rating for the duty and site conditions. The contractor at his home cost shall demonstrate the load testing of the complete UPS system at site. Necessary load required for testing shall be arranged by the contractor. Nothing extra on this account shall be paid.
- (ii) All items operate efficiently and quietly to meet the specified requirements as per the warranty /guaranty.
- (iii) All circuits are correctly protected /modify as per the site protective devices are properly coordinated.
- (iv) All non-current carrying metal parts are properly and safely grounded in accordance with the specifications and appropriate codes of practice.
- (v) The contractor shall provide all necessary instruments and labour for testing. He shall make adequate records of test procedures and readings and shall repeat any tests requested by the Engineer in charge. Test certificate duly signed by authorized person shall be submitted for scrutiny.
- (vi) If it is proved that the installation or part thereof is not satisfactorily carried out then the contractor shall be liable for the rectification and retesting of the same as called for by the Engineer in charge. All tests shall be carried out in the presence of representative of Engineer in charge.
- (vii) The above general requirements as to testing shall be read in conjunction with any particular requirements specified elsewhere. All tests shall be carried out by a test house approved by the Engineer in charge.

- (viii) The system shall be tested in the presence of Engineer in charge's representative at Supplier's works in accordance with latest prevailing standards and codes. The successful passing of any such tests will not however prejudice the right of Purchaser to reject the system and its accessories, if they do not comply with specifications when erected or perform complete satisfactory operation as intended.

Final Inspection and testing will be done by the Engineer-in-Charge or his representative as per details indicated in relevant section of Technical Specifications.

(c) Safety Measures

All equipment shall incorporate suitable safety provision to ensure safety of the operating personnel at all times. The initial and final inspection reports shall bring out explicitly the safety provisions incorporated in each equipment.

1.25 Guarantee

i) The contactor shall guarantee the complete system to maintain the specified conditions under all conditions of ambient temperature.

ii) All equipment except UPS and batteries shall be guaranteed for a period of 12 months from the date of acceptance and taking over of the installation by the department against unsatisfactory performance and/ or breakdown due to defective design, material, manufacture, workmanship or installation. The equipment or component or any part thereof so found defective during the guarantee period shall be repaired or replaced free of cost to the satisfaction of the Engineer-in-Charge. In case it is felt by the department that undue delay is being caused by the contactor in doing this, the same will be got done by the department at the risk and cost of the contractor. The decision of Engineer-in-Charge in this regard shall be final.

1.26 Taxes and Duties:

The tender is for entering into item rate works contract. The rates shall be inclusive of all taxes, duties, levies, cess, packing, transportation, handling etc.

1.27 Terms of Payments:

Following payment terms shall be applicable.

i) No advance payment shall be made.

ii) Following percentage of contract rates shall be payable against the stage of work shown herein:

Sl. No.	Stage of Work	
1.	After initial inspection (wherever specified) and delivery at site in good condition on pro-rata basis.	70%
2.	On completion of installation in all respect on pro-rata basis.	20%
3.	On successful Commissioning and taking over by the department.	10%

iii) Deduction of security deposit shall be governed by standard/relevant clause of the CPWD 7/8.

1.28 Tender Drawings, Drawings for Approval and Completion Drawings Tender Drawings

1.28.1 Tender Drawings

The drawings appended with bid documents are intended to show space allotted for various equipment's. The equipment's offered shall be suitable for installation in the spaces shown in these drawings.

1.28.2 Drawings for approval on award of the work

The contractor shall prepare and submit following drawings in four sets within 15 days of award of work for approval before commencement of installation. The approval of drawings however does not absolve the contractor of his responsibility to supply the equipment's/ materials as per agreement. In case of any

contradiction between the approved drawings and agreement the decision of the Engineer-in-Charge shall be final and binding on the contractor. All shop drawing shall be prepared on computer through Autocad system based on Architectural drawings and site measurement within four weeks of award of work.

- GA drawings of UPS system and battery bank layout drawings
- Cable & Cable tray layout.
- Single line diagram, control schematic showing make type and description of all components and accessories.
- Details of the foundation for the equipment and weight of assembly equipment.
- Single Line diagram for electrical distribution system
- Control wiring details
- Any other drawings relevant to the work.

1.28.3 **Completion drawings**

Contractor shall submit completion drawings as and when work is completed in all respects.

1.29 **Documents to be furnished on completion of Installation**

Upon completion and commissioning of entire system the contractor shall submit a draft copy of comprehensive operating instructions, maintenance schedule and log sheets for all systems and equipment included in this contract. This shall be supplementary to manufacturer's operating and maintenance manuals. Upon approval of the draft, the contractor shall submit four (4) complete bound sets of typewritten operating instructions and maintenance manuals; one each for retention by Engineer in charge's site representative or two set for Operating Personnel. These manuals shall also include basis of design, detailed technical data for each piece of equipment as installed, spare parts manual and recommended spares for 15 year period of maintenance of each equipment. These manuals shall include:

- i. Completion drawings as per para 1.28.3
- ii. Description of the work carried out / installed.
- iii. Operating instructions.
- iv. Maintenance instructions including procedures for preventive maintenance.
- v. Three sets Manufacturers technical catalogues of all equipment's and accessories.
- vi. Spare parts list.
- vii. Trouble shooting charts.
- viii. Drawings
- ix. Type and routine test certificates of major items.
- x. Operation and maintenance manual of all major equipment's, detailing all adjustments, operation and maintenance procedure.

1.30 **After Sales Services**

The contractor shall ensure adequate and prompt after sales service free of cost during guarantee period, and against payment after guarantee period is over, in the form of maintenance, spares and personal as and when required during normal life span of the equipment's and shall minimize the breakdown period. In case of equipment supplied by other manufacturers, the firm shall submit the guarantee from manufacturer for the same before the entire installation is taken over.

1.31 **Procurement of Material at site**

The quantity taken in SOQ are based upon estimate prepared by Department and are indicative. Only the required quantity, as worked out by contractor and approved by Department shall be brought at site and paid. Any surplus quantity brought by contractor to site, need to be taken back by the contractor without any implication to the department.

Technical Specifications

1.1 GENERAL

This specification describes a three-phase, on-line, continuous operation, solid-state uninterruptible power supply system (UPS). The UPS shall operate as an active power control system, working in conjunction with the building electrical system to provide power conditioning and on-line power protection for the critical loads.

1.2 System Description

The UPS shall consist of easy to repair rectifiers/inverters. The UPS shall be provided with separate feeds for rectifier/inverter and the static bypass switch.

1.2.1 Modes of operation:

The UPS shall operate as an on-line system in the following modes:

1.2.1.1 Normal mode: The inverter and the rectifier shall operate in an on-line manner to continuously regulate the power to the critical load. The rectifier shall derive power from the input source and supply DC power to charge the battery.

1.2.1.3 Battery mode: Upon failure of the input source, the load shall continue being supplied by the inverter without any switching. The inverter shall obtain its power from the battery. There shall be no interruption in power to the load upon failure or restoration of the input source.

1.2.1.4 Frequency converter mode: The output frequency will be fixed to 50 Hz .

1.2.1.5 Static bypass mode: The static bypass switch shall be used for transferring the load to bypass supply without interruption. Retransfer to normal operation shall also be accomplished with no interruption in power to the load.

1.2.1.6 ECO mode: In ECO mode, the UPS shall use static bypass mode as the preferred operation mode under predefined conditions. In case of a failure of the input source, the UPS shall transfer to battery mode.

1.2.1.7 Maintenance bypass mode: The UPS shall be provided with a maintenance bypass breaker (MBB) to supply the load directly from the mains supply.

1.2.1.8 Auto-restart mode: When the UPS is configured to auto-restart, the UPS shall automatically restart after end of discharge and restoration of the input source.

1.2.1.9 Battery recharge: Upon restoration of the input source, the UPS shall simultaneously recharge the battery and regulate the power to the load.

1.2.2 Components:

1.2.2.1 Rectifier

The UPS shall include an active power factor corrected, Insulated Gated Bipolar Transistor (IGBT) rectifier. The input current limiter shall be designed to charge batteries at 20% of the UPS output rating. Provide regulation with mains deviation of up/down to +/-15% of the nominal input voltage. DC bus voltage shall be as per OEM design standards for the input voltages 380/400/415 V.

The battery charging voltage shall be compensated against temperature variations (battery temperature compensation) to always maintain optimal battery float charging.

Input power factor shall be 0.98 lagging at 100% load with out the use of passive filters. Rectifier shall employ electronic waveform control technology to maintain the current wave in sinusoidal.

Pulse Width Modulation (PWM) current control shall be used. Digital Signal Processors (DSP) shall be used for all monitoring and control tasks. Analog control is not acceptable.

1.2.2.2 Batteries:

The battery technology shall be Valve regulated, sealed lead acid batteries. Battery voltage shall be battery temperature compensated as outlined in the rectifier section above.

The battery charging circuit shall remain active when the Power factor controller (PFC) operates normally.

1.2.2.3 Inverter:

The inverter shall consist of fast switching IGBT modules. The inverter shall be a minimum Level 3 or 4 inverter topology. Inverter shall be PWM controlled using DSP logic. Analog control shall not be acceptable.

1.2.2.4 Static bypass switch:

The static switch shall consist of fully rated Silicon Controlled Rectifiers (SCRs). Part rated SCR's with a wraparound contactor are not acceptable.

The static bypass switch shall automatically transfer the load to bypass input supply without interruption after the logic senses one of the following conditions:

- a) Inverter overload beyond rating.
- b) Battery runtime expired and bypass available.
- c) Inverter inoperable.
- d) Control system inoperable.

The static bypass switch shall automatically retransfer from bypass to the inverter, when the Inverter is active (on).

The static bypass switch shall be equipped with a manual means of transferring the load to bypass and back to inverter.

1.2.3 Mechanical:

The UPS shall be housed in a freestanding cabinet with casters

- a) The cable entry shall be from the back of the UPS.
- b) The UPS shall meet an ingress level of minimum IP20.
- c) User replaceable dust filter shall be provided with the standard cabinet.
- d) The critical components i.e., PCBs shall be confirmedly coated

1.2.4 Full load testing without external load bank:

Vendor shall make an arrangement for full load and over load testing at manufacturer works. The testing will be witness by the representative of Engineer-in-Charge.

1.2.5 Other features:

i) The UPS shuts down and should not transfer to the bypass mode when a short circuit occurs on the output of the unit. After the short circuit removed the UPS will operate normally again. At short condition, the Fault LED lights as a warning to end users. Protection through MCB's and Advanced electronic circuitry Display, controls, and alarms

ii) A display unit shall be located on the front of the system. The display shall consist of an alphanumeric display with backlight, an alarm LED, and a keypad consisting of pushbutton switches.

- iii) The following metered data, shall be available on the alphanumeric display:
 - a. Year, month, day, hour, minute, second of occurring events
 - b. Input voltage
 - c. Input current
 - d. Input frequency
 - e. Output voltage
 - f. Output current
 - g. Output frequency
 - h. Battery voltage
 - i. Battery current
 - j. Battery temperature
- iv) The display shall allow the user to display active alarms.
- v) The following controls or programming functions shall be accomplished by use of the display unit. Push button membrane switches shall facilitate these operations.
 - a. Silence audible Alarm
 - b. Set the alphanumeric display language
 - c. Display and set the date and time
 - d. Enable or disable the automatic restart feature
 - e. Transfer load to and from static bypass
 - f. Test battery condition on demand

The following shall make up the UPS front panel LED's:

A) Load:

- 1) Green: UPS output is on.
- 2) Red: Overload on UPS output for too long, or output hasshorted, or no output power present.
- 3) Flashing red: Overload on UPS output.
- 4) Off: UPS output is off. charging.

B) Battery:

- 1) Green: Battery is charging.
- 2) Flashing green: Battery is discharging.
- 3) Red: Battery is inoperable.
- 4) Flashing red: Battery low voltage.
- 5) OFF: Battery and battery charger are normal, battery is not

C) Bypass:

- 1) Green: Load supplied by bypass source.
- 2) Red: Bypass source is unavailable or static bypass switch is inoperable.
- 3) Flashing red: Bypass voltage is out of tolerance.
- 4) OFF: Bypass source is normal.

D) Rectifier:

- 1) Green: Rectifier is working correctly.
- 2) Flashing green: Rectifier is working correctly and mains is normal.
- 3) Red: Rectifier is inoperable.
- 4) Flashing red: Mains is unavailable.
- 5) OFF: Rectifier is off.

E) Inverter:

- 1) Green: Load supplied by inverter.
- 2) Flashing green: Inverter on, start, synchronization or standby (ECO mode) for at least
- 3) One module.
- 4) Red: Load not supplied by inverter, inverter is inoperable.
- 5) Flashing red: Load supplied by inverter, but an inverter alarm is present.
- 6) OFF: Inverter is off.

F) Status:

- 1) Green: Normal mode.
- Red: Inoperable status.

G) Push Button User Controls:

- 1) Home
- 2) Previous
- 3) Next
- 4) Confirm

For purposes of remote communications with the UPS an optional network management card shall be available.

vi) Accessories:-**Software and connectivity:**

The Ethernet Web/SNMP Adaptor shall allow one or more network management systems (NMS) to monitor and manage the UPS in TCP/IP network environments. The management information base (MIB) shall be provided in .MIB formats. The SNMP interface adaptor shall be connected to the UPS via the RJ45 serial port on the standard communication interface board.

Remote UPS monitoring:

Three methods of remote UPS monitoring shall be available:

Web Monitoring: Remote monitoring shall be available via a web browser such as Internet Explorer.

Simple Network Management Protocol (SNMP): Remote UPS Monitoring shall be possible through a standard MIB II compliant platform.

Modbus protocol: Through RS485 port.

Software compatibility: The UPS manufacturer shall have available software to support shutdown and or remote monitoring for Microsoft Windows 10.

Technical Specification for – Valve Regulated Lead Acid & Absorbent Glass Mat (VRLA-AGM) Cells And Batteries For UPS Applications

Nominal capacity	Nominal capacity of the battery is defined in terms of Ampere Hour (AH) capacity. The rating assigned to the cell or battery shall be the capacity expressed in ampere hours (Ah) stated by the manufacturer to be obtainable when the cell or battery is discharged at the 20-hour rate to an end cell voltage of 1.75 V at 25 deg C.
Nominal Voltage	12 Volts per module.
Applicable Standards	JIS 8702

Container	The container shall be made of Polypropylene copolymer (PPCP), Acrylonitrile Butadiene Styrene (ABS), or any other acid resistant plastic material and shall have chemical and electrochemical compatibility. The container shall be fire retardant grade and shall comply with provisions of UL 94— V2/VO. The other requirement for plastic container shall be as per IS 1146.
Grid Material	The grid shall be made of lead alloy which has less electro-chemical corrosion, preferably with no antimonial alloys. The lead used shall be of 99.97% purity.
Plates	The plates shall be of pasted construction and of good workmanship. These shall be free from cracks, white patches and other imperfections, which may affect the life and performance of the battery.
Separator	The separators used shall be of Absorbent Glass Mat (AGM) having high acid absorption capability, resistance to sulphuric acid and good insulating properties. The separator shall meet the test requirements as given in BCI standard.
Electrolyte	The sulphuric and water used for the preparation of electrolyte shall conform to IS 266 and IS 1069 respectively.
Terminals	Positive and negative terminals posts shall be made of copper or brass to have better electrical conductivity. Terminal posts shall be suitably sealed at the lid to prevent leakage of any gas. Any gas escape shall be only through the venting device provided.
Vent assembly	Each cell shall be provided with venting device. The valve shall be capable to withstand the internal pressure specified by the manufacturer. It shall be capable of preventing the ingress of moisture/flame into the cell interior when the valve-release the gas mixture.
Accessories	To be supplied with frame, inter cell, inter module connectors, flexible connectors, and all standard accessories
Shrouds	Each module to be provided with shroud, to prevent contact with the terminals
Overall available space	The Dimension of the module and the complete battery bank to be so designed, that it occupies less space. GA drawing of Battery bank to be furnished along with the offer, for confirming the same.
Discharge characteristics	The battery offered shall be capable of delivering the following currents for the specified durations: a) 2C current for a duration of 10 minutes b) 1.58C current for a duration of 15 minutes Where C = Rated capacity of the battery

Note:

1. The above list is provisional and subject to product conformity with standards of relevant codes.
2. The particular make and model under Preferred Makes shall be acceptable only if they comply to all the particular specifications, item of work and other conditions of the Contract.
3. For any item not covered in the above list, the contractor shall get the samples and make approved from the Engineer-in-charge before the supply is made.

Technical Parameters of UPS

S. No.	Description of Parameters	Requirements
A	General	
1	Make and Model	As per list of acceptable makes
2	Capacity	As per BOQ (in continuous mode)
3	Working temperature	0°C to 40° C (Continuous)
4	Storage temperature	-10°C to 50°C
5	Humidity	95% non-condensing
6	Standards	IEC 62040 Part-1, 2 & 3.
B	General Characteristics	
1	Overall Efficiency of the UPS under following conditions-	
i)	Noise level @ 1 Mt. distance	≤ 70dB
ii)	Conversion technology	True-Online & Double Conversion
iii)	Configuration	Compatible to Parallel, Dual Bus Architecture
iv)	No. of systems that can be paralleled	Up to 2
C	Input Electrical Characteristics	
1	Type of rectifier	IGBT Based Rectifier
2	Input Voltage(3 phase)	360-460 V
3	Input Frequency	50Hz ± 3%
4	Input Power factor @ 50 to 100% load	0.99 or better
5	Input Current harmonic distortion (THD)	≤ 3%
D	Output Electrical Characteristics	
1	Type of Inverter	IGBT based PWM design
2	Output Voltage (3 phase)	380V/ 400V/ 415V (user selectable)
3	Output waveform	Sinusoidal
5	Output frequency	50Hz
6	frequency regulation	± 0.2 Hz
7	THD at Output	≤ 2% for linear load & ≤ 5% for non-linear load
8	Output power factor	0.9 lag
9	Overload capacity	
(a)	At 120%	For 10 minutes
10	Crest Factor	3:1
11	Voltage Transient Recovery Time	≤ 20 ms
12	Static bypass arrangement	To be provided
13	Overall UPS Efficiency	More than 92%
E	Battery details	
1	Type of batteries	SMF
2	Back-up	30 minutes
3	Life of battery (Guarantee)	2 Years minimum
4	Battery temperature sensor	Required
5	No. of Batteries provided	As per OEM recommendations approved by Engineer-in-charge

6	Battery Monitoring	Required
7	Battery Mounting	Steel Rack duly painted
8	Base Frames for UPS & Battery Racks	Indian Standard 'C' Channel of
F	Communication	
1	BMS compatibility	Required
2	SNMP	Required
3	Past Events & Trend Analysis	Required
G	Battery Charger	
1	Charging mode	Constant Voltage Constant Current
2	Nominal Voltage Regulation	±1%
3	Battery Temperature Monitoring & Compensation	Yes
H	DC Link	
1	Battery Voltage	12 Volt each
2	Low Battery Cut-off	10.5 V
I	Static By-pass	
1	Overload	10 times for 100ms
2	Switching Time:	
3	Inverter to By-pass:	
	(a) Inverter Overload	0 ms
	(b) Inverter Failure	<1 ms
	(c) Manual Command	0 ms
4	By-pass to Inverter (Auto and Manual modes)	0 ms
J	Protections	
1	Input Voltage	REQUIRED
2	Output Voltage	REQUIRED
3	Negative Sequence (Phase Reversal)	REQUIRED
4	Over Temperature	REQUIRED
5	Battery Over-charging	REQUIRED
6	Battery Over-temperature	REQUIRED
7	Input In-rush Current	REQUIRED
8	Output Over-load	REQUIRED
9	Reverse Power in paralleled UPS	REQUIRED
K	Man Machine Interface	
1	Front Panel LCDDisplay	REQUIRED
2	Displayed Parameters:	
	(a) Input Voltage (for each Phase)	REQUIRED
	(b) Input Current (for each Phase)	REQUIRED
	(c) Output Voltage (for each Phase)	REQUIRED
	(d) Output Current (for each Phase)	REQUIRED
	(e) Battery Voltage	REQUIRED
	(f) Battery Current	REQUIRED
	(g) Output Frequency	REQUIRED
	(h) Input Frequency	REQUIRED
3	Displayed UPS Status:	
	(a) Converter/ Rectifier - ON/ OFF	REQUIRED
	(b) Inverter - ON/OFF	REQUIRED

	(c) Static Switch - On Mains/ Inverter	REQUIRED
	(d) Load - Within Limit/ Over-load	REQUIRED
	(e) Battery - On Float/ Boost /Discharging	REQUIRED
4	FrontPanel LED Indications:	
	(a) Normal Mode	REQUIRED
	(b) Fault/ Alarm Mode	REQUIRED
5	Front Panel Key-pad for Selection of Parameters	REQUIRED
6	Key Pad operated Controls:	
(a)	Inverter ON/ OFF	REQUIRED
(b)	Transfer to By-pass	REQUIRED
(c)	Display Mode Selection	REQUIRED
(d)	Display Scroll	REQUIRED
(e)	Output Voltage Adjustment	REQUIRED
(f)	Data Setting/ Enter Push Key	REQUIRED
7	Fault Alarm/ Buzzer	REQUIRED
8	Front Panel Emergency OFF Control Switch	REQUIRED
9	Networking & Monitoring Interface:	
i.	Port for Communication with Stand- alone PC	REQUIRED
ii.	Port for Communicating via Local &/or Global Network - LAN/ WAN	REQUIRED
iii.	System Fault Monitoring Capacity - (Storage of Fault data on real date & time basis)	Yes
iv.	Windows compatible' Application software for On-line Monitoring & Management of UPS	REQUIRED
L	Applicable Standards	
1	General UPS	IEC 62040 Part-1
2	EMI/ EMC	IEC 62040 Part-2
3	Safety	IEC 62040 Part-3
M	Physical Parameters	
1	Dimensions (HxWxD) (Smallest Foot	(Smallest Foot Print preferable)
2	Weight	To be mentioned
3	Air Flow	As per manufacturedesign
4	Cable Entry Point	From top
N	Environmental Conditions	
1	Degree of Protection	IP – 20
2	Operating Temperature	0 To 40°C
3	Storage Temperature (Except Batteries)	-15°C To 55°C
4	Relative Humidity	90% at 20°C 95% Non-condensing
5	Audible Noise (at 1 meter distance)	< 70 dB

6	Cooling	Forced air
0	Special Features	
1	DSP based Control	FPGA
2	Inverter Free-running at Fixed Frequency	Yes
3	Paralleling of UPS Systems	Yes
4	Option of Single Battery Bank for Multiple Paralleled UPS Systems	REQUIRED
5	Remote Monitoring & Control	Required (RS-232/ SNMP)
6	Safe Shutting-down of the Network Computer Systems thru UPS Management Software	Required (RS-232/ SNMP)
7	Fault-data Storage, Downloading and Analysis	Required (RS-232/ SNMP)

List of Preferred Makes of Material

40 KVA UPS	Schneider/ Vertiv/ TMEIC / Fuji / ABB / Eaton / Numericss
Battery	Excide Model NXTPLUS /Amron Model Quanta (Amaraja)/ HBL (Optimuz)
MCB DB, MCB'S, MCCB, Enclosure,	Legrand / Hager / Siemens / Schneider/
XLPE Insulated, PVC Sheathed,Armoured / Unarmoured 1.1 Kv Grade LT Cable/ Control Cable ISIMark	Havells / KEI / RR Kabel /Polycab/ Rallision

Note:- The decision of Engineer in charge regarding the model and make shall be final and binding based on prevailing models at the time of execution.

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SCHEDULE OF WORK

Name of work:- RMO of various E&M Services at Vidyut Bhawan, New Delhi during 2026-27. (SH:- SITC of 40 KVA 3 Phase online UPS at ERP Section) .

Sr. No.	Description	Quantity		Rate	Unit	Amount
1	Supply, installation, testing and commissioning of 40 KVA true online (3ph to 3 ph) UPS system suitable for parallel operation, forced air-cooled, high frequency PWM 3 Level IGBT rectifier and inverter, built in or external phase sequence corrector at input parameters - THDI < 5 %, input voltage range 415V +/- 15% , frequency + 3%, input power factor > 0.99 or unity, output parameters rated voltage 415 VAC +/-1% frequency 50 Hz + 0.2 output wave form pure sine wave, overload capacity 120% for 10 minutes, Harmonic distortion with linear load < 3% , non linear load load < 5% , load admissible crest factor 3:1, communication interface RS 232/ SNMP general Data ambient operating temp 40 degree centigrade relative humidity 95% maximum (Non Condensing) noise level < =60 dB at 1 meter distance indication Audio, 30 Min backup with 12Volt, VAH not less than 24000 SMF Batteries for 40 KVA UPS including batteries Rack, interconnecting cables, with inbuild or external isolation transformer & all necessary measuring facility, controls, fault, status indications to be provided as reqd at site. (Minimum 92% energy efficiency)	1	Set	7,92,110	Each	7,92,110.00
2	Supply, installation, testing and commissioning of 4 pole MCCB enclosure on surface/recess including testing, commissioning etc. as required.	1	Job	2,872	Each	2,872.00
3	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 V, TPN MCB distribution board of sheet steel, dust protected, duly powder painted, inclusive of 200 A tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCBs (but without MCBs and incomer) as required. (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)					
3.1	12 way (4 + 36), Double door	1	Nos.	13,512	Each	13,512.00
5	Providing and fixing following rating and breaking capacity and pole MCCB with thermomagnetic release and terminal spreaders in existing cubicle panel board including drilling holes in cubicle panel, making connections, Ics=100% Icu and Operational Voltage 690V etc. as required.					
5.1	100 A,30KA,FPMCCB	2	Nos.	8,127	Each	16,254.00
6	Supplying and fixing 5 A to 32 A rating, 240/415 V, 10 kA, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
6.1	Triple pole	12	Nos.	1,070	Each	12,840.00
7	Supplying of XLPE insulated & PVC sheathed galvanised steel strip/wire armoured aluminium					

	conductor cable of KV grade confirming to is 7098 (Part I) amended upto date as required on surface/wall etc. as required.					
7.1	4x 16 sqmm	250	Metre	340	Per Mtr.	85,000.00
7.2	3.5x 35 sq.mm	50	Metre	525	Per Mtr.	26,250.00
8	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.					
8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	250	Metre	64	Per Mtr.	16,000.00
9	Providing and fixing 6 SWG dia G.I. wire on surface or in recess for loop earthing as required.	600	Metre	84	Per Mtr.	50,400.00
	TOTAL Rs.					10,15,238.00

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