J&K Project Construction Corporation Ltd.

Standard Bidding Document

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Technical Specifications

Name of Work : **Supply, Installation, Testing & Commissioning of UPS System at New Legislature Complex, Jammu.**

Unit : **Unit-Kathua, JKPCC Ltd. Rail Head Complex, Jammu**

Time of Completion : **30 days from the Date of Award of Contract**

Sig. Of Bidder

J&K PROJECTS CONSTRUCTION CORPORATION LTD.

(A J&K State Govt. Undertaking)

NOTICE INVITING TENDER

E-NIT No: 17 of 2018-19 Dated :12/11/2018

On behalf of Managing Director, Jammu & Kashmir Projects Construction Corporation Ltd., the Deputy General Manager, Unit-Kathua, JKPCC Ltd., Jammu invites e-tenders from OEM'S (Original Equipment Manufacturers)/authorized representative for the following work:

S.No	Name of Work	Estimated Cost (Rs. in lacs)	Cost of document(Rs.)	Earnest Money (Rs. in Lacs)	Time of completion	Class of Contractor
1.	**Supply, Installation, Testing and Commissioning of UPS System at New Legislature Complex, Jammu.**	**Rs. 150.00 Lacs**	**Rs. 2000/-**	**Rs. 3.00 Lacs**	**30 Days from the date of award of contract**	**"A "**

Qualification criteria, scope of work, tender documents, BOQ and all other terms & conditions can be seen and downloaded from **www.jktenders.gov.in**.

Critical Dates:

1.	Period of downloading of NIT	**15.11.2018** from **1000** Hrs. to **06.12.2018** upto **1400** Hrs.
2.	Pre-Bid Meeting	**19.11.2018** at **1200** Hrs. in Office of General Manager, JKPCC Ltd., Rail Head Complex, Jammu
3.	Bid submission dates	**19.11.2018** from **1000** Hrs. to **06.12.2018** upto **1400** Hrs.
4.	Date of opening of Bid	**08.12.2018** at **1200** Hrs. in Office of General Manager, JKPCC Ltd., Rail Head Complex, Jammu
5.	Original Hard Copies of Technical Bid will be invited from L1 only	

Any other information regarding e-tendering process can be had from the office of Deputy General Manager, Unit-Kathua, JKPCC Ltd. Rail Head Complex, Jammu or e-tendering Cell, Jammu.

Deputy General Manager,
JKPCC Ltd., Unit -5, Kathua.

No: JKPCC/v/1314-18
Dated: 06/11/2018
Copy to the: -

1. Managing Director JKPCC Ltd, Srinagar for information.
2. Executive Director JKPCC Ltd, Jammu for information.
3. General Manager (J), JKPCC Ltd Jammu for information.
4. Deputy Director Information Jammu for information. It is requested that the notice may please be published in two leading English daily newspapers of State and one National Paper for its wide publicity.
5. E-Tendering Cell for uploading the Tender on **www.jktenders.gov.in** and **www.jkpcc.com**

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OFFICE OF THE DEPUTY GENERAL MANAGER UNIT-Kathua, JKPCC Ltd- JAMMU.

NOTICE INVITING TENDER

E-NIT No: 17 of 2018-19 Dated :12/11/2018

INVITATION:

On behalf of Managing Director, Jammu & Kashmir Projects Construction Corporation Ltd., the Deputy General Manager, Unit- Kathua, JKPCC Ltd., Jammu invites e-tenders from OEM's or from authorize representative for ***Supply, Installation, Testing & Commissioning of UPS System at New Legislature Complex, Jammu.***

INSTRUCTIONS TO BIDDERS

1) Bid documents can be seen at and downloaded from the websitehttp://jktenders.gov.in Bid documents contain qualifying criteria for bidders, specifications, bill of quantities, conditions and other details.
2) All the relevant original instruments (Hard copies) in respect of successful bidder only, shall be submitted to General Manager, JKPCC Ltd., Jammu.
3) Bid security in shape of CDR / FDR payable at Kathua pledged in favour of Deputy General Manager, JKPCC Ltd., Unit-Kathua, and shall be valid upto 01.11.2019 and cost of tender document shall be deposited into the Bank accounts by the bidder for which the following information can be used by the bidder.
   i) Name of the Bank = J&K Bank Ltd
   ii) Account title = Financial Controller JKPCC Ltd., (Current Account)
   iii) Account No. = 0084010100002408
   iv) Branch = New Secretariat Road Srinagar.
   v) IFSC Code = JAKAOPROMPT
   vi) Swift Code = JAKABBINRSGR – Optional

5. The bidders shall upload scanned copy of bank payment acknowledgement slip.
6. The bid for the work shall remain open for acceptance for a period of 90 days from the date of opening of bids. If any bidder/ tenderer withdraws his bid/ tender before the said period or makes any modifications in the terms and conditions of the bid, the said earnest money shall stand forfeited.
7. A bidder shall not be permitted to bid for works in the jurisdiction of officer responsible for award and execution of contract in which his or his spouse's near relative (defined as first blood relations, and their spouses) is posted as Divisional Accountant or as an officer in any capacity between the grades of Superintending Engineer and Assistant Engineer (both inclusive)
8. No engineer of gazette rank or other Gazetted officer employed in Engineering or Administrative duties in an Engineering department of the State Government is allowed to work as a contractor for a period of two years after his retirement from Government service, without Government permission. 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 as aforesaid before submission of the tender or engagement in the contactor's service.
9. Other details can be seen in the bidding documents.
10. Any other information regarding e-tendering process can be had from the Office Deputy General Manager, JKPCC Ltd., Unit -Kathua, contact Nos:9419151534.
11. Rates quoted shall remain valid for 365 days from the date of issue of allotment.
12. Instruction to bidders regarding e-tendering process
    a) The interested bidder can download the bid from the websitehttp://jktenders.gov.in.Bidders are advised to download bid submission manual for the help of bid submission process from the Downloads option as well as from Bidders Manual Kit on website http://jktenders.gov.in

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b) To participate in bidding process, bidders have to get digital signature certificate card as per information technology Act- 2000, to participate in online bidding. This certificate will be required for digitally signing the bid. Bidders can get above mentioned digital signature certificate card from any approved vendors. The bidders who already possess valid digital signature certificates card, need not to procure new digital signature certificate card.

c) The bidders have to submit their bids online in electronic format with digital signature. The bids proposed without digital signature will not be accepted

.d) Bids will be opened online as per time schedule mentioned in the tender document.

e) Before submission of online bids, bidders must ensure that scanned copy of all the necessary documents have been attached with bid

f) The department will not be responsible for delay in online submission due to any reasons.

g) All required information for bid must be filled and submitted online. The bidder should recheck his online document before submission on line otherwise damaged/ corrupt document shall not be considered in any case.

h) The details of hard copies of original instruments in respect of cost of bid Documents & Earnest Money specified in the tender documents should be the same as submitted online otherwise tender will summarily be rejected.

i) Bidders are advised to use My Documents area on their used on JK tender e tendering portal to store important documents which are used in all tenders like, sales Tax clearance Certificate etc and attach these certificate as Non Statutory Documents while submitting their bids.

j) Bidders are advised not to make any change in BOQ contents or its name in no case they should attempt to create similar BOQ manually. The BOQ downloaded should be used for filling the net item rate inclusive of all taxes and it should be saved with the same with the same name as it contains.

13. Bidders are advised to scan their documents at 100 DPI (Dots per inch) resolutions with Black and white, JPEG scan properly convert scanned images to PDF

14. The guidelines for bidders to submit bid online can be downloaded from websitehttp://jktenders.gov.in Dy. General Manager, JKPCC Ltd. Unit -Kathua.

General Work-Experience:

The Applicant should have the Experience of Supply, Installation, testing and commissioning of one or more similar type of works in preceding five (5) years. The reference date for considering the period of preceding three years for experience is 31-03-2018.

Turnover:

The Applicant should have achieved an annual financial turnover of 50% of the advertised amount during any 3 years of proceeding 5 years. Further,

Selection Criteria:

The bidder should have successfully completed 1(One) work of 80% of total Value of the Estimated Cost.

Or

The bidder should have successfully completed 2(Two) work of 60% of total Value of the Estimated Cost.

Or

The bidder should have successfully completed 3(Three) work of 50% of total Value of the Estimated Cost.

Note:

a. Other income shall not be considered for arriving at Annual Turnover.

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b. As a proof of turnover, audited Profit & Loss account along with Statutory Auditor's report for last three years is required to be submitted. In case where audited profit and loss account for the immediately preceding year is not available, then a statement of profit and loss account duly certified by the statutory auditors with his comments shall be enclosed with the application along with the copy of appointment letter of the statutory auditor.

c. Each bidder must produce:

- The current income-tax challan, PAN No. valid OEM/ Electrical Contractor License and EPF Registration No.
- A declaration that the information furnished with the bid documents is correct in all respects; and
- Such other certificates as defined in the ITB. Failure to produce the certificates shall make the bid non-responsive.

d. Each bidder must demonstrate:
Availability of technical personnel for Erection/ work

e. Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have :

- Made misleading or false representations in the forms, statements, declarations and attachments submitted in proof of the qualification requirements; and/or
- Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc.

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Essential Document for opening Technical Bid

A. Cost of tender document & EMD.

Bids must be accompanied by bid security in the shape of **CDR/FDR** payable at Jammu pledged in favour of **Accounts Officer, JKPCC Ltd., Jammu** and shall be valid for 1 year and **cost of tender documents in shape of Demand Draft (Non-refundable) in the name of Dy. General Manager Unit Electric, JKPCC Ltd., Jammu** payable at Jammu

B. Affidavit & Certificates.

1. **Copies** of original documents defining constitution/ legal status, place of registration and principal place of Business.
2. **Copies** of original Valid TIN. & PAN.
3. **Copy** of original valid OEM/Electrical Contractor License.
4. **Copy** of valid EPF Registration No.
5. The bidders shall provide **Affidavit** along with the bid document with the following undertakings:
   a. That JKPCC Ltd. is authorized to seek references from Bidders bankers.
   b. That the bidder would be able to invest a minimum of 25% of Contract Value.
   c. That the bidder is not black listed/debarred by any Govt. or Semi-Govt. Departments from participation in tendering.
   d. That bid will remain valid for a period of ninety (90) days from the date of opening of Technical bids.
   e. Affirming that the information submitted by the bidder with the bid / supporting documents is true & correct to the best of his knowledge and belief.
6. The Applicant should have achieved an annual financial turnover of 50% of the advertised amount during any 3 years of proceeding 5 years, duly attested by a Chartered Accountant.

   The Applicant should have the Experience of executing one or more similar type of work of Supply, Installation, Testing & Commissioning of UPS System.

   . Experience Certificate issued by an engineer not below the rank **of Executive Engineer/s (Electrical)** from J&K State/CPWD/ Railways and other State/ Central Govt. Undertaking certify that:

   - The bidder have successfully completed 1(One) work of 80% of total Value of the Estimated Cost. – or-
   - The bidder have successfully completed 2(Two) work of 60% of total Value of the Estimated Cost. –or-
   - The bidder have successfully completed 3(Three) work of 50% of total Value of the Estimated Cost.

Note:- *Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representation in the forms, statements and attachments submitted in proof of the qualification requirement and/or record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion, litigation history, or financial failures etc and/or participated in the previous bidding for the same work and has quoted unreasonably high bid prices and could not furnish rational justification to the employer*.

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General Conditions of Contract

1 TIME FOR COMPLETION

The TIME FOR COMPLETION of the Work, including time required for creation of construction facilities etc, shall be 30 Days from the date of award of contract.

2 CONSTRUCTION PROGRAMME:

The Bidder shall include in his Bid, the detailed construction programme for executing the work, describing broad Components, Methodology for **Supply, Installation, testing and Commissioning of Façade Lighting for New Legislature Complex, Jammu.**

3 SITE VISIT

The bidder at his own cost/expenses is advised to visit and examine the Site of Works and its surroundings and obtain for himself on his own responsibility, all information that may be necessary for preparing the bid and entering into a Contract .

Bidders shall familiarize themselves especially with the rules and regulations, local Laws applicable to carry out such Work in J&K. The Owner shall not entertain any request for clarifications from the Bidders, regarding such statutory provisions.

4 BID DOCUMENTS

4.1 The Bid Documents shall comprise Instruction to Bidders (ITB), General Conditions of Contract and Special Conditions of Contract (SCC), Technical Specifications, BoQ and Appendix Forms.

4.2 Amendment to Bid Documents

(a) At any time prior to the deadline for submission of bids, the Owner may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Bid Documents by issuance of an Addendum .

(b) The Addendum will be sent in writing or by fax/e-mail to all prospective bidders who have been issued the Bid Documents and will be binding upon them. Prospective bidders shall promptly acknowledge receipt thereof to the Owner.

(c) In order to afford prospective bidders reasonable time sufficient to take an Addendum into account in preparing their bids, the Owner may, at its discretion, extend the deadline for the submission of bids .

4.3 Preparation of Bids

(a) The bid shall be in English language only Failure to comply with this shall disqualify a bid .

(b) The Bid must contain the name and places of business of the person or persons making the bid and must be signed by the duly authorized representative with his usual signature and sealed by the Bidder the name(s) and designation(s) of persons signing should also be typed or printed below the signature.

(c) Bid by Companies/Firms/Parties must be furnished with full names of Companies/Firms and be signed by their legally authorised representative(s)

(d) Satisfactory evidence of authority of the person(s) signing on behalf of the Bidder shall be furnished with the bid.

(e) The Bidder's name stated on the proposal shall be the exact legal name of the firm/Company/Parties.

(f) Erasures or other changes in the Bid Document including the proposal documents shall be over the initials of the persons signing the bid.

Bids not conforming to the above requirements of signing are liable to be rejected.

4.4 Specific Issues

(a) A prospective bidder is expected to examine all instructions, terms & conditions, forms and Owner's Specifications/Requirements in the Bid Document and fully inform himself as to all the conditions and matters which may in any way affect the Works, his bid or the cost thereof Further, failure to furnish all information required by the Bid Document or submission of incomplete offers, conditional bids and proposals containing deviations from the Bid Document shall be rejected as non-responsive .

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(b) It will be imperative for each Bidder to fully inform himself of all local conditions and factors which may have any effect on the execution of the Works covered under Scope of Works and these Documents .

It would be understood and deemed that such factors have been properly considered by the bidder while submitting the bids Owner accepts no liability for the lack of such clear information or its effect on the cost of the Works to the Bidder .

4.5 Bidders shall assess their requirement of infrastructure and construction facilities to suit their methodology for successful implementation of the work .

Thus, while working out their bid price, the bidders are required to take into account entire scope of the work defined in Bid Documents.

5. PRICE BASES, CURRENCIES

Bidders shall quote their Prices in Indian Rupees in the Performa as given for Schedule of Prices/Bill of Quantity Bidders shall quote for the entire package on a single source responsibility basis. Bidders shall give "Bill of Quantities" and rates covering entire scope of the Works. The prices are fixed No price variation/adjustment shall be allowed in the currency of contract.

The Bidder shall quote his prices logically in bid form. The Bidder is advised to avoid offering of rebate/discount/loading. However, in case of exceptional circumstances, the rebate/discount/loading offered by the Bidder should be only in the Performa of Bill of Quantity. The bidder should offer the rebate on a percentage basis applied uniformly to all the Prices in the Performa given in BoQ.

The quoted rates should be inclusive of all duties, levies, taxes, costs like transportation, handling, insurance etc.

6. SUBMISSION OF BIDS AND

The priced Bill of Quantities/ Schedule of Prices to be submitted online only.

Deadline for Submission of Bids

Hard Copy of Bid shall be acknowledged from L1 only by the Owner at the address specified not later than the last date and time for submission of bids.

The Owner may, in exceptional circumstances and at its discretion, extend the deadline for submission of bids by issuing an Addendum, in which case all rights and obligations of the Owner and the bidders previously subject to the original deadline will thereafter be subject to the deadline as extended.

Modification, Substitution and Withdrawal of Bids

The bidder may modify, substitute, or withdraw his original bid after its submission but in any case before the official deadline for submission, if a corresponding written notice of the modification, substitution or withdrawal is received by the Owner prior to the deadline for submission of bids .

The bidder's modification, substitution, or withdrawal shall be prepared, sealed, marked, and delivered in with the outer and inner envelopes additionally marked "MODIFICATION", “SUBSTITUTION” or “WITHDRAWAL", as appropriate.

No bid shall be modified, substituted or withdrawn by the bidder after deadline for submission of bids.

Withdrawal of the Bid during the interval between the deadline for submission of Bids and expiration of the period of bid validity shall result in the forfeiture of the bid security .

7. GST REGISTRATION NUMBER:

The successful Bidder shall furnish to the Owner his GST number obtained from commercial taxes department under GST Act. No payment shall be made to the Contractor unless he submits his GST Number

8. VALIDITY OF BID

The bid should be kept valid for acceptance for a period of 90 days from the date of opening of Bids. In exceptional circumstances the Owner may solicit the bidder’s consent to an extension of the period of the validity .The request and the response thereto shall be made in writing (including telefax). The Bid Security shall also be extended by the same period as the extension in the validity of the bid. A bidder accepting the request will not be permitted to modify its bid.

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9. OPENING AND EVALUATION OF BIDS

i) Bid Opening

The Owner will open the bids, including WITHDRAWALS, SUBSTITUTIONS and MODIFICATIONS made hereof, in the presence of bidders' designated representatives who choose to attend, at the time, date, and location stipulated in the hereof. The bidders' representatives who are present shall sign a register evidencing their attendance. No Bid shall be rejected at the Bid opening except for the late Bids pursuant.

ii) Envelopes will be opened in the following order;

a. Withdrawal notices
b. Substitution
c. Original bid along with modifications, if any
d. Original bids for which an acceptable notice of withdrawal has been submitted shall not be opened.

All important information and any such other details as the Owner may consider appropriate, will be announced by the Owner at the Bid opening. This shall include but may not be limited to the Bidders' names, the Bid Prices including deviations, any discounts, withdrawals, substitutions and bid modifications, and the presence (or absence) of Bid Security .

Bids not opened and read out at bid opening shall not be considered further for evaluation, irrespective of the circumstances.

iii) Bid Evaluation

General

The Bids will be evaluated by the Owner to ascertain the lowest evaluated technically and commercially responsive bid for the complete scope of the proposal, as covered under these Bid Documents. The evaluation of techno-commercial bids shall be carried out on the techno-commercial submission of the bidder for the entire Scope of Work meeting Owner's Specifications/Requirements and Qualification Criteria as detailed in these Bid Documents.

Preliminary Examination:

The Owner will examine the bids to determine whether the documents have been properly signed, whether required sureties have been furnished, whether computational errors for price bids have been made and whether the bids are generally in order.

Prior to detailed evaluation, the Owner will determine the substantial responsiveness of each bid to the Bid Documents. A substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents, without material deviation or reservation. A material deviation or reservation is one (a) which affects in any substantial way the scope, quality, or performance of the Works or inconsistent with the Bidding Documents; (b) which limits in any substantial way, the Owner's rights or the Bidder's obligations under the Contract; or (c) Technical proposal is such, as if the bidder has not understood the work implementation (d) whose rectification would affect unfairly the competitive position of other bidders presenting substantially responsive bids . The Owner's determination of bid's responsiveness is to be based on the contents of the bid itself without recourse to extraneous evidence.

A bid determined as not substantially responsive will be rejected by the Owner and may not subsequently be made responsive by the bidder by correction of the non-conformity.

The Owner may waive any minor non-conformity or irregularity in a bid which does not constitute a material deviation provided such waiver does not prejudice or effect the relative ranking of bidder .

Correction of Errors

In the Bill of Quantities the rates shall be written both in words and in figures. Bidder shall also show the total on each page and the Grand Total of the whole Contract. Corrections, if any, shall be made by crossing out, initialing, dating and rewriting.

If on check, found differences between the rates given by the contractor in words and figures or in the amount worked out by him in the Bill of Quantities and General Summary, the same shall be adjusted in accordance with the following rules:

a) In the event of a discrepancy between description in words and figures quoted by a tenderer, the description in words shall prevail.

b) In the event of an error occurring in the amount column of Bill of Quantities as a result of wrong multiplication of unit price and quantity, the unit price shall be regarded as firm and multiplication shall be amended on the basis of the price.

c) All errors in totaling in the amount column and in carrying forward totals shall be corrected.

d) The General Summary and the tendered sum shall be amended accordingly. The tendered sum so altered shall, for the purpose of tender, be substituted for the sum originally tendered and considered for acceptance instead of the original sum quoted by the Bidder.

10. COMPARISON OF BIDS

Prices quoted by the Bidder for Complete Scope of Work including defect liability period shall be Considered for Comparison of Bids .

Taxes and duties

The Bid Prices shall be inclusive of all taxes and duties .The effect of all applicable taxes, duties, other levies and charges etc should be ascertained by the bidder and included in his Bid Price.

11 AWARDS

The Owner will award the Works to the bidder whose bid has been determined to be substantially responsive to the Bidding Documents and who has offered the lowest Evaluated Bid Price .

12 NOTIFICATION OF AWARD (LETTER OF ACCEPTANCE)

Prior to expiration of the period of bid validity, the Owner will notify the successful bidder by tele fax confirmed by registered letter or courier that its bid has been accepted. This letter (hereinafter and in the Conditions of the Contract called the "Letter of Acceptance") shall specify the sum which the Owner will pay the Contractor in consideration of the execution and completion of the Works and the remedying of any defects therein by the Contractor as prescribed by the Contract.

13 PERMANENT ACCOUNT NUMBER (PAN):

Within 28 days from the date of issue of the Letter of Acceptance, the successful Bidder shall furnish to the Owner his Permanent Account Number issued by the Income Tax Authorities in India .No payment shall be made to the Contractor unless he submits his Permanent Account Number.

14 PERFORMANCE SECURITY:

Within a period of 21 days from the date of issue of Letter of Acceptance, the successful bidder shall furnish to the Owner, Bank Guarantee for amounts equal to 8 per cent (%) of the Contract Price in the form Bid Security annexed in the List of Forms.

Failure of the successful bidder to comply with the requirement of Clause 15 shall constitute a breach of contract, cause for annulment of the award, forfeiture of the Bid Security, and any such other remedy the Owner may take under the provisions of the Contract.

15 CORRUPT OR FRAUDULENT PRACTICES

It is expected from the Bidders that they will observe the high standard of ethics during the procurement and execution of such Contracts. In pursuance of this policy:

(a) For the purpose of this provision, the terms set-forth below shall mean as under:

(i) **"corrupt practice"** means the offering, giving, receiving or soliciting, directly or indirectly of anything of value to influence the action of a public official in the procurement process or in Contract execution;

(ii) **"Fraudulent practice"** means a misrepresentation or omission of facts in order to influence a procurement process or the execution of a Contract

(iii) **"Collusive practices"** means a scheme or arrangement between two or more bidders with or without the knowledge of the Borrower, designed to establish bid prices at artificial, non-competitive levels;

(iv) **"Coercive practice"** means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in a procurement process, or affect the execution of a contract;

(b) A bid may be rejected by the Owner if it is determined at any stage that respective bidder has engaged in corrupt or fraudulent or collusive or coercive practices in competing for the Contract in question;

The Owner may declare a firm/Party ineligible, either indefinitely or for a stated period of time, to be awarded a Contract if it at any time determines that the firm /Party has engaged in corrupt or fraudulent or collusive or coercive practices in competing for, or in executing a Contract.

Representative of vendors, suppliers, contractors, consultants, service providers or any other agency (ies) doing any type of business with JKPCC Ltd is expected and shall be responsible to ensure that there is no fraudulent act being committed in their areas of responsibility/ control. As soon as he/ she comes to know of any fraud or suspected fraud or any other fraudulent activity must report such incident(s) Such reporting shall be made to the designated Nodal Officer(s), nominated in Project/ Corporate Centre The reporting of the fraud normally should be in writing In case the reporter is not willing to furnish a written statement of fraud but is in a position to give sequential and specific transaction of fraud/ suspected fraud, then the officer receiving the information/ Nodal Officer shall record such details in writing as narrated by the reporter.

16 Contract:

16.1 Following documents shall be attached/annexed to the Agreement and thus form part of the Contract;

a) General Conditions of Contract.
b) Bill of Quantities.
c) Special Conditions of Contract.
d) Technical Specifications
e) Letter of Award.
f) Critical conditions of the contract.
g) Any other document forming part of the Contract.

16.2 In case of any discrepancy between the documents mentioned in Clause 16.1 above the order of documents shall be as follows:

i. Letter of Award
ii. Special Conditions of Contract.
iii. General Conditions of Contract.
iv. Technical Specifications
v. Bill of Quantities.
vi. Critical conditions of the contract.
vii. Any other document forming part of the Contract.

17. PRICES:

17.1 The prices to be quoted by the intending tenderer shall include the supply, installation, testing and commissioning of works at the site, of all component, ancillary material and other items whatsoever required for carrying out the job to fulfill the intent and purposes as laid down in the Technical specifications.

17.2 The tenderer's price shall be deemed to include all components. The contractor shall also include, in his price, all taxes duties or other levies (viz. Excise duty, customs duty, works contract tax, sales tax, entry tax, octroi etc.,) which are legally livable on supply of equipments& material and its Installation. Failure to include all livable taxes and duties will not entitle the contractor to any extra claims from the Engineer-Incharge. The contractor's rate shall remain firm and fixed during the currency of the contract.

17.3 The prices and unit rates quoted by the bidder in the bid shall be firm and deem to be adequate to cover the entire responsibility involved in the execution and completion of work. No Price Variation/adjustment is payable during the currency of Contract. The price shall not be subject to exchange rate variations. No increase due to change in daily wages of labour be paid, due to any reasons whatsoever.

17.4 The rates quoted by the Contractor shall be net so as to include all the requirements described in the contract agreement and no claim whatsoever due to fluctuations in the price of materials and labour will be entertained.

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17.5 The contractor shall provide all equipments, instruments, labour and such other assistance required by the Engineer-in-charge for measurement of the works, materials etc.

18. Temporary Works

Before any temporary works is commenced the contractor shall submit at least 7 days in advance to the Engineer-in-charge for approval of complete drawings of all temporary works he may require for the execution of the works. The contractor shall carry out the modifications relating to strength, if required by the JKPCC/Engineer-in-charge in accordance with the conditions of contract at his own cost. The contractor shall be solely responsible for the stability and safety of all temporary works and unfinished works and for the quality of the permanent works resulting from the arrangement eventually adopted for their execution. For the Civil works like cutting of walls for conduit works or any other job requirement with necessary repairs as per requirements at site including making well the same, the expenditure shall be borne by the agency/contractor. Contractor shall quote rates accordingly. Nothing extra shall be paid on this account.

19. Water, Power and Other Facilities:

a) Raw water supply is available at site which the contractor can use for any constructional needs. However for drinking water Contractor shall have to make their own arrangement at their own cost.

b) Metered JKPDD power supply shall be made available to the contractor who shall have to pay the JKPCC/Engineer-in-charge for energy consumed on per month basis. Generator back up if required shall have to be arranged by the contractor at their own cost.

20. Accommodation:

a) The contractor shall provide and maintain all necessary offices, workshops, stores, shelters, sanitary facilities, canteens and other temporary structures for themselves in connection with the work at the site at their own cost after getting the approval from the JKPCC.

b) All temporary buildings and facilities as mentioned above shall be removed on completion of the work or at any other earlier date as directed by the JKPCC.

c) Watch &ward shall be responsibility of the contractor till the completion of job.

21. Facilities for contractor's employees

The contractor shall make his own arrangement for the housing and welfare of his staff and workmen including adequate drinking water facilities. The contractor shall also make the arrangements at his own cost for transport where necessary for his staff and workmen to and from site of work at his own cost.

22. Liquidation of damages

0.25% of contract value for every week of the delay after the schedule date of completion of work to the contractor will be charged. Total recovery amount shall be maximum upto 5%.

23. Disposal of Refuse

The contractor shall cart away all debris, refuse etc arising from the work from the site and deposit the same as directed by the Engineer-in-charge at his own cost. It is the responsibility of the contractor to obtain from the local authorities concerned to the effect that all rubbish arising out of contractor's activities at the construction site or any other off-site activities borrow pits has been properly disposed off.

24. Tools, Storage of Materials, Protective Works and Site Office Requirements

The contractor shall provide, fix up and maintain in an approved position proper office accommodation for the contractor's representative and staff which offices shall be open at all reasonable hours to receive instruction notices or communications and for storage of tools, etc and clear away the same on completion of the works and make good all work disturbed.

All drawings maintained on the site are to be carefully mounted on boards of appropriate size and covered with a coat of approved varnish. They are to be protected from ravages of termites, ants, and other insects and made available to the JKPCC for inspection or such other purposes they may require.

The contractor shall provide at his own cost all artificial light required to complete the work within the specified time.

The contractor shall provide a suitable temporary hut for the watchmen and clear away the same when no longer required and to provide all necessary attendance, lights etc required.

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The contractor shall arrange for temporary latrines for the use of workers and field staff and keep the same in a clean and sanitary condition to the satisfaction of the Public Health Authorities and shall cause such latrines and soil to be cleared away whenever necessary and shall make good all the works disturbed by these conveniences.

Every precaution shall be taken by the contractor to prevent the breeding of mosquitoes on the works during the construction, and all receptacles, cistern, water tanks etc used for the storage of water must be suitably protected against breeding of mosquitoes. The contractor shall indemnify the JKPCC against any breach of rules in respect of anti-malarial measures.

The contractor shall not fix or place any placards or advertisement of any description or permit the same to be fixed or placed or upon any boarding gantry, building structures other than those approved by the JKPCC.

Protective Measures: The contractor from time to time of being placed possession of the site must make suitable arrangements for watching, lighting and protecting the work, the site and surrounding property by day, by night, on Sundays and other holidays.

Contractor shall indemnify the JKPCC against any possible damage to the building, roads, or members of the public in course of execution of the work.

The contractor shall provide necessary temporary enclosures, gates, entrances etc for the protection of the work and materials and for altering and adopting the same as may be required and removing on completion of the works and making good all works disturbed.

Storage of Materials: The contractor shall provide and maintain proper sheds for the proper storage and adequate protection of materials etc and other work that may be executed on the site including the tools and materials of nominated sub-contractors and remove same on completion.

So also, steel materials are to be stored above the ground level to prevent the same from getting rusted.

25. Tools:

All measuring tapes shall be of steel. Suitable scaffolding and ladders that may be required for safe working and taking measurement shall be supplied by the contractor.

Supervisors on the works shall always carry with them a one metre or two meter steel tape, a measuring tape of 30 meters, a spirit level and shall check the work to see that the work is being done according to the drawing and specifications. Supervisors shall also carry one test lamp with leads and one neon tester and necessary working instruments. The Site Engineer will use any or all measuring instruments or tools belonging to the contractors as he chooses for checking the works executed or being executed on the contract. The contractor should cover in his rates for making provisions for all reasonablefacilities for the use of his scaffolding, tools and plant etc for their work.

26. Idle Labour:

Whatever the reasons may be no claim for idle labour, additional establishment cost of hire and labour charges of tools and plants would be entertained under any circumstances.

27. Variation in quantities:

The quantities for ancillary works given in the schedule and / or in drawings are for the guidance of the tenderer. The contractor shall be paid on the basis of actual quantities of works carried out. However the contractor shall check these quantities before quoting and will bring to the notice of Consultants / Engineer-In charge for any major variation. The contract shall be on works contract basis and the Client reserves the right to add / delete any items of work during the currency of contract.

When there is likelihood of major variation in the quantity of any item after the finalization of design/drawings, the Contractor shall submit the details of such variation with proper Justification for approval of Engineer-in-charge. Payment of such deviated quantities shall only be made after approval of Engineer-in-charge.

28. Excise Duty, Taxes, Levies etc

The contractor shall pay and be responsible for payment of all taxes, including GST & other taxes as applicable, duties, levies, royalties, fees, cess or charges in respect of the works including but not limited to GST, works contract tax, customs duty, excise duty and octroi, payable in respect of materials, equipment plant and other things required for the contractor. All of the aforesaid taxes, duties, levies, fees and charges shall be to the contractor's account and the JKPCC shall not be required to pay any additional or extra amount on this account. If there occurs any Variation of taxes, duties,

fees, levies etc or introduction of new Tax or duty or levy or cess imposed under any Statute or Law, after 15 days prior to last date of submission of Bids, during the currency of contract which causes additional or reduced cost to the contractor, the same shall be intimated by the contractor to the owner and shall be paid/recovered to/from the contractor.

29. Approved Make:

The Material/Equipment/Machinery to be supplied and installed for Electric system Works shall be of Approved make as specified in Technical Specifications. The List of Approved makes and manufacturers is mentioned in BOQ.

30. Working Drawings, Maintenance Manuals etc.:

On the award of the work, the contractor shall immediately proceed with the preparation of detailed shop drawings prepared on the computer through the Auto CAD system based on the architectural drawings and site measurement, detailing the components that are to be installed and the ancillary works that are to be carried out. Three sets of all such schematic drawings shall be submitted to the Engineer-In-charge, for their approval as provided in General Conditions of Contract to ensure that the works will be carried out in accordance with the specifications and drawings, including such changes as may have been mutually agreed upon. All the drawings shall be received by the Engineer incharge for their approval, within two weeks of the award of work. The approval of the drawings by the Engineer-In-charge shall in no way relieve the contractor from his obligations to provide a complete and satisfactory System and installation as per intent and purpose as laid down in the specifications. Any omissions and/or errors shall be made good or rectified whether or not the drawings are approved.

Prior to the completion of the work, the contractor shall furnish (4) four sets of a comprehensive manual, describing all components, furnishing a list of instructions for the operations and maintenance of the system.

When the Engineer-In-charge makes any amendments in the above drawings, the contractor shall supply two fresh sets of drawings with the amendments duly incorporated along with check prints for approval.

Within four weeks of approval of all the relevant shop drawings, the contractor shall submit four copies of a comprehensive variation in the quantity statement. The contractor shall also fix in the control room neatly typed and framed, instruction in details, for the starting and running of the system. Any special tools required for the operation or the maintenance of the system shall be supplied free.

31. Supply, Installation, Testing and Commissioning:

The contractor shall carry out the complete supply, installation, testing and commissioning. All work shall commence on previously prepared locations for the main and sub systems. All the materials shall be moved from their place of storage into the system by the contractor. The contractor shall make his own arrangement to off load materials received at respective Air/Rail/Road transport terminal points, dispatch to site and to store all material received at site. The Engineer-Incharge shall provide clear storage and installation space only. All installation tools and tackles as and when required to suit the installation programme shall be provided by the contractor. All consumables required for installations such scaffolding etc. shall be provided by the contractor. Protective and finish painting shall be carried out by the contractor. The contractor shall indicate the electricity requirements during installation. The contractor shall remove all the waste material or rubbish from and about the work site and leave the job thoroughly cleaned up and ready for use.

32. Testing:

32.1 All types of routines and type tests as required shall be carried out at the works of the contractor or the manufacturers of the components. The routine tests will be carried out in presence of third party inspection viz. CEIL or CPRI in presence of Engineer in charge or his representatives. The inspection Certificate/Release note of the third party inspection agency should be finalized by Dy. General Manager Unit -Kathua, Jammu. The inspection charges should be borne by the Manufacturer/Contractor.

32.2 On the completion of the installation, the contractors shall arrange to carry out various initial tests as detailed in below, in the presence of and to the complete satisfaction of the Engineer-In-charge or their

representatives. Any defects or shortcomings found during the tests shall be speedily rectified or made good by the contractor at his own expenses.

32.3 The initial tests shall include but not be limited to the following:

32.4 To operate and check the proper functioning of all electrically operated components.

32.5 On the satisfactory completion of all 'Initial' tests the work shall be considered to be 'virtually complete' for the purpose of taking over by the Engineer-Incharge.

33. Rejection of Defective System:

If on test any portion of the system or components are found to be defective or not fulfilling the intent or the meaning of the specifications, the same shall be replaced or repaired to the entire satisfaction of the Engineer In-charge.

In case the contractor fails to remove the defects, within a period considered reasonable, the Engineer In-charge reserves the right to take necessary remedial measures through other agencies and all expenses thus incurred would be recovered from the contractor.

The Engineer In-charge reserves the right to operate all the equipment and complete system whether or not the Equipment is taken over after the initial test and commissioning. Any defects found during the initial or running tests shall be removed at a suitable time as decided upon by the Engineer In-charge.

34. Maintenance of the system and training of personnel:

The contractor shall arrange to provide at no extra cost operation and comprehensive maintenance of the entire electrical system of the building, regularly for a period of 36 Months (Thirty-six) from the date of commissioning i.e defect liability period.

35. Completeness of the Works:

The contractor shall provide all the required materials, equipment, ancillary items etc. whether or not each and every item is mentioned in the specifications. Any shortcomings noticed at any stage shall be made good at no extra cost.

36. Warranty and Guarantee:

The contractor shall guarantee that all the material, machinery and components supplied, installed, fabricated, by him shall be free from defects due to faulty design material and/or workmanship, that the system shall perform satisfactorily and the efficiency and functioning system of the system and all the components shall not be less than the parameters laid down in the specifications and the performance shall be within the specified design limits. In case of any shortcoming the contractor shall replace the necessary components/items at no extra cost or alternately the Engineer In-charge shall be entitled to deduct a proportionate amount from payments due to the contractor.

The period of the guarantee shall be minimum of 36 Months/manufacturer's warranty (whichever is more) from the date of commissioning during which period any or all components found to be defective shall be replaced or repaired free of charge and any shortcomings found in the system functioning as specified shall be removed at no extra cost. The contractor shall provide the necessary personnel and tools for fulfilling the above guarantee.

If for any reason the commissioning of the system cannot be carried out due to reasons attributable solely to the Engineer In-charge, then the system shall carry a guarantee for a period of 36 Months from the date of 'virtual completion' - a date which shall be certified by Engineer In-charge.

If the defects are not removed within a reasonable time the Engineer In-charge may arrange to do so at the contractor's risk and cost, without prejudice to any other rights.

37. Safe custody and storage:

Safe custody of all equipments/items supplied by the contractor shall be his own responsibility till the final taking over by the Engineer In-charge. He should, therefore, employ sufficient staff for watch and ward at his own expenses. The Engineer In-charge may, however, allow the contractor to use the Equipment room/rooms etc. for temporary storage of his equipment if such spaces are ready and available.

38. Spares:

The Contractor guarantees to the Owner the supply of spares during defect liability period.

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39. Operation and Maintenance (O&M):

The Contractor shall provide all inclusive Operation and Maintenance (O&M) of installed electric system during the defect liability period inclusive of all material, labour and any other costs, as specified in the Contract, after commissioning of Plant/system at no extra cost to the Owner.

40. Site Visit:

The bidders are strongly advised to visit and examine the existing infrastructure and obtain, on their own responsibility, all information that may be necessary for preparing the Bid and entering into a Contract. The costs of visiting the sites shall be at bidders own expenses. JKPCC Ltd will assist for site visit in working days (Monday – Friday) between 9.30 AM to 4.00 PM.

41. Labour laws and safety regulations:

The Contractor will be required to make good for any damage caused during the awarded work. Any injury / casualty to any skilled / unskilled worker during the work execution will be the entire responsibility of the Supplier / Vendor and your labour should be duly insured. Contractor will be responsible for the compliance of the provisions of the various central &State enacted labour laws whichever is applicable to workmen deployed by the contractor party in relation with the subject services. Following rules / regulations may be concerned in particular.

- Employees Provident Fund and Miscellaneous Provisions Act, 1952.
- Employees State Insurance Act, 1948.
- Payment of Wages Act, 1936.
- Minimum Wages Act, 1948.
- Equal Remuneration Act, 1965.
- Contractor Labour (Regulation and Abolition Act), 1970.
- Payment of Bonus Act, 1965.
- The Employee's Compensation Act, 1923.

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Special Condition of the Contract

1. **Penalty for delay in completion:-**
   0.25% of contract value for every week of the delay after the schedule date of completion of work to the contractor will be charged. Total recovery amount shall be maximum upto 5%.

2. **Time extension:-**
   Suitable time extension shall be granted in case of increase in scope of work and in the event of delay beyond control of contractor to be determined by the department. The tender receiving authority reserves the right to accept or reject any tender or all tenders without assigning any reason thereof.

3. **Restoration of work: -**
   On completion of contract the contractor shall be responsible to remove all un-used material and restore the site in its original position at his own cost.

4. **Defect Liability period**:-
   The DLP shall be calculated from date of certified completion of work and period shall be 36 months from the certified date of completion by JKPCC Ltd.

5. **Safety**
   The contractor shall be responsible for safety of all men, material and machinery at site of work. He shall submit the insurance certificates in this regard within One month of date of allotment.

6. **Discoveries**
   Anything of historical or other interest or of significant value unexpectedly discovered on the site shall be the property of the Govt.

7. **Tests**
   The contractor shall be solely responsible for carrying out the mandatory tests required for the quality control at his own cost and shall submit a test report regarding the physical/ chemical properties as well as structural strength of material.

8. **Termination**
   The employer may terminate the contract if the contractor causes a fundamental breach of the contract. Fundamental breach of contract will include:-
   i. Continuous stoppage of Work for a period of 15 days without authorization of Engineer in-charge.
   ii. Contractor is declared bankrupt.
   iii. Any evidence of involvement of contractor in corrupt practices.
   iv. Contractor delays the completion of work beyond stipulated time of completion.
   v. If In case contractor fails to start /complete the work, within the stipulated time period, his CDR/Earnest Money shall be forfeited after termination of the contract. Besides, defaulting contractor shall be debarred from taking works in JKPCC Ltd., at least for two years and shall be recommended for blacklisting as well.

   Pursuant to the process of termination of defaulted contract, the employer reserves the right to invite fresh tender for the balance work at the risk and cost of defaulter contractor

   The date of start of the work shall be reckoned within 07 Days from the date of issuance of LOI/Contract allotment as the case may be.

9. **MAJOR LABOUR LAWS APPLICABLE TO ESTABLISHMENT ENGAGED IN BUILDING AND OTHER CONSTRUCTION WORK:-**
   a) Compliance with Labour Regulation Laws of J&K State.

10. **Specification/Quality Control:-** All items of works shall conform to specifications as per BOQ

11. **Insurance**:- Insurance cover to Labour / Machinery / Work / Plant material / Equipment by the contractor shall be mandatory.

12. **Laws Governing the Contract:-**The contract shall be governed by Laws of the land.

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13. Court's Jurisdiction:-In case of any disputes/differences between contractor and Department the jurisdiction shall be J&K State

14. All other terms and conditions are as same as are in vogue in JKPCC Ltd.

15. Other conditions:

i. The contractor/ agency failing to execute the work in part or in full. Action will be taken against him according to the following conditions:-
   a. A registered notice or notices sent through special messenger by the Engineer I/c to the contractor for non-start of work will amount to breach of contract.
   b. The corporation may execute the work left by the contractor at his risk and cost. Any additional amount involved for execution of work will be recovered from other claims/resources of the contractor available with the corporation.
   c. Incase contractor evades the receipt of notice or deliberately gives wrong address for the communication where it is not possible to deliver registered letter, the notice will be pasted on the entry gate of his premises in presence of a witness. This will be treated as notice being served upon the contractor.

ii. Tenderer shall not be entitled for any claim what so ever on account of expenses incurred by him on submission of the tender.

iii. All terms and conditions of NIT/ Agreement to be drawn by the contractor/ agencies shall be binding upon the contractor/ agencies as soon as the allotment of contract is awarded in favour of contractor/ agency. The terms and conditions contained in other similar nature of contracts of this corporation shall also be applicable.

iv. Misconduct/ Misbehavior observed during the tender opening process, during the execution of work with any officer / official shall be dealt under rules. He shall be disqualified in the tendering process / his contract shall be liable for termination.

v. The accepting authority reserves the right to accept or reject any or all the tender before or after their opening after assigning reason thereof. The allotting authority in view of exceptional circumstances reserves the right of granting the contract to any of the tenderer it deems proper in the interest of the work.

vi. The successful tenderer will abide by all labour laws and will be personally responsible for any casualty/ eventuality/ accident during the period of contract. For such eventualities he will have to insure his all workmen and machinery deployed on the work.

vii. The watch & ward of the material during execution shall be sole responsibility of the successful tenderer.

16. <u>Performance security (unbalanced bids)</u>

If the bid of the successful bidder is seriously unbalanced in relation to the Engineer's estimate of the cost of work to be performed under the contract the employer may require the bidder to produce detailed price analysis for any or all items of the bill of quantities to demonstrate the internal consistency of these prices with the construction methods.

In case the bid of the lowest bidder is found unbalance the successful bid shall have to produce additional performance security in the shape of CDR /FDR /BG within 21 days of opening of price bid as per the following break-up:

S.No	%-age of unbalanced bid with advertised cost	Additional performance security to be deposited
1	Upto & including 15% below	NIL
2	Greater than 15% below upto 30% below	3%
3	Greater than 30% below	5%

17. <u>Deviation items</u>:

No deviation items shall be executed by the contractor unless until it is approved in writing by the engineer-in-charge (i.e., Dy. General Manager).

18. <u>Security Deposit</u>

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a) The earnest money of the successful tenderer shall be retained and released after the successful completion of work.

b) Up-to 5% security deposit deductions shall be made from all interim bills including final bill.

c) The security deposit at the credit of the contractor shall be refunded to the contractor after the date of expiry of defect liability period of 36 months from the date of taking over of the work and removal of defects after conducting necessary repair to the entire satisfaction of the Engineer-in-charge.

d) The security deposit shall not bear any interest.

e) The security deposit shall be liable to forfeit as per the discretion of the Engineer-in-charge if the contractor fails to carry out work or perform/ observe any of the conditions of the contract.

19. Time of completion

The time being essence of any contract, the work is to be completed within 30 days..

20. Replacement of defective work and material

The contractor shall also be personally liable for civil and criminal prosecution under law if the specifications of the materials used are found in contravention to the specification prescribed during execution of the work even after completion and finalization of the contract i.e., at any stage during the prescribed life of the structure.

The tenderers shall in their own interest examine the conditions of the contract and specifications of the work. They shall also inspect the site and satisfy themselves (on their own) as to the climate and other conditions prevailing at the site. The nature and extent of the work, all existing and required roads and other mean of communication and access to site, availability of housing and other facilities, availability of different material, labour and probable sites, for labour camps, stores and godowns etc. They shall themselves obtain all necessary information as to the risks, contingencies and other circumstances which may effect of influence their tender, No extra charges consequent to any misunderstanding or otherwise no on this account shall be allowed.

21. Fundamental breach of contract will include:-

a. Continuous stoppage of Work for a period of 15 days without authorization of Engineer in-charge.

b. Contractor is declared bankrupt.

c. Any evidence of involvement of contractor in corrupt practices.

d. Contractor delays the completion of work beyond stipulated time of completion.

e. Pursuant to the process of termination of defaulted contract, the employer reserves the right to invite fresh tender for the balance work at the risk and cost of defaulting contractor.

f. If in case contractor failed to start /complete the work, within the stipulated time period, his CDR/Earnest Money shall be forfeited after termination of the contract. Besides, defaulting contractor shall be debarred from taking works in JKPCC Ltd. at least for two years.

g. Major Labour Laws applicable to establishment engaged in building and other construction Work:-

i. Workmen compensation act 1923.
ii. Payment of Gratuity Act 1972.
iii. Employees P.F. and Miscellaneous Provision Act 1952.
iv. Maternity Benefits Act 1951.
v. Contract Labour (Regulation & Abolition) Act 1970.
vi. Minimum Wages Act 1948.
vii. Payment of Wages Act 1936.
viii. Equal remuneration Act 1979.
ix. Payment of bonus Act 1965.
x. Industrial disputes Act 1947.
xi. Industrial employment standing orders Act 1946.
xii. Trade Union Act 1926.
xiii. Child Labour (Prohibition & Regulation) Act 1986.

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xiv. Inter State Migrant workmen's (Regulation of employment & Conditions of service)Act 1979.

xv. The Building and other Construction workers (Regulation of employment and Condition of service) Act 1996 and the Census Act of 1996.

xvi. Factories Act 1948. & Compliance with Labour Regulation Laws of J&K State.

22. PAYMENTS SCHEDULE.

70% of Payment shall be released after delivery of product at site and 30% payment shall be released after successful commissioning of System.

Note:

a) *The cost of works already executed shall be deducted from the bill*.

b) Any item of work not included BoQ but found necessary shall be paid as per OEM rate list or LMR whichever applicable and the decision of Engineer I/C regarding rates shall be binding upon the Bidder.

23. DRAWINGS AND PHOTOGRAPHS OF THE WORKS

The contractor shall do photograph /video photograph of the site firstly before the start of the work, secondly mid-way in the execution of different stages of work and lastly after the completion of the work. No separate payment will be made to the contractor for this and shall submit a Hard copy and soft copy of the same to the Engineer-in-charge for record and reference.

The contractor shall not disclose details of drawings furnished to him and works on which he is engaged without the prior approval of the Engineer-in-Charge in writing. No photograph of the works or any part thereof or plant employed therein, except those permitted shall be taken or permitted by the contractor to be taken by any of his employees or any employees of his sub-contractors without the prior approval of the Engineer-in-Charge in writing. No Photographs /Video photography shall be published or otherwise circulated without the approval of the Engineer-in-Charge in writing.

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SPECIFICATIONS

UPS SYSTEM

1.0 ADDITIONAL CONDITIONS

1. The works will be executed to comply with the CPWD Technical Specifications for Electrical works Part-I Internal (2013), Part II External (1994), Part-IV Substation (2013), Part-VII DG Set (2013) and with up to date amendments and to confirm to the Indian Electricity Act & rules, BIS& Direction of Engineer-in-charge/PMC.

2. The items of work shall be executed as per detailed technical specifications and scheme. In case of contradiction between schedule of work with its Additional Specification and the General Specification, the former shall prevail.

3. The work will be executed as per general arrangement drawing and detailed fabrication drawings duly approved by the Engineer-in-charge. The various items of equipment will be ordered only after the drawings are approved and quantities in detail of various items are ascertained as per actual requirements. Therefore the actual quantities / measurement may vary from the stipulated quantities, which are only estimate.

4. The contractor/agency will engage suitable qualified/experienced/ licensed engineering supervisor for the work and suitable skilled personnel with required license for doing the erection work. Required special tools to be operated in the execution of the job.

5. The work will be performed as per the day to day instruction and approval of the engineer-in-charge. All materials/ equipment will be used after taking approval of the Engineer-in-charge.

6. Equipment will be duly inspected in the manufacturer's works / premises before dispatch to the site, as per instructions of Engineer-in charge.

7. The rates are to be inclusive of all taxes, levies, insurance, freight, octroi etc. except service tax which will be reimbursed by the department, in full, on presentation of receipt of original deposit slip, against the work. Nothing extra will be paid.

8. The work will be executed as per the programme of completion of the project. The delivery & erection schedule of various materials/ equipment will be as per approval of Engineer-in-charge.

9. This contract holds the contractor responsible for the entire job as per relevant specifications. If any item is left out within the schedule of work but if it is considered essential for the completion of the job, the contractor has to carry out the items within the tendered amount & nothing extra shall be paid.

10. The contractor shall have to make arrangements, at his own risk and cost, for transportation of materials from the point of issue of stores to site of work, if any.

11. The contractor shall ensure that the staff employed by him for execution of the electrical work, possess the valid electrical license issued by competent authority. Consequences arising due to the default of the contractor in not complying with the above condition shall be the entire responsibility of the contractor.

12. All concealed work and earthing shall be done in the presence of the Engineer-in-charge or his authorized representative.

13. The schematic diagram/dimensional drawings of the various electrical cubical panels shall be got approved from the Engineer-in-charge before fabrication and shall comply with specifications and Indian Electricity Rules. The panels shall conform to IS: 8623/1993. All panels shall be powder coated inside out, in shade approved by the Engineer-in-charge.

14. All panels/DB shall be suitable for 45^{o}C ambient temperature.

15. The MCB shall be of the same make as that of MCB DB's. Contractor shall obtain approval of the Engineer-in-charge before procurement of MCB DB's. All DB's shall be double door type confirming to minimum IP-43 degree of protection.

16. Miniature Circuit Breaker shall comply with IS –8828-1996 / IEC 898.Miniature Circuit Breakers shall be quick make and break type for 230 / 415 V A.C., 50Hz application with magnetic thermal release for over current and short circuit protection. The breaking capacity shall not be less than 10KA at 415V A.C. The MCB shall be DIN mounted. The MCB shall be current limiting type (Class – 3).

17. MCB shall be classified (B, C, D ref. IS standard) as per their tripping characteristics curves defined by the manufacturer The MCB shall have the minimum power loss (watts) per pole defined as per the IS / IEC and the manufacturer shall publish the values.

18. The MCB housing shall be heat resistant and having high impact strength. The terminal shall be protected against finger contact to IP20 degree of protection.

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19. All model of modular accessories required for the work shall be got approved from the Engineer-in-charge among the approved makes. The base plate shall be preferably in sheet steel or otherwise in unbreakable polycarbonate. The cover plates shall be screw less type in shade approved by the Engineer-in-charge. The GI box shall be of the same make as the modular accessories.

20. Contractor shall have to check the site order Book for any instructions of Engineer-in-charge or his authorized representative and sign the site order book. He shall be bound to ensure compliance with the instructions recorded there in.

21. All the MCCB's shall have microprocessor based trip unit for reliable protection and accurate measurement. The rated Service breaking capacity (kArms) shall be 100% of Ultimate breaking capacity (kArms). All MCCB's shall be current limiting type with features as per relevant IS codes and specification. All MCCB's shall be rated for minimum operating voltage of 415 V and minimum insulation voltage of 750 V. There has to be total discrimination between the incoming and outgoing MCCB's and MCB's, as required, at the MDB's and DB's level.

22. MCCB's shall be used with rotary handle and terminal spreaders and all terminals shall be shrouded to avoid direct contact.

23. Mechanical Castle key interlock shall be provided among the incomer MCCB's, wherever, as applicable, two different incomer sources are provided in the panel as per the directions of the Engineer in charge. The same is deemed included in the scope of work.

24. General arrangement drawing of the switchboard shall be got approved by the Engineer-in-Charge before commencement of manufacturing.

25. Conduit layout as per switching arrangement shall be prepared by contractor and got approved from the Engineer-in-Charge before slab casting. At all expansion joints in the building suitable arrangement shall be ensured during conduiting.

26. Ratings, sizes and quantities shall be checked and considered for satisfactory operation of electrical system complete in all respect. Ratings, sizes and quantities mentioned in Bill of Quantities and drawings are indicative and minimum.

27. Conduits, Switchboards, Sockets to be provided on walls shall be recessed type unless specifically approved by Engineer-In-Charge.

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28. Conduits on ceiling in existing system may be provided on surface and in new construction shall be recessed type.

29. Breaker shall have LCD display to show the metering and protection parameters.

30. HT Panels, Transformers, Bus ducts, Rising Mains with accessories, MV panels and APFC panels will be inspected in the respective manufacturer works before dispatch and routine test as applicable as per BIS standards will be provided for each equipment. During the testing the Engineer-in-charge will ensure compliance with the agreement conditions and approved drawings.

31. For DG sets of capacity more than 200 KVA, testing shall necessarily be carried out at factory/manufacturer premises in presence of representative of the Department.

For testing following procedure will be followed:

All major items/equipment i.e. engine & alternator in assembled condition, associated electrical control panels etc. shall be offered for inspection and testing at factory / manufacturers works. The successful tenderer shall give a notice of minimum two weeks for carrying out such tests. The Engineer-in-charge/or his authorized representative shall witness such inspection & testing at mutually agreed date.

The department also reserves the right to inspect the fabrication job at factory and the successful tenderer has to make arrangements for the same.

DG set will be tested on load of unity power factor for the rated KW rating. During testing, each of the DG sets covered under scope of work, shall be operated for a period of 12 hours on the rated KW at DG set's KW rating including one hour on 10% overload after continuous run of the 12 hours. During testing all controls / operations safeties will be checked and proper record will be maintained. Any defect/abnormality noticed during testing shall be rectified. The testing will be declared successful only when no abnormality / failure are noticed during the testing. The DG set will be cleared for dispatch to site only when the testing is declared successful by authorised representative/Engineer-in-Charge.

32. The firm shall deploy only licensed personnel as required under IE Rules, for execution of the electrical works. The firm shall be liable to submit the list of such personnel along with the attested copy of the licenses at the time of execution.

It is important that every equipment is tested fully before dispatch.

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33. All materials for the work shall be supplied from approved list of manufacturer and any item, not covered in approved list, shall be supplied after getting approval from Engineer- in-charge or his authorized representative.

34. Any materials brought for work which is not matching with specification will be rejected and the rejected materials shall be removed from site on the same day.

35. All fees payable to concerned authorities and other local bodies if any shall be paid by the contractors and the same shall be reimbursed by department on production of documentary evidence.

36. Contractor shall have a valid “A” class contract license with HT installation issued by appropriate authorities.

37. Test certificates both type test and routine tests wherever required shall be furnished along with supply for all Electrical/Mechanical items.

38. Inspection / acceptance, in no way shall absolve the contractor from supplying material as per standards / codes and warranty or other obligations under the contract.

39. The agency shall have the following testing/measuring equipment in addition to standard tools.

    1. Insulation Tester, 500V, 1000V, 5000V
    2. Earth tester with kit, 0, 10,100 ohms with selector switch
    3. Tong tester with (1) Ammeter 0-800 A with different ranges and selector switch.
    4. Voltmeter o/300V/600V with different ranges and selector switches.
    5. Phase sequence tester
    6. Multimeter / Avometer: - Digital to measure 0/10/100 mV, mA, ohm, Kilo ohm resistance.
    7. Frequency meter 45 to 55 Hz.
    8. Portable PF meter (0.5 lag-unity-0.5 lead).
    9. Lux meter to measure upto 2000 lux with selector switches.
    10. Micrometer(digital)
    11. Vernier Caliper(digital)

40. All electrical works shall be tested by the contractor in the presence and to the entire satisfaction or Engineer-in-Charge and IE Rules.

41. Documents to be submitted along with the tender:

    1. All technical literature / pamphlets for various equipment offered.

2. Type test certificates as per IS for package substation and HT/LT switchgears, transformer, Dg set, etc.

42. Data to be furnished by the bidder after award of work.

1. The contractor shall submit following detail shop/fabrication/layout drawings, datasheets and calculations.

a. External Electrical Works

i. External lighting layout
ii. Circuiting and phase balancing of external illumination scheme
iii. Power feeding arrangement
iv. Lux level calculation based on final lighting fitting
v. Datasheet and catalogue of light fittings
vi. Datasheet, catalogue structural calculation and GA /foundation drawings

b. Substation Works

Datasheet, catalogue, GA, Foundation, Equipment Layout, Schematics, schedules and calculations, cable schedule, equipment sizing, load calculation earthing calculation, capacitor sizing, relay coordination, AH calculation, etc. as applicable for following.

i. HT Panel
ii. Transformer
iii. LT Panel
iv. ATS Panel
v. Capacitor panel
vi. Bus duct
vii. Wires & Cables
viii. Joints and termination
ix. Pipes, Manhole
x. DG Set
xi. DG Synchronization
xii. Cable Trays
xiii. Protection Scheme and relay coordination
xiv. Cable schedule & voltage drop calculation
xv. Load calculation
xvi. Equipment sizing calculation
xvii. Capacitor sizing
xviii. Earthing calculation

xix. AH calculation

xx. QAP

c. Drawings

i. Cable laying arrangement

ii. Equipment layout

iii. Earthing layout with soil resistivity test report

iv. Lighting layout

v. Duct layout

vi. Trench Layout

Note: For complete execution and satisfactory performance of installation, drawings / documents for all items whether or not mentioned above shall be submitted for approval.

1. Six Set of copies of installation, operation and maintenance manuals, descriptive bulletins etc., shall be furnished prior to / at the time of despatch of all materials. Manuals shall include the following aspects:
   a. Outline dimension drawing showing relevant cross sectional views, earthing details and constructional features including foundation drawing.
   b. Rated voltage, current, duty cycle and all other technical information which may be necessary for correct operation of the switchgear.
   c. Storage details for prolonged duration.
   d. Unpacking.
   e. Handling at site.
   f. Erection
   g. Pre-commissioning test.
   h. Operating procedure.
   i. Maintenance procedures.
   j. Precaution to be taken during operation and maintenance work.
   k. List of spares for two years trouble free operation.

2. Test Certificates

   a. Type/Routine test certificate for all types of equipment, cables, etc. included in the order.
   b. Specified number of copies of the approved test certificates shall be furnished to the Engineer-in-Charge before despatch of all materials / equipment and cables, etc.

3. On completion of work the contractor shall submit six sets of all drawings, manuals and test certificates, etc. for all equipment / materials ordered and as specified by the Engineer-in-Charge.

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2.0 UPS SYSTEM

2.1. General

Scope

These specifications describe requirements for an Uninterruptible Power System (UPS) consisting of single module UPS units connected in parallel, redundant mode/stand alone with manual bypass switch. The UPS shall automatically maintain AC power within specified tolerances to the critical load, without interruption during failure or deterioration of the mains power supply. Each UPS shall be complete with 12-plus operation IGBT/SCR based PWM design inverter and IGBT/SCR based Charger, built-in static bypass switches and built in communication ports and LCD display based keypads. Each unit shall be designed for three phase and neutral input and output. The UPS shall be expandable by paralleling additional modules of the same rating, to provide for module redundancy or load growth requirements. It shall include all equipment's to properly interface the AC power sources to the intended load and be designed for unattended operation.

2.2. Construction Features

S. No.	Description	Parameters Required
1	**CAPACITY**	As per BOQ (in continuous mode)
2	**Environmental Characteristics**	
2.1	Working temperature	0º to 40º C (Continuous)
2.2	Storage temperature	-10º to 50º C
2.3	Humidity	95% non-condensing
2.4	Standards	EN50091-2/IEC 62040-2
3	**General Characteristics**	
3.1	Overall Efficiency of the UPS under following conditions-	
a)	Lowest Input Volts to Highest Input Volts	> 88% under specified conditions
b)	Lowest Input Frequency to Highest Input Volts	
c)	AC/AC total efficiency @ 75% load	

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S. No.	Description	Parameters Required
d)	AC / AC total efficiency @ 100% load	
3.2	Noise level @ 1 Mt. distance	<70dB
3.3	Conversion technology	True -Online & Double Conversion
3.4	Configuration	Compatible to Single, Parallel, Dual Bus Architecture
3.5	No. of systems that can be paralleled	4 or more
4	**Input Electrical Characteristics**	
4.1	Type of rectifier	SCR / IGBT Based-Power Factor Corrected
4.2	Input Voltage(3 phase)	353-460 V
4.3	Input Frequency	47 to 53 Hz
4.4	Input Power factor @ 50 to 100% load	0.90 or better
4.6	Input Current harmonic distortion (THD)	≤ 5%
5	Output Electrical Characteristics	
5.1	Type of Inverter	IGBT based PWM design
5.2	Output Voltage (3 phase)	380V / 400V / 415V (user selectable)
5.3	Output waveform	Sinusoidal
5.4	Static output voltage variation under following conditions-	±1%
a)	No Load to Full Load / Full Load to No Load	
b)	0.5 lag to unity p.f	
c)	Minimum to Maximum DC input volts	
d)	Input Frequency from 46 to 54 Hz	
e)	Full Input Voltage range	
5.5	Output Voltage variation	
a)	at balance load	±1%
b)	at 100 % load step (Dynamic Regulation)	±1%

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S. No.	Description	Parameters Required
5.6	Voltage adjustment - Manual	Required
5.7	Output frequency	50Hz
5.8	frequency regulation	± 0.2 %
5.9	THD at Output	≤ 2 % for linear load & ≤ 5 % for non-linear load
5.10.	Phase displacement- (a) in balance load	120º , ±1%
	(b) in 100% unbalanced load	120º , ±2%
5.11	Output power factor	0.8 lag
5.12	Overload capacity	
	at 110%	For 60 minutes
	at 125%	For 10 minutes
	at 150%	For 1 minute
5.13	Crest Factor	3:1
5.14	Voltage Transient Recovery Time	≤ 20 ms
6	Static bypass arrangement	To be provided
7	Battery details	
7.1	Type of batteries	Nickel Cadmium
7.2	Back-up	30 minutes having 2no.s Battery banks of 15 minutes each with Battery Breaker management
7.3	AH of the battery	As per BOQ
7.4	Life of battery	> 3 years
7.5	Battery temperature sensor	by Vendor
7.6	No. of Batteries provided	by Vendor
7.7	Battery Monitoring in UPS	by Vendor
7.8	Battery Mounting	by Vendor
7.9	Dimensions of battery cabinet(LXBXH)	by Vendor
7.10.	Weight of battery cabinet	by Vendor
7.11	Base Frames for UPS & Battery Racks	by Vendor
8	**Communication**	

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S. No.	Description	Parameters Required
8.1	BMS compatibility	Required
8.2	SNMP	Required
8.3	Past Events & Trend Analysis	Required
8.4	Life Cycle Monitoring of Fans , DC / AC Capacitors ,Batteries	Required
8.5	The equipment should be able to provide tele-monitoring by the remote server of the manufacturer through web-enabled adapter card with smart software.	Required
9	**Charger**	
9.1	Type	SMPS
9.2	Nominal Voltage Regulation	±1%
9.3	Ripple (without batteries)	< 1 %
9.4	Charging Method	Constant Voltage Constant Current
10	**MISCELLANEOUS**	
	Furnish the following details along with tender:	Refer Annexure 'A'
11	**General:**	
	Indicate the make, capacity & other technical characteristics of the devices used.	
	External / Inbuilt Galvanic Isolation (Neutral Isolation) through double-wound transformer at output.	

2.3. **Mode of Operation**

The UPS shall be designed to operate as Double conversion True **ON** LINE VFI as per IEC 62040-3:-

a) **Normal** – The critical AC load is continuously supplied by the UPS Inverter. The rectifier / Charger derives power from AC Input source and supplies DC power to the Inverter while simultaneously charging power reserve battery.

b) **Emergency** – Upon failure of AC Input power, the critical AC load is supplied

by the inverter which without any switching obtains power from the battery. There shall be no interruption in power to the critical load upon failure or restoration of the AC input source.

c) **Recharge** – Upon restoration of AC input power during the emergency mode of operation, the rectifier/charger shall automatically restart, walk-in and gradually assume the inverter and battery recharge loads.

d) **Bypass** – UPS must have for static bypass switch in addition to manually operated maintenance bypass switch. Manual switch should be incorporated into UPS cabinet that will connect the load to AC power source bypassing the rectifier / charger, inverter and static transfer switch.

e) **Off-Battery**- If the battery system only is taken out of service for maintenance, it is disconnected from the rectifier/charger and inverters by means of (an) external disconnect breaker(s). The UPS shall continue to function and meet all of the specified steady-state performance criteria, except for the power outage back-up time capability.

f) **SNMP (Simple Network Management Protocol**) - Web enabled adopter card with smart software for server shutdown shall be provided by UPS vendor.

g) **Dual Bus system:** The two UPS systems should work in Load Bus Synchronization mode. Both the UPS shall share 50% of the total load. The malfunction of one of the modules shall cause that module to be disconnected automatically from the load and the healthy module shall continue to carry the total load. Upon repair of the module, it shall be reconnected to the critical load

to resume dual supply operation. Any module shall also be capable of being taken off the load manually for maintenance without disturbing the load bus.

2.4. Maintenance Free Battery Requirements

Battery banks connected to different KVA UPS shall be designed to provide 30 minutes back-up at full load. The UPS module should be automatically disconnected when the battery reaches to the minimum discharge voltage level or when signaled by other control functions.

During normal operation batteries shall be continuously float charged & the charging current is electronically controlled for the limiting purpose.

2.5. Electrostatic Discharge

The UPS shall be able to withstand an electrostatic discharge compliant to IEC 60801-2 level 4 (15kVA through air, 8kV contact) without damage to equipment or the connected load.

2.6. UPS Delivery Submittals

The specified UPS shall be supplied with one (1) user manual to include details of:

a) Functional description of the equipment with block diagrams.
b) Detailed installation drawings, including all terminal locations for power and control connections for both the UPS and battery system.
c) Safety precautions.
d) Step-by-step operating procedures
e) General maintenance guidelines
f) The UPS shall be supplied with a record of pre-shipment final factory test report.

2.7. Warranty

2.7.1. UPS Warranty

The UPS manufacturer shall warrant the unit against defects in workmanship and materials for 24 months after initial start-up.

2.7.2. Battery Warranty

The battery manufacturer's standard warranty shall be passed through to the end user.

2.8. PRODUCT

2.8.1. Fabrication

2.8.1.1. Materials

All materials of the UPS shall be new and of present state of the art, of current manufacturer, high grade and free from all defects and shall not have been in prior service except as required during factory testing.

2.8.1.2. Construction and Mounting

The UPS unit comprised of Input Isolator, Rectifier / Charger, Inverter, Static Transfer switch, Maintenance Bypass switch and static bypass input switch shall be housed in a free standing steel enclosure with key lockable doors. Front / rear access shall be required for expedient servicing, adjustments and installation. The enclosure will be built to comply with IP 20. The UPS shall be constructed of replaceable sub-assemblies. Printed circuit assemblies shall be plug-in type.

2.8.1.3. **Cooling**

Cooling of the UPS shall be by forced air ventilation. Low velocity fan shall be used to minimize audible noise output. Fan power shall be provided by the UPS output. Temperature shall be monitored by thermal censors.

2.8.1.4. **Service Area requirement**

All serviceable subassemblies shall be modular and capable of being replaced from front of the UPS. The UPS module preferably shall require not more than 1.5 meter of front service access room and shall not require side and back access for service.

2.8.1.5. **Cable Entry**

Standard cable entry for the UPS module shall be from the bottom / top as required through detachable gland plate.

2.8.1.6. **Service Area requirement**

All serviceable subassemblies shall be modular and capable of being replaced from front of the UPS. The UPS module preferably shall require not more than 1.5 meter of front service access room and shall not require side access for service.

2.8.2. **Components**

2.8.2.1. **Transient Voltage Surge Suppressor (TVSS)**

Critical and expensive electronic equipment should be protected from transient over-voltages by TVSS. The selection of surge protective devices typically depends on the

location of the device. TVSS device for ITE equipment shall be as per following specifications :-

- All Modes Protection : L-L, L-N, L-G, N-G
- Surge Current Capacity : 25Ka / 50kA /100 kA / 160 kA / 250 kA / 400 kA
- Connection Type : Parallel
- Protection Level : < 0.8 kV
- MCOV : Min. 320 Volts
- Response Time : < 0.5 nanoseconds
- Status Indication : LED, Dry contacts
- EMI/RFI Attenuation : 40 dB typical
- Certification : UL 1449

2.8.2.2. **TVSS Detailed Specifications**

- The main incoming switchboard (MSB) and distribution boards (DB) shall be equipped with TVSS as defined in the IEEE standard 1100(1999).
- The TVSS shall be constructed of Metal Oxide Varistor (MOV) technology and internal surge capacitors.
- The surge protective devices shall be sized per IEEE Std C62.41-1991 and IEEE Std C62.45-1992.
- Surge protective devices used for three-phase, four-wire circuits shall be connected in all combinations of line-to-line, line-to-neutral, line-to-ground, and neutral- to -ground (L-L, L-N, L-G, N-G)
- The TVSS shall have a UL listing and labelled 1449-2 suppressed voltage rating of 800V peak.
- The unit shall have a maximum continuous operating voltage (MCOV) rating of minimum 320VRMS.
- The Response time of TVSS shall be ≤ 0.5 nanoseconds.
- The TVSS shall provide up to 40dB for RFI & EMI noise attenuation.
- TVSS monitoring shall consist of indicator lamps and form C dry contacts.
- Monitoring of all modes, including N-E is required.

2.8.3. **Rectifier/ Charger**

a) **General** – The term rectifier / charger shall denote the solid state equipment and Controls necessary to convert incoming AC power to regulator DC power for input to the inverter and for battery charging. The rectifier shall be three-phase Controlled, Thyristor/IGBT bridge type with constant voltage current limiting control circuitry. The charger shall be Thyristor/IGBT based 12 Pulse rectifiers cum charger. The rectifier should be of 125% capacity of Inverter to cater the charging even when there is full load.

b) **Input current Walk-in** – The rectifier/charger shall contain time walk-in circuit that causes the unit to gradually assume the load over a 10 to 30 sec progressively time interval after input voltage is applied.

c) **Fuse Failure Protection** – Power semiconductors in rectifier/charger shall be fused with fast acting fuses so that loss of any power semiconductor shall not cause cascading failures.

d) **DC Filter** - The rectifier/ charger shall have an output filter to minimize ripple voltage in to the battery. Under no conditions shall ripple voltage into the battery exceed 1% RMS the filter shall be adequate to ensure that the DC output at the rectifier charger will meet the Input requirements of the Inverter. The Inverter shall be able to operate from the rectifier charger will meet the input requirements of the Inverter. The Inverter shall be able to operate from the rectifier charger with the Battery disconnected.

e) **Battery Recharge** – In addition to supply power for the Inverter load, the rectifier/charger shall be capable of producing battery charging current to recharge the batteries. After the battery is recharged, the rectifier/charger shall maintain the battery at full charge until the next emergency operation. It should be Automatic Float-cum-Boost Charger having I/U Characteristics conforming to DIN 41772, automatic Float-to-Boost Charge switching with current measuring criterion plus control of charging time

f) The UPS module shall have the battery circuit breaker (MCCB having thermal, magnetic and U/V trip facility) mounted near to the batteries. When this breaker is opened, no battery voltage should be present in the UPS enclosure. The UPS module should be automatically disconnected when the battery reaches to the minimum discharge voltage level or when signaled by other control functions. Remote tripping of battery circuit breaker facility shall be incorporated. No contactor type arrangement in the battery path should be used.

2.8.4. **Inverter**

a) The term inverter shall denote the solid-state equipment and controls to convert DC power from the rectifier/charger or battery to regulated AC power for supporting the critical load. The Inverter shall be IGBT based pulse width modulated (PWM) design capable of provide the specified AC output. Inbuilt Double wound K rated Isolation Transformer should be provided at the output of the Inverter to have Galvanic Isolation.

b) Overload Capacity: Inverter shall be capable of supplying current and voltage for overloads exceeding 100% and upto 150% of full load current for 1 minute. A status indicator and audible alarm shall indicate overload operation. The UPS shall transfer the load to bypass when overload capacity is exceeded 125% for 10 mints. &150% for 60 seconds without going to bypass sources.

c) Fault clearing & Current limit: Without bypass supply available, the inverter shall be capable of supplying an overload current 150 % of its full load rating for 60 sec.

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2.8.5. Static Transfer Switch

2.8.5.1. General

A static transfer switches and bypass circuit shall be provided as an integral part of the UPS. The static switch shall be naturally commutated high-speed static (SCR type) device rated to conduct full load current continuously and shall have naturally commutated high-speed static anti-parallel SCR's in the output of the inverter circuit as well as in the Static Bypass Line to enable the critical load to be connected to the inverter output or bypass power source. The static transfer switch control logic shall contain and automatic transfer control circuit that senses the status of the inverter logic signals, and operating and alarm conditions. This control circuit shall provide an uninterrupted transfer of the load to an alternate bypass source, without exceeding the transient limits specified herein, when an overload or malfunction occurs within the UPS, or for bypassing the UPS for maintenance.

The Static bypass switch must automatically assume the critical load to mains supply without interruption after logic senses one of the following conditions:-

- Inverter overload beyond
- Battery run time expired and bypass available
- Inverter failure
- Battery circuit breaker open
- Fatal error in control system

The Overload withstanding capability of Static Bypass Path should be 1430% for 20 millisec & 1000% for 5 cycles (100millisecs.)

2.8.5.2. Uninterrupted Transfer

The transfer control logic shall automatically turn on the static transfer switch, transferring the critical AC load to the bypass source, after the transfer logic senses any of the following conditions:

- Inverter overload capacity exceeded
- Critical AC load over voltage or under-voltage
- UPS fault condition.

The transfer control logic shall inhibit and automatic transfer of the critical load to the bypass source if any of the following conditions are present:

- Inverter / bypass voltage difference exceeding pre-set limits
- Bypass frequency out of limits
- Bypass out-of-synchronization range with inverter output.

2.8.5.3. **Uninterrupted Retransfer**

Retransfer of the critical AC load from the bypass source to the invert output shall be automatically initiated unless inhibited by manual control. The transfer control logic shall inhibit an automatic retransfer of the critical load to the inverter if one of the following conditions exists:

- Bypass out of synchronization range with inverter output
- Inverter / bypass voltage difference exceeding pre-set limits
- Overload condition exists in excess of inverter full load rating
- UPS fault condition present

2.8.6. **Maintenance Bypass Isolator**

2.8.6.1. **General**

A manually operated maintenance bypass isolator shall be incorporated into the UPS cabinet to directly connect the critical load to the input AC power source, bypassing the rectifier / charger, inverter, and static transfer switch.

2.8.6.2. **Maintenance Capability**

With the critical load powered from the maintenance bypass circuit, it shall be possible to check out the operation of the rectifier / charger, invert, battery, and static transfer switch.

2.8.6.3. **Display and Controls**

Monitoring & Controlling - The UPS shall be provided with a microprocessor based unit status display & controls section designed for convenient and reliable user operation. A system power flow diagram, a percentage load and battery time remaining display shall be provided as part the monitoring and controls sections which depicts a single–line diagram of the UPS illuminated visual indicators shall

be of long life LED type. All of the operator controls and monitors shall be located on the front of the UPS Cabinet.

2.8.6.4. **Metering**

The following parameters shall be displayed:

Display Parameter

- DC Voltage
- Battery voltage
- Battery charge & discharge current
- Input voltage and frequency
- Output AC voltage line-to-line and line to neutral and % load used of nominal
- Output AC current for each phase and neutral
- Output frequency
- Active Power (KW) Apparent Power (KVA)
- Temperature - Ambient, battery, inverter and transformer

2.8.6.5. **Warning and Alarm Messages**

- Normal Operation, Input breaker open
- Output breaker open
- Battery breaker open
- Bypass absent, Bypass over limits
- Bypass under limits, Bypass freq. over limit
- Bypass inhibit
- Load on bypass,
- Rectifier off or failed
- Inverter off or failed
- UPS unsynchronized
- D.C Volts over voltage
- D.C under voltage and end of discharge pre-alarm
- DC Bus over volts Battery Low
- Emergency stop
- UPS Overload

2.8.6.6. **Controls**

Four pushbuttons shall be located on the operator control panel.

- Enter

- Escape
- Up
- Down

The push buttons shall permit the operator either to select options from a menu for display on the LCD winder or to change the value of some parameters. One push-button-alarm silence switch.

2.8.6.7. **Power Status Diagram**

A mimic panel shall be provided to depict a single line diagram of the UPS.

Indicating lights shall be integrated within the single line diagram to illustrate the status of the UPS. The three LEDs shall indicate the following status.

- Bypass voltage OK
- Load on bypass
- Load on inverter

Power status diagram shall be an LED bar graph indicating % load with amber overload indication. Also an LED bar graph indicating % battery time remaining shall be included.

2.8.6.8. **Communication interface board**

A communication interface board shall provide the following communication ports, and it shall be possible to use either of the ports

a) RS232 serial port
b) RJ45 port
c) COM-PORT with the following normally open or normally closed potential free contacts

- UPS ON
- Static bypass operation
- Battery operation
- Battery low
- Trip Status
- Overload status

Remote UPS Monitoring kits: Remote UPS Monitoring shall be possible via either RS-232 or contact closure of the UPS and an existing computer system. The UPS manufacturers must have available interface kits to support remote monitoring for the following system

- Microsoft windows 3.1, 3.11
- Microsoft windows 98
- Microsoft windows NT
- OS /2
- Netware 3.12, 4.1, 4.11
- Apple
- DECVMS
- DG-UX
- Silicon graphics
- DEC OSF/1
- SCO UNIX
- SCO-XENIX
- SVR 4
- Interface
- Unix Ware
- Sun Solaris
- SUN OS
- IBM AIX
- HP-UX

2.8.6.9. **SNMP Adapter**

A web enabled SNMP adapter shall be provided to allow one or more network management system (NMS) to monitor and manage the UPS in TCP/IP network environment. The Management information base (MIB) must be provided in DOS & UNIX tar formats. The SNMP interface adapter shall be connected to the UPS via RJ 45 Port of Switch / Hub.

Provision shall also be made as per the requirements of IBMS as under:

Provision to be made by UPS contractor for measurement/ monitoring the following data through IBMS and extending the wiring from the respective panel up to the terminal port mentioned in schedule of work/quantities.

S.No.	Description/ Range	Function	By IBMS Contractor	By UPS Firm

1	On / off	UPS ON / OFF status monitoring	INTEGRATE R UNIT	Microprocessor controlled UPS with following provision (1) UPS micro-processor panel connected to a common network (2) UPS micro-processor panels are capable to release all communication from this network to the integrator through standard communication cards as per specifications.
2	Units	No. of units on load		
3	VDC	UPS Battery voltage monitoring		
4		Trip status monitoring		
5		Load status monitoring in terms of current & voltage		

2.9. **Nickel Cadmium Battery**

2.9.1. **Codes And Standards**

All standards, specifications and codes of practice, referred to herein after shall be the latest edition including all applicable official amendments and revisions as on date of opening of bid.

In case of conflict between this specification and those (IS codes, standards etc.) referred to herein, the former shall prevail. All works shall be carried out as per the following standards and codes:

IS: 10918 Specification for vented type Nickel-Cadmium Batteries.

IS 1069 Quality tolerance for water for storage batteries

Indian Electricity Rules

Indian Electricity Acts.

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Equipment complying with other internationally accepted standards such as IEC, BS, and VDC etc. will also be considered if they ensure performance and construction features equivalent or superior to standards listed above. In such a case, the Bidder shall clearly indicate the standard(s) adopted, further a copy in English of the latest revision of the standards along with copies of all official amendments and revisions in force as on date of opening of bid and shall clearly bring out the salient features for comparison.

2.9.2. General Technical Requirements

2.9.2.1. Equipment

a) Batteries shall be stationary Nickel-Cadmium Pocket plate type conforming to IS: 10918.
b) Batteries shall be suitable for a long life under continuous float operations and occasional discharges.
c) The batteries shall be boost charged at about 1.54 to 1.7 volts per cell maximum and float charged at about 1.40V to 1.42 V per cell.

2.9.2.2. Construction Features

2.9.2.2.1. Containers

Containers shall be made of polypropylene plastic material. Containers shall be robust, heat resistance, leak proof, non-absorbent, and alkali resistant, non-bulging type and free from flaws such as wrinkles, cracks, blisters, pin holes etc. Electrolyte level lines shall be marked on container in case of transparent conditioners.

2.9.2.2.2. Vent Plugs

Vent plugs shall be provided in each cell. They shall be anti-splash type, having more than one exit hole and shall allow the gases to escape freely but shall be such that the water loss due to evaporation is kept to minimum. In addition the vent shall be flip open type shall be easily removed for topping up the cells and of such dimensions that a syringe type hydrometer can be inserted into vent to take electrolyte samples.

2.9.2.2.3. Plates

The plates shall be designed for maximum durability during all service conditions. The construction of plates shall conform to latest revisions of IS: 10918.

The separators shall maintain the electrical insulation between the plates and shall allow the electrolyte to flow freely. Separators should be suitable for continuous immersion in the electrolyte without distortion.

The positive and negative posts shall be clearly marked.

2.9.2.2.4. **Electrolyte**

The electrolyte shall be prepared from battery grade potassium hydroxide conforming to BS: 1069.

The cells can be transported either in charged condition or in dry condition.

Necessary electrolyte for make-up shall be supplied separately.

2.9.2.2.5. **Connectors & Fasteners**

Nickel coated copper connectors shall be used for connecting up adjacent cells and rows. Bolts, nuts and washers shall be effectively Nickel coated to prevent corrosion. All connectors and lugs shall be capable of continuously carrying the 15 minute discharge current of the respective batteries.

2.9.2.2.6. **Battery Racks**

Mild steel racks for all new batteries shall be provided. They shall be free standing type. The batteries racks and support for cable termination shall be coated with three (3) coats of anti-alkali paint of approved shade. Numbering tags, resistant to alkali for each cell shall be attached on to the racks. The bottom tier of stand shall not less than 150 mm above the floor.

2.9.2.2.7. **Manufacturers' Identification System**

The following information shall be indelibly marked on outside of each cell:

Manufacturer's name and trade mark

Country & year of manufacturer

Manufacturer's type designation

AH capacity at 5 hours discharge rate

Serial Number

2.9.3. **Tests**

All routine, type and acceptance test shall be carried out as per latest issue of IS: 10918.

Test shall have to be carried out in the presence of Owner's representative, if desired by the Owner. The contractor shall give at least three (3) weeks advance notice of the date when the tests are to be carried out. Six (6) copies of type tests certificates shall be furnished to the owner for approval before the dispatch of the equipment from works.

2.9.3.1. **Routine Tests**

All type test listed below shall be carried out on cells containers, hardware of each type being supplied:

Physical Examination

Dimension, Mass & layout

Marking

Polarity and absence of short circuit.

2.9.3.2. **Acceptance Tests**

All acceptance tests as listed below shall be carried out on sample cells selected at random by the owner before dispatch and at site after completion for installation.

Physical Examination

Dimension, Mass & layout

Marking

Polarity and absence of short circuit.

Air pressure test

Ampere-hour capacity

Insulation resistance

The contractor shall arrange for all necessary equipment, including the variable resistor, tools, tackles and instruments. If a battery fails to meet the guaranteed requirements the Owner shall have the option of asking the contractor to replace the same.

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3.0 LIST OF APPROVED MAKES

S. No.	Item	Name of Manufactures
1.	Voltmeter and Ammeter	AE / MECO / UNIVERSAL / RISHAB / ENERSOL
2.	Selector Switch, Push Buttons, Emergency Switches	KAYCEE / L & T / GE / BCH
3.	Current Transformer	AE / KAPPA / PRECISE / ADVANCE / ANANT POWER
4.	HRC Fuses	L & T / GE / SIEMENS / ABB
5.	MCB	L & T / SCHNEIDER - (MULTI9) / SIEMENS - (BETAGARD) / ABB (S - 270 RANGE) / LEGRAND (LEXIC)
6.	Terminal Blocks / Cage Clamp / Connectors	WAGO & CONTROLS / PHOENIX CONTACTS
7.	LT Panels and Feeder Pillars	ADVANCE PANELS & SWITCHGEAR / SPC ELECTROTECH LTD. / SIEMENS / SCHNEIDER
8.	Transient Voltage Surge Suppressor	PHOENIX / SIEMENS / DEHN
9.	Floor Trunking / Wall Channels	MK / LEGRAND / NEXCO
10.	Multi - function Meter	ABB / SIEMENS / L & T / ENERSOL
11.	DWC HDPE Pipe	DURA LINE / CARLON / EMTELLE
12.	Transformers	ABB / AREVA / ANDREW YULE / CROMPTION / VOLTAMP
13.	Auto Voltage Regulator	ABB / ANDREW YULE / AREVA
14.	Contactors	L & T / SCHNEIDER - TESYS / SIEMENS / ABB (A RANGE)
15.	Moulded Case Circuit Breaker	L&T(D SHINE) / SIEMENS (SENTRON - 3VA) / SCHNEIDER COMPACT - NSX / ABB (TMAX) / LEGRAND (DPX)
16.	VCB / SF6	ABB / ANDREW YULE / AREVA / SIEMENS
17.	Push Buttons	ABB / SIEMENS / L&T / TELEMECHANIQUE / SCHNEIDER

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S. No.	Item	Name of Manufactures
18.	Protection Relays	ABB / AREVA / L&T / SCHNEIDER / SIEMENS
19.	Timers	ABB / SIEMENS / L&T / TELEMECHANIQUE / GE
20.	Indicating Lights	ABB / SIEMENS / L&T / AE / VAISHNAV / SCHNEIDER
21.	Indicating Instruments	RISHABH / CONSERVE / L&T / YOKINS INSTRUMENTS / ENERCON
22.	HT Cable	CABLE CORPORATIONOF INDIA / UNIVERSAL / GLOSTER / FINOLEX / GEMSCAB
23.	LT Cable	CABLE CORPORATION OF INDIA / UNIVERSAL / GLOSTER / FINOLEX / GEMSCAB
24.	Cable Glands	DOWELS / CROMPTION / BICO / SIEMENS / COMET / RAYCHEM
25.	D.G. Set	**Engine:** CATERPILLAR / CUMMINS / JAKSON / MTU / DEUTZ / PERKINS (STERLING) **Alternator:** STAMFORD / LEROYSOMER / AVK / TOYO DONKEY
26.	Bus Duct	GODREJ & BOYCE / SCHNEIDER / L&T / SIEMENS / LEGRAND
27.	ACB	SCHNEIDER MASTERPACT(NW) / SIEMENS (SENTRON-3WT) / ABB - EMAXPR 123 / L&T UNIPOWER(UN RS2 . 5GC) / LEGRAND (DMX3)
28.	Selector Switch	KAYCEE / L&T / SIEMENS / BCH / GE
29.	Battery	EXIDE / STANDARD / AMCO / HBL - NIFE / PANASONIC / CUMINS PULSELITE
30.	Battery Charger	VOLSTAT / AMARARAJA / CHHABBI / CALDYNE / LABOTECK / JAKSON
31.	Capacitor Banks	GE / EPCOS / NEPTUNE - DUCATI / MATRIX / L&T
32.	Reactors	EPCOS / ABB / L&T / DUCATI
33.	Thyristors	EPCOS / ABB / L&T / DUCATI
34.	Trivector Meter	L&T / DUCATI / CONSERVE / SECURE

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S. No.	Item	Name of Manufactures
		/ SCHNEIDER
35.	Power Factor Correction Relay	EPCOS / L&T / NEPTUNE - DUCATI / GE / SCHNEIDER
36.	Rubber Mat	PREMIER POLYFILM LTD. / POLY ELECTROSAFE / CHALLENGER
37.	HT Panel	ABB / ANDREW YULE / AREVA / SIEMENS / ADVANCE PANELS & SWITCHGEAR PVT. LTD.
38.	Capacitor Panel / DG Panel	ADVANCE PANELS & SWITCHGEAR PVT. LTD. / SIEMENS / ABB /
39.	CTs & PTs	KAPPA / L&T / AREVA / MATRIX / ADVANCE PANELS & SWITCHGEAR PVT. LTD. / ANANT POWER / NEWTEK ELECTRICALS
40.	Termination Kit	CABSEAL / 3M / RAYCHEM / DENSON
41.	Cable Trays	LEGRAND CABLOFIL / OBO BETTERMANN / GEWISS / INDIANA / SLOTCO / MEM / VENUS / CTM ENGINEERING
42.	Cable Lugs	DOWEL / CROMPTION / BICO / SIEMENS / COMET / CABSEAL
43.	Octagonal / ornamental Pole (G.I.)	BAJAJ / SURYA / TRANSRAIL LIGHTING LTD. (TLL) / SCHREDER
44.	Auto Transfer Switch (ATS)	ASCO / RUSSEL ELECTRIC / EATON / KOHLER
45.	ATS Panel	ADVANCE PANELS & SWITCHGEAR PVT. LTD. / TRICOLITE / SIEMENS
46.	Frequency Converter	APLAB LIMITED / SIEMENS / L&T / MERLIN HAWK
47.	Earthing	SOUTH ASIAN ENTERPRISE LTD. / DEHN INDIA PVT. LTD. / SGI
48.	Solar System	PCI / JAKSON / WAAREE
49.	UPS	EMERSON (LIBERT) / SCHNEIDER (MGE) / GUTOR / MITSUBISHI
50.	D.G. Synchronization Panel	ALLEN BRADLY / GENOP (SIEMENS)

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S. No.	Item	Name of Manufactures
51.	Light Fixtures	PHILIPS / BAJAJ / TRILUX / SCHREDER / IGUZZINI
52.	Lamps & Tubes	OSRAM / PHILIPS / CROMPTON GREAVES
53.	All other Items not covered above	AS PER SAMPLE APPROVED

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QUALIFICATION FORMS

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APPLICATION FORM - 1 PAGE ____OF ____PAGES

General Information

1.	Name of firm	
2.	Head office address	
3.	Telephone Fax Email	
4.	Contact Person(s) Name Title/Position	
5.	Place of incorporation / registration Date	
6.	Legal status of firm	
7.	Field of specialty in business	
8.	Number of persons	

Date _____ Signature _____

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APPLICATION FORM - 2 PAGE ____OF ____PAGES

Name of the Applicant

General Work-Experience:

1. Annual Turnover

The information supplied should be the annual turnover of the Applicant (separately for each partner of a joint venture/ each member of a consortium), in terms of the amounts paid by the clients for each year in the last five (5) years. Unless specifically asked for, Applicants need not to enclose testimonials, certificates, and publicity material with their applications; they will not be taken into account in the evaluation of qualifications.

Fiscal Year	Turnover (unit)
1.	
2.	
3.	

Fiscal year begins on _____in each calendar year.

2. Selection Criteria:

Experience as Contractor (relevant categories of works) completed in the last Five(5) years to demonstrate the Applicant's business experience should be listed in separate sheets in a form as shown below:

No.	Name of Project	Role of the Applicant (sole contractor, or partner in JV/Consortium)
1		
2		
3		

Date _____ Signature _____

NB : To please attach detailed data sheet wherever possible.

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APPLICATION FORM – 3 PAGE ____OF ____PAGES

Current Contract Commitments/ Works in Progress

Name of Applicant

Applicants shall provide detail about current List of projects on which he is working

Name of contract	Description of works	Stipulated date of completion
1.		
2.		
3.		
4		
5		
6.		
7.		
8.		
9.		
10.		

Date _____ Signature ----------

Sig. Of Bidder

AFFIDAVIT

1. I, the undersigned, do hereby certify that all the statements made in the required statements are true & correct.

2. The undersigned also hereby certifies that neither our firms M/s _____ have abandoned any work in JKPCC Ltd. or any other Department nor any contract awarded to us for such works have been rescinded, during last five years prior to the date of this bid.

3. The undersigned hereby authorizes (s) and request (s) any bank, person, firm or corporation to furnish pertinent information deemed necessary & requested by the department to verify this statement or regarding any (our) competence and general reputation.

4. The undersigned understands and agrees that further qualifying information may be requested and agrees to furnish any such information at the request of the department/project implementing authority.

_____

(Signed by an Authorized Officer of firm)

_____

Title of Officer

_____

(Name Firm)

_____

(Date)

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TENDER PROFORMA OF BID

Managing Director,
JKPCC Ltd.,
Jammu.

Sub: ***Supply, Installation, Testing & Commissioning of UPS System at New Legislature Complex, Jammu.***

Sir,

This has reference to above mentioned NIT and our offer against the same is as under:

1. I/We hereby affirm that I/We have read and have fully understood all terms, conditions and technical specifications of tender document.
2. I/We hereby offer to supply genuine goods and material at the rates and quantities as described in our subject offer and shall execute the work(s) truly and faithfully within the time specified and set forth in the aforesaid offer. The goods and material to be supplied will be of the quality answerable in every respect with our offer / tender quoted above.
3. I/We shall be responsible for all complaints as regard the quality of material and all material and equipment shall comply in all respects with the requirement of quoted standard specifications.
4. I/We do hereby certify that the material and equipment offered are free from legal encumbrances and any claim regarding infringement and any patent of country of origin or India and shall be defended by us at our own cost and damages/ cost, if forwarded against purchaser in such a suits shall be borne by us.
5. I/We shall be hereby responsible for all complaints as regards quality of the material/ bad workmanship and for all such complaints the decision of the Corporation will be final and binding on us.
6. I/we enclosed a DD No. :_____ dt:_____ for the prescribed amount of Rs:_____(Rs:_____)drawn in favour of "_____"as Cost of Tender Document and CDR/FDR:_____ dt:_____ for the prescribed amount of Rs:_____ (Rs:_____) drawn in favour of "_____"as earnest money and as required in terms of tender specification. I/we fully understand that in the event of my / our tender being accepted, the earnest money shall be returned back to me after successful completion of the work.
7. I/we shall have no claims to the refund of the earnest money prescribed against this tender in the event of my / our non-compliance of the work order, provided such order is placed within the period of validity of my / our tender as indicated in paragraph 10 below.
8. I/we further understand that my earnest money will stand forfeited even if I withdraw my tender at any stage during the currency of the period of validity.
9. My/our tender shall remain valid for a period of 90 days from the date of opening of the tender against the **NIT No: 17 of 2018-19 Dated :12/11/2018**
10. My/our tender along with the terms and conditions with relevant columns and annexure duly filled in under my / our attestation and with each page of the tender papers including the enclosed terms and conditions signed by me / us (in the capacity of sole owner / general or special / attorney, in proof of which power of attorney is attached) is submitted for your favorable consideration.
11. I/we have read the enclosed terms and conditions carefully and have signed the same in token of their absolute and unqualified acceptance. My/our tender constitute a "firm" offer under the J&K contract Act and is open to an acceptance, in whole or in part. My/our offer, if accepted on the attached terms and conditions will constitute a legal binding contract and shall operate as contract as defined in the J&K Contract Act and the Sales of Goods Act.
12. I/We understand that Managing Director, JKPCC Ltd., reserves the right to accept or reject the tender without giving any reason thereof.

Thanking you,

Yours faithfully

Signature

Name & Full address of tenderer with stamp

Place ……

Date……

Sig. Of Bidder

Bid Security Forms
Bank Guarantee

Date:_____

(Name of Contract)

To: (Name and address of Employer)

WHEREAS (name of Bidder) (hereinafter called "the Bidder") has submitted its Bid dated (date of bid) for the performance of the above-named Contract (hereinafter called "the Bid")

KNOW ALL PERSONS by these present that WE (name of Bank) of (address of bank) (hereinafter called "the Bank"), are bound unto (name of Employer)(hereinafter called "the Employer") for the sum of: (amount), for which payment well and truly to be made to the said Employer, the Bank binds itself, its successors and assigns by these presents.

THE CONDITIONS of this obligation are as follows:

1. If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder in the Bid Form, or adopts corrupt and fraudulent practices.
2. If the Bidder, having been notified of the acceptance of its Bid by the Employer during the period of bid validity
a) Fails or refuses to sign the Contract Agreement when required, or
b) Fails or refuses to submit the performance security in accordance with the bidding documents or.
c) Adopts corrupt or fraudulent practices.

WE undertake to pay to the Employer up to the above amount upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will mention that the amount claimed by it is due , owing to the occurrence of one or both of the two above-named CONDITIONS, and specifying the occurred condition or conditions.

This guarantee will remain in force up to and including (date 90 days after the period of bid validity), and any demand in respect thereof must reach the Bank not later than the above date.

For and on behalf of the Bank

_____

in the capacity of Common Seal of the Bank

_____

Sig. Of Bidder