



**INDIAN BANK
ZONAL OFFICE
GHAZIABAD ZONE
UTTER PARDESH**

PART - I

TECHNICAL BID

**TENDER DOCUMENT FOR SUPPLY, INSTALLATION, TESTING
AND COMMISSIONING OF 250 KVA UNITISED SUBSTATION
FOR INDIAN BANK AT PLOT NO E-16B / 1, SECTOR-30;
D-37/2,SECTOR-50 & D-211/,SECTOR 61 NOIDA,UP.**

ISSUED TO

M/s. _____

ARCHITCT

**M/S VASTU SADAN PVT LTD
122A/12, GROUND FLOOR, GAUTAM NAGAR,
NEW DELHI-110049**

ELECTRICAL CONSULTANT

**M/S R A MALIK & ASSOCIATES
17A/10, ROOM NO.-301, AJMAL KHAN,
KAROL BAGH, NEW DELHI-110005**

This document contains 57 pages

**GHAZIABAD ZONE****PART - I
TECHNICAL BID
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NOTICE INVITING RE-TENDER FOR SITC OF 250 KVA UNITISED SUBSTATION FOR INDIAN BANK BUILDINGS AT SECTOR 30, SECTOR 50 & SECTOR 61 NOIDA, UP.

Sealed tender on **item rate basis** under two bid systems are invited from the Tenderers who qualifies the minimum eligibility criteria subsequent to press advertisement for the work of Supply, Installation, Testing & Commissioning of 250 KVA Unitised Substation for Indian Bank Buildings various place at

1. Plot No.:E-16B /1, Sector-30, Noida, UP
2. Plot No.:D-37/2, Sector-50, Noida, UP
3. Plot No.:D-211/, Sector 61 Noida, UP.

The documents (Both Technical and Price Bid) can be down loaded from Bank's web site www.indianbank.in/tenders. or/obtained from our panel architect M/S Vastu Consultant Pvt Ltd, 122 A/12, Gautam Nagar, New Delhi -110 049 from 15/07/2016 onwards.

The tender shall be of two cover system / two bid system.

Part 1:- Technical Bid document containing Technical specifications, qualifications, general conditions of contract etc.

Part 2 :- Price Bid

The cost of tender document **Rs.1000/- (Rupees One Thousand Only)** (Non-refundable) shall be enclosed in the form of DD favouring "Indian Bank, Zonal Office, Ghaziabad, UP payable at Ghaziabad along **with Technical Bid Documents.**

The EMD for **Rs.80,000/-** in the form of D.D favouring "Indian Bank, Zonal Office, Ghaziabad or Bank guarantee from any scheduled Bank in favor of Indian Bank, Zonal Office, Ghaziabad shall be enclosed **along with Technical Bid Documents.** Tenders submitted without EMD and Tender Cost will be rejected.

The tenders in **DUPLICATE along with enclosures** should be submitted in two separate sealed covers each with the superscription giving the Name of the work.

The first cover super-scribed as "**Technical Bid**" should contain Technical Bid document with annexure-1(in duplicate) along with cost of Tender **for Rs.1000/-** and EMD for **Rs.80,000/-** in the form of Demand Draft / BG (Part I).

The bidders if intend to claim the exception of EMD, The bidder has to produce valid NSIC/MSME Certificate- along with the tender document for claiming EMD exemption for NSIC / MSME registration. If the bidder does not submit relevant exemption documents, the tender submitted by them will be treated as incomplete bid without EMD and will be rejected without any communication.

Also the cover should contain all the technical pamphlets, literatures of the dry type transformer and other features of the unitized substation and such other details / data required for the technical evaluation of the entire system offered. (It is essential that any technical information considered useful should be furnished at the first instance itself in this envelope and at latter date any additional or supplementary information shall not be entertained unless it is found necessary and sought by the Indian Bank in form of written clarification to clear any pertinent doubts).

The second cover super scribed as **“Price Bid”** should contain Price Bid (in duplicate) and should be submitted on the same given date and time simultaneously along with Technical Bid. Non submission of the same along with Part I shall automatically render the entire tender being rejected. This envelope should contain duly filled in Bill of quantities (enclosed in the tender document) with values written in words and figures, and as detailed elsewhere in the tender documents.

Both the above sealed covers (Part I & Part II) shall be submitted together in a **common sealed cover with the superscription giving the Name of the work.**

Salient Features of Contract:

Estimated Cost of Work (approx)	Rs.41.70 lakhs.
Earnest Money Deposit	Rs.80,000/- (Refundable) by crossed demand draft Payable at Ghaziabad and drawn in favor of Indian Bank, Zonal Office, Ghaziabad or Bank Guarantee from any scheduled bank in favour of Indian Bank, Zonal Office, Ghaziabad, UP.
Retention Money Deposit (RMD)	5% of the Each Bill Amount.
Initial Security Deposit	7% of the total contract price (EMD + RMD)
Defects Liability Period	12 Months from the date of virtual completion
Date of Commencement	7 days from the date of issue of Work Order / letter of intent or date of which the site is handed over whichever is later.
Date of Completion	45 days from the date of issue of Work Order / letter of intent or date of which the site is handed over whichever is later.
Liquidated Damages for Delay	1% per week of the Contract Value for intermediate and final deadlines subject to maximum total of 10% of Contract value.
Frequency of Interim Certificate	On delivery of material at site
Period of honouring certificate for interim payment against each running bill by Indian Bank	10 days from the date of receipt of Bill payment recommendation from Architect.
Period of honouring Final Bill	Four weeks from the date of receipt of Bill payment recommendation from Architect.
Dates for down loading the Tender	From 15-07-2016
Date of Pre Bid Meeting	At 10.30 AM on 26-07-2016
Last date and Time of Submission of tenders	Before 3.00 PM on 29-07-2016
Opening of Technical Bid with EMD	3.30 PM on 29-07-2016

Opening of Price Bid	Will be informed later
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- Validity of offer shall be 90 days from the date of opening of tender (Technical Bid).
- A pre-bid meeting will be held at 10:30 AM on **26/ 07 /2016** at the Zonal Office, Ghaziabd, UP to give clarifications and decisions in connection with any issues or doubts raised by the tenderers. The tenderers should send a list, in duplicate, of any clarifications or decisions they need, so as to reach the Employers' offices not later than 5:30 PM on **25/07/ 2016**.
- **The purpose of the pre-bid meeting is to ensure that the bids will be submitted without any conditions and to clarify all issues raised by the Tenderers.** The rates quoted by the tenderer shall be based only on the specifications and conditions of the tender documents. Any conditional tender will be rejected by Indian Bank.

Note :-

- 1) The tender without complete information and accepted photocopies of documents in support of fulfilling the Pre-qualification criteria will not be entertained.
- 2) If any information furnished by the applicant is found incorrect at a later stage, he shall be liable to debarred from tendering / taking up the work in Indian Bank.
- 3) The Bank reserves the right to verify the particulars furnished by the applicant independently.
- 4) Short- listing of Tenderers will be finalized after inspection of works and obtaining confidential reports from previous employers for only those firms who fulfill the aforesaid Pre-qualification criteria and that specified in Technical bid.
- 5) The tenderer shall take care to price his tender rationally. Extreme under pricing or overpricing in item rates total amount will be considered adversely in the assessment of tenders. The tenderers shall on demand submit analysis of rates of some items of work if so required by the Employer.
- 6) The Employer is not bound to accept the lowest tender and reserves the right to accept or reject any or all tenders, either in whole or in part, without assigning any reason for doing so.

Eligibility Criteria

1. The Tenderers shall be themselves approved manufactures / authorized dealers of manufacturers who have executed the work of supply, installation, testing and commissioning of Unitized Substation work at Government, Public Sector Undertakings and reputed business organizations / Class-1 Electrical contractor of UP / Delhi / Haryana electricity Board / Railways / MES.
2. The tenderers shall produce the following documents duly attested along with tender documents.
3. Audited financial statement consisting of financial turnover and profit & loss account for the past 3 years. Those tenderers who have achieved annual turnover of at-least Rslakhs each in all the past 3 years (April 2013 to March 2016) are only eligible to tender for the work. The tenderer should not have incurred loss during the last 3 years *(shall be submitted in the below format)*

Sl. No	Financial Year	Sales (in Rs.)	Net Profit (in Rs)
1	2015-16		
2	2014-15		
3	2013-14		

4. The tenderer shall have minimum of 5 years experience in supply, installation, testing and commissioning of Unitised substation work. The tenderer shall produce the details of work done and enclose work orders / agreements and satisfactory work completion certificate in each one of the last 5 years.
5. The tenderer should have a solvency for an amount Rs 20,00,000 .00 (**Rupees Twenty Lakhs only**) duly issued by any Scheduled bank obtained on or after 31.03.2016 and enclose copy of the same.
6. The tenderer should have after sales service unit at Delhi ,NCR. The contact details should be given.
7. Tenderer should be possession of "A" Grade License issued by Competent authority respective state Govt, Electrical Inspectorate.
8. Tenderer should provide firm/company particulars as mentioned in **Annexure-1**
9. The tenderer should have supplied unitized substation with capacity 250 KVA and above of (a) Three works each costing not less than the amount equal to 40% of the estimated cost or (b) Two works each costing not less than the amount equal to 50% of the estimated cost or (c) One work costing not less than the amount equal to 80% of the estimated cost under single agreement during the last 5 years ending with 31.03.2016

10. The tenderer shall produce copies of Work orders and Completion Certificates for the works claimed under eligibility criteria as a proof of having completed the job (item 4 of above) in the following format.

Sl. No	Name of the work executed	Work order reference	Year of execution	Amount of order

11. I.T.C as per the Clause No. 13 of special conditions of contract.

ZONAL Manager

Indian, Bank, Zonal Office,
C-69, RDC, Rajnagar District Centre,
Ghaziabad, UP

TENDER DECLARATION

I/We have read and examined the notice inviting tender, Schedules, applicable specifications, drawings, Conditions of contract and other documents and rules referred to in the conditions of contract and all other contents in the tender documents for the work.

I / we hereby submit tender for the execution of the work specified by **Indian Bank, Zonal Office, C-69, RDC, Rajanagar District Centre, Ghaziabad, UP** within the time frame specified in the tender and in accordance in all respects with the specifications, designs, drawings and instructions in writing referred to in General conditions of contract .

We agree to keep the tender open for 90 days from the due date of opening of Tender (Technical Bid) thereof and not to make any modifications in its terms and conditions.

A sum of Rs /- is enclosed in the form of demand draft / Bank Guarantee towards EMD.

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

Dated :

Signature of the tenderer

Witness Signature

Name :

Postal Address :

Occupation.

DECLARATION

(TO BE GIVEN BY THE APPLICANT WHO HAVE DOWNLOADED THE TENDER DOCUMENT FROM THE WEB)

It is to certify that

- 1. I / We have submitted the Tender document in the proforma as** down-loaded directly from the web site & there is no change in formatting, number of pages etc.
- 2. I / We have submitted Tender document which** are same / identical **as available in the website.**
- 3. I / We have** not made any modification / corrections / additions etc **in the Tender documents downloaded from web by me / us.**
- 4. I / We have checked that** no page is missing **and all pages as per the index are available & that all pages of Tender document submitted by us are** clear & legible.
- 5. I / We have** signed (with stamp) all the pages **of the Tender document before submitting the same.**
- 6. I / We have** sealed the Tender documents properly before submitting the same.
- 7. I / We have** submitted the cost of Tender document.
- 8. I /We have** read carefully & understood the instructions to all the applicants & to the applicants who have down-loaded the Tender document from the web.
- 9. In case at any stage later, it is found that there is difference in our downloaded Tender documents from the original, BANK shall have the absolute right to take any action as deemed fit without any prior intimation to me / us.**

Dated:

Signature(s) of applicant(s)

SPECIAL CONDITIONS OF CONTRACT**1. Scope of Work:**

The scope of work for the purpose of this tender constitutes Supply, Installation, Testing and Commissioning of 250 KVA unitized substation for Indian Bank building at

1. Plot No.:E-16B /1,Sector-30,Noida,UP -1 No
2. Plot No.: D-37/2,Sector-50,Noida,UP-1No
3. Plot No.:D-211/,Sector 61 Noida,UP- 1No.

The works should be carried out in accordance with the "Drawings, Schedule of quantities, Technical Specification, Contract Conditions, Engineering IS codal provision". The works also include preparing drawing, obtaining approval from architects/Consultant, and UP electrical safety department, obtaining NOC from UP electrical safety department and providing B&L form for the executed Work (if any).

2. Price Basis :-

- a. The unit rates mentioned in schedule of rates shall remain firm and shall not be subjected to any escalation throughout the currency of the contract.
- b. The quoted rates shall be inclusive of supply of all materials required for completing the item works.
- c. Payment shall be made on the actual quantum of work executed, duly accepted by Engineer-in-Charge.
- d. The rates quoted shall be based on laws, levies, taxes and excise duties applicable on the date of LOI. Any Statutory Variations thereto and / or new levies due to an act or enactment, after the date, shall be to the Employer's account against documentary evidence within the contractual completion date. Any such variation / imposition of new taxes and levies beyond the contractual completion date shall be to the Tenderer's account.
- e. The Tenderer shall clearly indicate every element of taxes, duties, levies and cess considered in the quoted price.
- f. Tenderer shall satisfy himself on the applicability of various taxes, duties, levies, octroi, including sales tax, Service tax, works - contract tax, turnover tax, VAT, etc. as applicable for such work and quoted prices shall be inclusive of all such liabilities. Employer shall not be liable to any liability of the Tenderer on this account. Tenderer shall periodically produce documentary proof for having fulfilled the above obligations in time, including proof of payment, proof of filing of returns, etc. failing which Employer reserve the right to take appropriate action at the cost and consequence of the Tenderer. Service Tax, Education Cess and Secondary & Higher Education Cess, as applicable at the prevailing rates, shall be shown separately in Tenderer's Bills.
- g. Income Tax, at applicable rates, shall be deducted from the Tenderer's Bills, as per Income Tax Act and TDS Certificate issued thereof.

3. Terms of Payment:**Progress Payment:**

1. 60% of value of Contract (excluding Maintenance charge) / Interim bill value on receipt of materials at site and against submission of invoice, duly accepted by Indian Bank, drawing approval by the respective authority subject to deduction of 5% towards retention money,
2. 30% of the contract value (excluding Maintenance charge) upon the completion of erection and Commissioning including submission of NOC from Electrical safety department subject to deduction of 5% towards retention money,
3. Balance Amount (10%) (excluding Maintenance charge) shall be released on submission of all statutory approvals if any & submission of invoice duly accepted by Indian Bank, Providing O&M Manual which includes as built drawing etc, subject to deduction of 5% towards retention money,.
4. 50% of both retention money deducted, as stated above and EMD shall be released on successful commissioning of the UNITISED SUBSTATION and on receipt of all final technical documents and all relevant statutory approvals against submission of the following :
 - Invoice duly accepted by Indian Bank/ Engineer-in-Charge
 - "NO CLAIM" certificate
5. Employer may withhold payment on account of any defect / deficiency in the work already executed and payment released, based on subsequently discovered evidence, failure to make payments to Sub-Tenderers, damage caused by the Tenderer to Employer's property, properties of other agencies within the premises, unfulfilled statutory obligations, etc.
6. AMC payment will be paid periodically i.e six month once in advance.

4. Effective date, Time schedule and Liquidated damages for delay:

- a. The date of issue of Work Order / letter of intent or date of which the site is handed over whichever is later shall be deemed as the "Effective Date" of contract.
- b. The entire work covered under the contract shall be completed in all respects within 45 days from the Effective Date.
- c. Time is the essence of this project and hence completion schedule of 45 days should be strictly adhered to.

5. Measurement:

- a. The Quantities set out in the schedule of items and rates are estimated quantities of work. The final quantities of work executed by the Tenderer in fulfillment of his obligations under the contract shall be jointly measured by the Tenderer and the Employer's. The Employer will be final authority for the measurement relating to bills.

- b. The intending tenderers are also required to make their own assessment of adequacy and correctness of the quantities before submitting their tenders.

6. Responsibility:

- a. Employer reserve the right to inspect the 250 KVA unitized substation etc. at the Manufacturer's / Tenderer's Works as per the technical specifications.
- b. However, such inspection shall not absolve the Tenderer of his responsibility to supply the materials in the required quantities and carry out the work as per technical specifications.
- c. Unless otherwise specified in the contract / Work order / Purchase Order, the completion of work shall not be deemed to have been achieved until all the works required to be carried out under the contract have been completed to the entire satisfaction of the Employer, in all respects.
- d. It is the responsibility of the Tenderer to obtain all statutory approval from statutory authority related to scope of work in the tender and handover to the Employer.

7. Progress Report:

The Tenderer shall submit to the Employer once in a week progress report for the previous period showing up-to-date cumulative progress and progress during the preceding period alone on all progress items of each section or portion of the works in the proforma prescribed by the Employer.

8. Tenderer's Engineer:

The Tenderer shall keep qualified and experienced Electrical Engineer for full time during execution of work for entire Contract.

9. Equipment:

The Tenderer shall make his own arrangement to procure all constructional plant and equipment for his work. He shall also submit with the tender, the type and number of different equipments with their capacities in good working conditions, which he will use on the site to ensure completion of the work in specified time. All materials, construction plant and equipment etc., once brought by the TENDERER on the site are not to be removed from there without the written approval from the Employer.

10. Extra Items:

- a. Extra items, if any, shall be paid on the basis of analysis of rate of cost of materials and labour produced by TENDERER, and the item-rates agreed upon with the Employer.
- b. The execution of extra item is compulsory in order to complete the project work. In case the Tenderer fails to execute extra item, Employer will have the right to execute these items through other agency / agencies at the risk and cost of the Tenderer.

- c. While arriving at the agreed rate of extra items, the Plant & Machinery / Overheads / profit shall be considered to the tune of 15% of cost of materials and labour.
- d. Employer reserves the right to verify the price of material through market survey.

11. Guarantees / Liabilities:

- a. The Installation including all components and accessories shall be guaranteed for a period of 2 years from the date of virtual Completion of the same against defective material, shortfall in performance and faulty workmanship. The Tenderer shall immediately make free replacement of any of the parts or components that might go out of order within this period and Indian Bank's decision in this regard will be final and binding on the Tenderer. Free maintenance shall be provided during the guarantee period.
- b. The work shall be carried out in a workmanlike manner.

12. Work Front:

- a. Work front for the Tenderer may / may not be guaranteed throughout the pendency of the contract, especially during monsoon. No compensation will be paid for idle labour hours and other incidental charges. Tenderer may suitably arrange requisite labour / manpower / equipment to meet the requirement of lean period, if any.
- b. The Tenderer have to execute the work in such place and condition where other agencies will also be engaged for other works, such as mechanical, electrical, instrumentation work, etc. No claim shall be entertained due to work being executed in the above circumstances. The Tenderer should ensure that there is no interference with the work of other agencies at Site.

13. INCOME TAX CLEARANCE (I.T.C) CERTIFICATE

Attested copy of the latest Income Tax Clearance Certificate in the proforma prescribed by the Government of India should be attached with the bid document. The I.T.C. Certificate should be in the name of the firm/individual who has quoted for the tender. In the absence of the above clearance certificate, Tenderer may not be awarded the work tendered for, in the light of government directives/instructions in this regard.

14. INSURANCE

- a. Tenderer shall obtain and maintain any and all necessary insurance cover for the entire work up to Virtual completion date , that may be required under any law or regulations applicable, including but not limited to the following:
 - Tenderer's All Risk Policy, for Tenderer's Scope of Work.
 - All materials and Tenderer's own machinery, equipment, tools & tackles, vehicles, etc.
 - Third Party liability.
 - Workmen Compensation
 - ESIC
 - Employer's Liability

- b. The quoted price shall be inclusive of all costs for such insurance coverage. In all such policies, Employer shall be made 'Co-insured'. Also other Tenderers, working at the Site, be covered under the policy. The Third party insurance shall be for a sum of Rs 5.00 lakhs per accident.

15. **COMPLETION TIME** :

Tenderer shall complete the entire work within 45 days from the date of issue of Work Order / letter of intent or date of which the site is handed over whichever is later. During the above time frame, the tenderer should also obtain required approvals from CEA and other statutory authorities.

16. **GENERAL**

- a. These Special Conditions of Contract (SCC) shall be read in conjunction with the terms and conditions stipulated in the General Conditions of Contract (GCC). However, if there is any contradiction between the terms and conditions mentioned in this SCC and those in the GCC, stipulations of SCC shall prevail to that extent.
17. If L1 bidder withdraws then Bank reserves the right to award the contract to L2 bidder at L1 bidder's rate if L2 accept for the same.
18. If Bank feels that the L1 does not have firm capacity to supply the Unitised substation in time, sharing of quantities between L1 & L2 will be carried out at Bank's discretion at L1 bidders rate.
19. The Bank is at its discretion to extend the tender for additional Unitised substation if need be

=====XXXXXX=====XXXXX=====

ARTICLES OF AGREEMENT

THIS AGREEMENT is made on this day of 2016 between Indian Bank having its **Zonal Office at C-69, RDC, Rajnagar District Center, Ghaziabad, UP** (hereinafter referred to as the "Employer") which expression shall include its successors, legal representatives and assigns of the one part.

AND

* Shri _____ S/D/o _____ resident of _____ the sole proprietor of M/s _____ having office at the following address _____

* M/s. _____ the partnership firm having an administrative / principal office at _____ represented by its Managing / duly authorized partner.

* M/s. _____ company / body incorporated under the provisions of the Companies Act 1956 having its registered office at the following address _____, duly represented at _____ duly represented by its constituted and authorized Managing Director, Shri _____

(hereinafter referred to as the "Tenderer") which expression shall include its successors, legal representatives and assigns of the second part.

WHEREAS THE Employer intends to install New 250 KVA Unitized substation 3Nos. for Indian Bank, various place in Noida, UP.

AND whereas the Employer has called for tenders for the 250 KVA Unitized substation as per Employer's NIT dated **15/07/2016** and whereas the tender dt. ----- submitted by the Tenderer has been accepted for such sum as may be ascertained to be payable in terms of the Bill of Quantities and which sum is estimated to be Rs. (Rupees) hereinafter referred to as the said "Contract Sum".

AND whereas the Tenderer has agreed to execute the work as per drawings, specifications, conditions of contract of the tender and Work Order for the Employer's project of Supply, Installation, Testing & Commissioning of **Unitized substation 250 KVA** for Indian Bank building at

1. Plot No.:E-16B /1,Sector-30,Noida,UP
2. Plot No.: D-37/2,Sector-50,Noida,UP
3. Plot No.:D-211/,Sector 61 Noida,UP.

AND whereas parties herein desirous of reducing the agreed terms into writing as under:

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:-

- 1) In consideration of the said Contract Sum to be paid at the times and in the manner set forth in the said Conditions the Contract shall carry out and complete all the electrical Works as per terms and conditions herein contained and according to the general conditions of the contract, notice inviting tender, special conditions of contract, general scope of work, technical specifications, schedule of rates to the entire satisfaction of the Employer.

- 2) **Contract Price, Taxes and Payment Terms:**

Total contract price is **Rs.....** which is inclusive of cost of materials, equipment, installation charges and tools and tackles required for execution of the job and statutory required approval . Above price is inclusive of all taxes & duties including excise duty, sales tax, works contract tax, income tax, octroi etc. in respect of this contract. No claim in this respect will be entertained. Sales tax on works contract & Income tax on payments will be deducted and deposited by Employer in accordance with the sales tax law of the state and the provisions of tax deductions at source under Income Tax Act 1961.

- 3) **Completion Period:**

Time is the essence of the Contract. The work is to be completed in all respects within **45 days** from the date of receipt of the Work Order /letter of intent by the Tenderer or handing over of site whichever is later. If the Tenderer fails to complete the job within the agreed time period the Tenderer will have to bear liquidated damages as per the relevant clause mentioned in the Tender Documents.

- 4) **Earnest Money:**

The Tenderer has deposited Bank Guarantee / Demand Draft for an amount of **Rs. 80,000/- (Rupees Eighty Thousand only)** as earnest money.

- 5) **Inspection of Site:**

The Tenderer has inspected the site before submitting his tender and has satisfied himself as to the nature of the work to be executed on the site. Any difficulties which the Tenderer may come across in the course of the work shall in no way entitle the Tenderer to claim or receive extra payment unless the Employer is of the opinion that such difficulties could not have been foreseen and the Employer consents in writing.

- 6) **Supply of Material and Labour:**

The Tenderer shall arrange all labour, materials, equipments, tools, tackles and everything necessary for the completion of the work. The Tenderer will assume all responsibility for the safety, protection and accounting of all material and equipment and the work during construction. All materials used by the Tenderer shall be of the best quality conforming to the required specification mentioned in the tender document and will be subject to the approval of the Employer. All such materials not approved by Employer shall be removed at once by the Tenderer at his own expense. The Tenderer shall also at his own expense arrange for carrying

out any test of materials which the Employer may from time to time require or if so desired by the employer.

7) Defective Work / Materials:

If any part of the work done by the Tenderer is found defective in workmanship or if bad or inferior materials have been used the Tenderer shall at his own risk and cost demolish all such defective work and rebuild the same and / or replace the bad or inferior materials used within a time frame mentioned to the satisfaction of the 'Employer'. The decision of the Employer in this regard shall be final and binding on the Tenderer. In case of default of the Tenderer to remove the defective work and rebuild the same or replace bad or inferior materials as directed by the Employer, the Employer shall be entitled to employ anyone else to carry out the same at risk and cost of the Tenderer and recover all expenses incurred in this regard from the Tenderer.

8) Inspection of Work:

During progress of the work the Employer's authorized representative shall be entitled at all times to have access to and inspect the work. If the work is inspected by the any Government/ Bank's authorized persons, the Tenderer will fully co- operate and extend all help to meet the observations.

9) Supervision:

The Tenderer shall provide one or more competent and technically qualified engineers duly and fully authorized to act on his behalf in all matters relating to the works to be carried out under or any other matter concerning this agreement and who shall at all times be present at the works while any work is in progress as per directions, explanations & instructions of Employer.

10) Compliance with Statutory Regulations & Work Rules:

The Tenderer shall be responsible for complying with the applicable laws / bye laws / Regulations in force from time to time and shall have to bear all statutory liabilities to the workers / personnel engaged for the job. Nothing will be paid extra in this regard. If any amount is paid by the Employer in this regard the same amount shall be deducted from the Tenderer's dues. The Tenderer shall have to arrange insurance cover for the workers / personnel engaged by him for the job.

11) Determination of Contract:

In the event of Tenderer failing to keep / adhere to agreed schedule of work, or in the event of the Tenderer failing to comply with the provisions of this contract by default and / or negligence and / or suspension of work or in the event of Tenderer failing to complete the work within the stipulated period, the Employer may terminate this Agreement forthwith and employ, at the Tenderer's risk and cost, another Tenderer or sufficient number of workmen to complete the work.

12) Force Majeure:

In case any Force Majeure condition herein mentioned occurs and continues for a period exceeding 60 days the parties hereto undertake to sit together and devise ways for expeditious and proper performance of the obligations of the parties under this order.

This clause will be operative only if the work is delayed by

- a) Acts of God
- b) Earthquake or floods or similar natural calamities.
- c) Serious loss or damage by fire or lightning.

13) Arbitration:

“In the event of any dispute or difference relating to interpretation and application of provisions of the contract and all disputes/claims whatsoever which shall either during the continuance of the contract or afterwards either between the parties to the contract or the respective representatives touching the construction/application of any provision/clause mentioned in the contract or any account or liability between the parties to the contract or as to any act or deed or omission of any party to the contract, in any way relating to these presents, shall be first at the discretion of the Bank attempted to be resolved in good faith by mutual discussion within 30 days of the dispute or question being raised failing which the same shall be settled by arbitration in accordance with provisions of Indian arbitration and Conciliation act 1996.

The Parties concerned shall designate an arbitrator on mutual consent/consensus. In the event of no consensus being arrived, an Arbitral Tribunal shall be constituted comprising three Arbitrators, each party appointing one arbitrator and a third arbitrator to be appointed by the two arbitrators so appointed by the parties. The venue of the arbitration shall be exclusively at Ghaziabad, UP and any award passed by arbitrator or the arbitral Tribunal shall be final, conclusive and binding upon the parties and shall be deemed to have been made between parties themselves. The parties to the dispute shall share equally the cost of arbitration as intimated by the arbitrator”.

IN WITNESS whereof the said contracting parties have set their hands and seals on the day and year first hereinabove witness.

Witness Address

Employer

Witness Address

Tenderer

GENERAL CONDITIONS OF CONTRACT**1. DEFINITIONS / INTERPRETATIONS:**

In construing these Conditions and the Specifications, Schedule of Quantities and Contract Agreement, the following words, shall have the meanings herein assigned to them except where the subject or context otherwise requires:

- (a) The 'Contract' means the documents forming the tender and acceptance thereof and the agreement duly executed between the Employer and the Tenderer, together with the documents referred to therein including those conditions, the specifications, schedule of quantities, tender agreement, designs, drawings and instructions issued from time to time by the Engineer-in-Charge. All these documents taken together, shall be deemed to form one contract and shall be complementary to one another.
- (b) The 'Tenderer' or 'Supplier' or 'Unitised substation Manufacturer' or Contractor shall mean the individual Kartha, or Manager of HUF, firm or Company, whether incorporated or not, undertaking the works and shall include the legal heirs/representatives of such individual or the partners composing firm and their legal heirs and successors, or company's authorised and constituted attorneys/agents and permitted assignees of such firm or company.
- (c) The 'Employer' shall mean 'Indian Bank' with their office at Zonal Office, C-69, RDC, Rajnagar District Centre, Ghaziabad, UP and shall include their heirs, legal representatives, assignees and successors.
- (f) Contract Price shall mean the final accepted rates in the Price Bid hereto.
- (g) Date of Contract means the 'Calendar date on which the Employer and Unitised substation Manufacturer / Supplier have signed the Agreement on the Stamp Paper.
- (h) Accepting Authority shall mean the Indian Bank (the Employer).
- (i) Approval' wherever used in the specifications or schedule of Quantities shall mean, respectively, approved by or approval of the 'Accepting Authority' in writing.
- (j) Appellate Authority' shall mean the Indian Bank (the Employer). Who shall also be the authority to consider any extension of time or compensation as defined in clause hereunder.
- (k) Notice in writing' or 'written notice' shall mean a notice in writing typed or printed characters delivered to or sent by registered post to the last known address private or business address or registered office address, and shall be deemed to have been received when in ordinary course of post it would have been delivered, and/or delivered personally, or otherwise proved to have been received.

- (l) 'Virtual completion' shall mean that the work/installation is complete in all respects in the opinion of the Employer and for which the completion/clearance certificate has been issued by Branch and the installation is fit for usage.
- (m) 'Drawings' shall mean all drawings and/or design drawings furnished by the Tenderer/ sketches duly accepted by the Employer before commencement or during the progress of the work.
- (n) 'Letter of Acceptance' shall mean an intimation by a letter issued by the Accepting Authority of the Employer to tenderers that his tender has been accepted in accordance with the provisions in the said letter.
- (o) **"Defect Liability Period" shall mean a period of TWELVE (12) Months. The DLP shall commence from the date of handing over of the 250 KVA Unitized Sub Station set with safety certificate from CEIG / CEA / PCB and accepted by the Employer.**
- (P) 'Schedule of quantities' shall mean the schedule of quantities as specified and forming part of this contract.
- (q) "Priced Schedule of Quantities" shall mean the schedule of quantities duly priced with the accepted quoted rates of the tenderer.
- (r) "The work" shall mean the work or works to be executed or done under this contract.
- (s) "Act of Insolvency" shall mean any act defined by the Presidency Towns Insolvency Act or in Provincial insolvency Act or any amending statutes.

1. SCOPE OF WORKS TO BE CARRIED OUT :-

Supply, Installation, Testing & Commissioning of 250 KVA **Unitised Substation** for Indian Bank building at

- Plot No.:E-16B /1,Sector-30,Noida,UP -1 No.
- Plot No.: D-37/2,Sector-50,Noida,UP-1 No.
- Plot No.:D-211/, Sector 61 Noida,UP. -1 No.

The works should be carried out in accordance with the "drawings" and "schedule of quantities". It includes providing all the materials, wastage of material, labour, transport, tools & equipments and management necessary for and incidental to the completion of the work. All work during its progress and upon completion shall conform to the lines, elevations and grades as shown on the drawings furnished by the Employer. Should any detail essential for efficient completion of the work be omitted from the drawings and specifications it shall be the responsibility of the Tenderer to inform the employer so that upon completion of the work the same will be acceptable and ready for use.

If there are varying or conflicting provisions made in any one or more document(s) forming part of the contract, the Accepting Authority shall be the deciding authority with regard to the intention of the document and his decision shall be final and binding on tenderer.

Any error in description or quantity or rate in Schedule of Quantities or any omission there from shall not vitiate the Contract or release the Tenderer from the execution of the whole or any part of the works comprised therein according to drawings and specifications or from any of his obligations under the Contract.

Employer or their authorized representative may in their absolute discretion issue further drawings and / or written instructions, details, directions & explanations which are, hereafter collectively referred to as " The employer's instructions" in regard to :

- a) The variation or modification of the design quality or quantity of works or the addition or omission or substitution of any work.
- b) Any discrepancy in drawings or between the schedule of quantities and/or drawings and/or specifications.
- c) The removal from the site of any defective material brought thereon by the Tenderer and substitution of any other material thereof.
- d) The demolition, removal and re-execution of any work executed by the tenderer/s.
- e) The dismissal from the work of any persons employed thereupon.
- f) The opening up for inspection of any work covered up.
- g) The rectification and making good of any defects under clauses hereinafter mentioned and those arising during the defect liability period(retention period).

The Tenderer shall forthwith comply with and duly execute any work comprised in such Employer's or his agent/Engineers instructions, provided always that verbal instructions, directions and explanations given to the Tenderer or his representative upon the works by the employer or his agent shall, if involving a variation, be confirmed in writing to the Tenderer/s within seven days. No works for which rates are not specifically mentioned in the priced schedule of quantities, shall be taken up without written permission of the employer or his agent. Rates of items not mentioned in the priced schedule of quantities shall be fixed by the employer as provided in clause "variation".

Regarding all factory made products for which ISI marks are available, only products bearing ISI marking shall be used in the work.

Materials of approved makes as prescribed in tender shall only be used and also colours to be as advised by the employer.

2. TENDERER SHALL VISIT THE SITE :-

The tenderers are advised to have a free inspection of the site before tendering to ensure that the Unitised substation shall be installed in the proposed location with required clearances around the set as per norms prescribed by CEIG / CEA / PCB. The noise level may be maintained at levels prescribed by CPCB. Also it may be ensured that there is no noticeable vibration in the floors due to the operation of the Unitized substation.

Also the Tenderer shall visit the site and make himself thoroughly acquainted with the local site conditions, nature and requirements of the works, facilities of transport condition, effective labor and materials, access and storage for materials and removal of rubbish. Tenderer shall provide in their tender for cost of carriage, freight and other charges as for any special difficulties and including the police restriction for transport etc. For proper execution of works as indicated in the drawings. The successful tenderer will not be entitled to any claim of compensation for difficulties faced or losses incurred on account of any site condition which existed before the commencement of the work or which in the opinion of the Employer or his agent/engineer might be deemed to have reasonably been inferred to be so existing before commencement of work.

4. DRAWINGS AND SPECIFICATIONS:

- a. The Work shall be carried out to the entire satisfaction of the Employer in accordance with the signed drawings, specifications and other Contract documents and such further drawings and details as may be approved by the Employer and in accordance with such written instructions, directions and explanations as may from time to time be given by the Employer.
- b. No drawing shall be taken as in itself an order for execution unless; it is approved by employer and marked "VALID FOR CONSTRUCTION". No claim for payment for extra work shall be allowed unless the said work shall have been executed under the provisions of Clause 10 (Authorities, Notices, Patent Rights and Royalties), or by the authority, directions in writing of the as herein mentioned.
- c. **On receipt of work order, the Tenderer shall submit the following Drawings within 7 days for approval of Bank.**
 - Layout of 250 KVA Transformer –Unitised Substation set and accessories
 - Location of energy meter, LT panel with cabling details even if part may have been provided by Employer / Architects.
 - Electrical single line diagram, control wiring single line diagram, cable layout, panel GA drawing etc. even if part may have been provided by the Employer / architects.
 - Location of earth pits and details of earthing even though these may have been provided by Employer / Architects.

5. SCHEDULE OF QUANTITIES:

The Schedule of the Quantities unless otherwise stated shall be deemed to have been prepared in accordance with the standard procedure of quantity measurement, and shall be considered to be approximate and no liability shall attach Employer for any error that may be discovered therein.

6. SUFFICIENCY OF SCHEDULE OF QUANTITIES:

The Tenderer shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender for the works and of the prices stated in the Schedule of Quantities. The Tenderer's Rates and Prices shall cover all his obligations under the Contract, and all matters and things necessary for the proper completion of the works.

7. ERRORS IN SCHEDULE OF QUANTITIES:

Should any error appear in the Schedule of Quantities, other than in the Tenderer's prices and calculations, it shall be rectified, and such rectification shall not vitiate the Contract but shall constitute a variation of the Contract and shall be dealt with as an authorized extra or deduction.

8. NOTICES :

The Tenderer shall give all notices and pay all fees and royalties in connection with his constructional activities and shall comply with all Acts and Regulations for the successful completion of the Contract Works.

9.TENDERS:

The entire set of tender paper issued to the tenderer should be submitted fully priced and also signed on the last page together with initials on every page. Initials/signature will indicate the acceptance of the tender papers by the tenderer (Also see General Rules and instructions for the guidance of Tenderer).

The schedule of quantities shall be filled as follows

- a) The "Rate" column to be legibly filled in ink in both English figures and English words.
 - b) Amount column to be filled in for each item and the amount for each sub as detailed in the schedule of quantities.
 - c) All corrections to be initialed.
 - d) The "Rate" column for alternative items shall be filled up.
 - e) The "Amount" column for alternative items of which the quantities are not mentioned shall not be filled up.
 - f) In case of any errors/omissions in the quoted rates, the rates given in the tender marked "Original shall be taken as correct Rates.
- No modifications, writings or corrections can be made in the tender papers by the tenderer, but he may at his option offer his comment modifications in a separate sheet of paper attached to original tender papers.

- The employer reserve the right to reject the lowest or any tender and also to discharge any or all of the tenders for each section or to split up and distribute any item of work to any specialist firm or firms, without assigning any reason.
- The tenderer should note that the tender is strictly on item rate basis and their attention is drawn to the fact that the rates for each and every item should be correct, workable and self-supporting. If called upon by the Employer, detailed analysis of any or all the rates shall be submitted. The Employer shall not be bound to recognize the Unitised substation Manufacturer's / Supplier analysis.
- The works will be paid for as "measured work" on the basis of actual work done and not as "lump sum" contract, unless otherwise specified.
- All items of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly, related to and reasonably detectable from the drawings, specifications schedule of quantities and no further extra charges will be allowed in this connection. In the case of lump-sum charges in the tender in respect of any item of works, the payment such items of work will be made for the actual work done on the basis of lump-sum charges as will be assessed to be payable by the Employer.
- The Employer has power to add to, omit from any work as shown in the drawings or described in the specifications or included in schedule of quantities and intimate the same in writing but no addition, omission or variation shall be made by the tenderer without authorization from the Employer. No variation shall vitiate contract.
- The tenderer shall note that his tender shall remain open for consideration for a period of **90 days** from the date of opening of the price bid of the tender.

10. AGREEMENT:

The successful tenderer, shall be required to sign the contract agreement, the proforma of which is enclosed and shall pay for all stamps and legal expenses, incidental thereto.

11. PERMITS AND LICENSES:-

Permits and licenses for release of materials or its purchases which are under Government control will be arranged by the tenderer. The employer will render necessary assistance, Sign any forms or applications that may be necessary.

It may be clearly understood that no compensation or additional charges can be claimed by the tenderer for non-availability of such materials in due time on this account or according to his own requirements.

The tenderer may, however, be eligible to a proportionate extension of time on this account that in the opinion of the Employer is reasonable.

12. GOVERNMENT AND LOCAL RULES:-

The tenderer shall conform to the provisions of all local bye-laws and acts relating to the work and to the regulations etc. of the Government and Local Authorities. The tenderer shall give all notices required by the said Act, Rules, Regulations and bye-laws etc and shall indemnify the Employer against such liabilities and shall defend all actions arising from such claims or liabilities. The tenderer shall get necessary approvals, if any, required from the competent authority at their own cost for carrying out the work.

13. TAXES AND DUTIES :-

- a. The tenderer must include in their tender prices quoted for all duties royalties, cess and sales tax, value added tax or any other taxes or local charges if applicable. No extra claim on this account will in any case be entertained.
- b. The tenderer shall keep necessary books of accounts and other documents for the purpose of this condition as may be necessary and shall allow inspection of the same by a duly authorised representative of the Employer and / or the Engineer-in-charge and further shall furnish such other information / document as the Employer may require from time to time.

14. QUANTITY OF WORK TO BE EXECUTED:-

The quantities shown in the schedule of quantities are intended to cover the entire works as per the drawings / scope of work, and therefore the Tenderer is bound to complete the works at the same quoted rates in the event of quantity exceeding the specified bill of quantity, but the Employer reserves the right to execute only a part or the whole or any excess thereof without assigning any reason therefore.

15. OTHER PERSONS OR AGENCIES ENGAGED BY THE EMPLOYER:

The Employer reserves the right to execute any part of the work included in this contract by other agency or persons and Tenderer shall allow reasonable facilities and use of his facilities for the execution of such work. The main Tenderer shall extend all co-operation in this regard.

16. EARNEST MONEY, INITIAL SECURITY DEPOSIT, RETENTION MONEY & TOTAL SECURITY DEPOSIT:

- a. The Tenderer will have to deposit the specified amount in the form of Demand Draft drawn in favour of Indian Bank, Zonal Office, Ghaziabad, UP (or) Bank Guarantee in the approved format from any Scheduled Bank in favour of Indian Bank, ZONAL office, Ghaziabad, UP at the time of submission of tender as Earnest Money. No interest shall be paid on the earnest money. The earnest money of unsuccessful tenderer will be refunded without any interest soon after the acceptance of the selected Tenderer or after the expiry of the validity period of the tender.
- b. The successful tenderer to whom the contract is awarded will have to deposit as *Initial Security Deposit 2% (two percent) of the value of the accepted tender including the Earnest Money*. The Initial Security Deposit will have to be made within 14 days from the date acceptance of tender failing which the employer at his discretion may revoke the letter of acceptance and forfeit the Earnest Money Deposit furnished along with the tender. The

security deposit may be furnished in the form of Demand Draft / Bank Guarantee payable in favour of Indian Bank (or) BG drawn on any Scheduled Bank for the duration of the contract period plus defect liability period of 12 months.

- c. The Initial security Deposit (2%) made above together with retention money deducted from the progressive running bills @ 5% (five percent) of the Gross value of each running bill will constitute **Total Security Deposit** i.e. The initial Security Deposit plus retention money equals to; 7.0 % of the contract value. On virtual completion of work, the employer shall refund 50% of the total Security Deposit. The Balance Security Deposit of 50% will be refunded after completion of the Defect Liability Period. Further the balance Security Deposit held by the employer shall be returned against submission of Bank Guarantee in the approved format from any Scheduled Bank.
- d. No interest is allowed on Total security Deposit

17. TENDERER TO PROVIDE EVERYTHING NECESSARY:

- a. The Tenderer shall provide everything necessary for the proper execution of the work according to the intent and meaning of the drawings, technical specifications, and schedule of quantities taken together whether the same may or may not be particularly shown or described therein provided that the same can be reasonably inferred there from, and if the Tenderer finds any discrepancies therein, he shall immediately and in writing, refer the same to the employer whose decision shall be final and binding.
- b. The rates quoted against individual items will be inclusive of everything necessary to complete the said items of work within the contemplation of contract, and beyond the unit price no extra payment will be allowed for incidental or contingent work, labor and/or materials inclusive of all taxes and duties whatsoever except for specific items, if any, stipulated in the tender documents.
- c. The Tenderer shall supply, fix and maintain at his own cost, for the execution of the work, all tools, tackles, machineries and equipments and other required facilities for execution of work including the safety aspects.
- d. The Employer on no account shall be responsible for storage of materials or loss or pilferage or theft either in respect of the material stored or material already built and paid for by the Employer.
- e. The Tenderer shall at all times give access to workers employed by the Employer.
- f. Any facilities available at site shall be utilized only with prior permission of the Employer or the in-charge of the site / building Employer and cannot be taken as granted and for such services utilized the Employer is entitled to charge. No extra charges shall be paid over and above what has been quoted for any of the above or for similar such services.

18. TIME OF COMPLETION, EXTENSION OF TIME & PROGRESS CHART :**i). Time of Completion :**

- a. The entire work is to be completed in all respects within stipulated period of 45 days including all approval from authority (including obtention of CEA / CEIG / PCB approval if any) . The work shall be deemed to be commenced within 7 days from the date of acceptance letter or date of handing over site whichever is later. Time is the essence of the contract and shall strictly observed by the Tenderer .
- b. The work shall not be considered as complete until the Employer have accepted in writing that the work has been virtually completed and defect liability period shall commence from the date such certificate.

ii). Extension of Time:

- a. If in the opinion of the Employer **a)** by reason of any exceptionally inclement weather, or **b)** by reason of instructions from the employer in consequence of proceedings taken or threatened by or disputes with adjoining or neighbouring Employers or **c)** by the works, or delay, of other Tenderers or trades men engaged or nominated by the employer and not referred to in the specification or **d)** by reason of authorised extra and additions or **e)** by reason of any combination of workmen or strikes or lockout affecting any of the building trades or **f)** from other causes which the employer may consider being beyond control of the Tenderer , the employer at the completion of the time allowed for the contract shall make fair and reasonable extension of time for completion in respect thereof. In the event of employer failing to give possession of site upon the day specified above the time of completion shall be extended suitably.
- b. In case of such strikes or lock-outs, as are referred to above, the Tenderer shall, immediately give the employer, written notice thereof. Nevertheless the Tenderer shall use his best endeavors all that to prevent delay and shall do all that may be reasonably required to the satisfaction of the employer to proceed with the works and on his doing so that it will be ground of consideration by the employer for an extension of time as above provided.
- c. The decision of the Employer as to the period to be allowed for an extension of time for completion hereunder (which decision shall be final and binding on the Tenderer) shall be promulgated on completion of the work or at the conclusion of such events based on which the extension of time was sought by the Tenderer , and the Employer shall then, in the event of an extension being granted, determine and declare the final completion date. The provision in clause 14 with respect to payment of liquidated damages shall in such case, be read and construed as if the extended date fixed by the employer were substituted for and the damage shall be deducted accordingly.

iii). Progress of Work :

- a. During the period of work, the Tenderer shall maintain proportionate progress on the basis of a **program chart submitted by the Tenderer before the commencement of work**. Tenderer should also include planning for procurement of scarce materials well in advance and reflect the same in a program chart so that there is no delay on the part of the Tenderer in completion of the project.

19. LIQUIDATED DAMAGES :

- a. **Time is the essence of the contract.** Hence the Tenderer shall be aware that non completion of the work will affect the Bank's committed programs and thus the loss by way of delayed services / completion of related works etc, are valuable and cannot be easily quantified. Therefore, it is part of the agreed terms that in the event of any delay in completion of the work, the Bank is liable to charge the Tenderer without the necessity of providing for any details of such losses suffered by the Bank.
- b. Hence if the work is not completed as per the contract terms or to the satisfaction of the employer within the stipulated period, the Tenderer shall be bound to pay to the employer a sum of amount calculated **at 1% of the contract sum per week of delay subject to a ceiling of 10% of the contract sum** by way of liquidated damages and not as penalty during which the work remains un-commenced or unfinished after the expiry of the completion date.
- c. For this purpose the term 'Contract sum' shall be value at the tender rates of the work as ordered / accepted.
- d. Therefore the Tenderer is required to maintain progress in terms of the contract to complete the work within the stipulated period.

20. TOOLS, STORAGE OF MATERIALS, PROTECTIVE WORKS AND SITE OFFICE REQUIREMENTS :

- a. The Tenderer shall provide, fix up and maintain his establishment in an approved position at site and clear away on completion of the works and make good all works disturbed.
- b. The Tenderer shall not fix or place any advertisement of any description or permit the same to be fixed or placed in or upon any hoarding, gantry, building structure other than those approved by the Employer.
- c. **Tools :** The odolite level, prismatic compass, steel tape ,threads and all other instruments found necessary on the works shall be provided by the Tenderer for the due performance of the contract as instructed by the employer.
- d. All suitable scaffolding, ladders and stools that may be required for safe taking of the measurements shall be supplied by the Tenderer .

Storage of materials :

The Tenderers shall provide and maintain proper enclosures for the storage and adequate protection of materials, tools at the space allocated for the purpose including their watch & ward arrangements shall be the responsibility of the Tenderer. Any materials taken out of the premises shall get the "out pass" from the employer.

Protective Measures :

The Tenderer shall make suitable arrangements for watching and protecting the works and materials. The Tenderer shall indemnify the employer against any possible damage to the building, roads and members of public in course of the execution of the work.

The Tenderer should cover in his rates for making provisions for all the above and reasonable facilities for the use of his scaffolding, tools and plant etc., for their work.

21 NOTICE AND PATENTS OF APPROPRIATE AUTHORITY AND EMPLOYERS:

- a. The Tenderer shall conform to the provisions of any Acts of the Legislature relating to the work, and to the regulations and bye-laws of any authorities, and or other Companies (Indian or International) and / or Statutory Authorities, with whose system and design or technical knowhow are/were proposed to have connection with this work.
- b. So also the Tenderer shall before making any variations from the drawings or specification that may be associated to so conform, give the Employer written notices specifying the variations proposed to be made and the reasons for making them and apply for instruction thereon. The Employer on receipt of such intimation, shall give a decision within a reasonable time.
- c. The Tenderer shall arrange to give all notices required for by the said Acts, regulations or Bye-laws to be given to any authority, and to pay to such authority or to any public officer all fees that may be properly chargeable in respect of the work and lodge the receipts with the Employer.
- d. The Tenderer shall indemnify the Employer against all claims in respect of patent rights, royalties, damages to buildings, roads or members of public in course of execution of work and shall defend all actions arising from such claims and shall keep the Employer saved and harmless and indemnified in all respects from such actions, cost and expenses.

22. CLEARING SITE AND SETTING OUT WORKS :

- a. site shall be cleared of all obstructions, waste materials, rubbish of all kinds. All material damages at the site like on the walls, ceiling or flooring or on any other connected place/equipments, materials or installations shall be re-done to maintain originality and shall be leveled at Tenderers own cost.
- b. The Tenderer s shall set out the works and shall be responsible for the true and perfect setting out the works and for the correctness of the positions, levels, dimensions and alignment of all parts thereof. If at any time, any error shall appear during the progress of any

part of the work, the Tenderer shall at his own expenses rectify such error, if called upon to the satisfaction of the Employer.

- c. The Tenderer shall further set out the works to the alternative positions at the site until one is finally approved and the rates quoted in his tender should include for this and no extra on this account will be entertained.

23. TENDERER IMMEDIATELY TO REMOVE ALL OFFENSIVE MATTERS:

All waste materials and other matters of any offensive nature shall be taken out once the works are completed. The Tenderer shall keep the site free from dangerous materials like industrial gases, welding machines and any such devices or material of toxic and poisonous nature & shall not carry within the site or building any material which are explosive in nature. Any such offensive materials which are essentially required in course of work shall be undertaken with due written permission of the Employer provided such materials are permissible under Law.

24. ACCESS :

- a. Any authorized representatives of the Employer shall at all reasonable times have free access to the works and / or to the workshops factories or other places where materials , or equipments are being fabricated or constructed for the work and also to any place where materials are lying or from where they are being obtained, and the Tenderer shall extend necessary facility to the Employer or their representatives for inspection examination and testing of the materials and workmanship.
- b. Except the representatives of the Employer no person shall be allowed at any time without the written permission of the Employer.
- c. The work shall be offered for inspection at every stage of the work and more specifically before painting, polishing and lamination.

25. MATERIALS, WORKMANSHIP, SAMPLES, TESTING OF MATERIALS :

- a. All the works specified and provided for in the specifications or which may be required to be done in order to perform and complete any part thereof shall be executed in the best and most workmanlike manner with materials of the best and approved quality of the respective kinds in accordance with the particulars contained in and implied by the specifications and as represented by the drawings or according to such other additional particulars, and instructions as may from time to time be given by the Employer during the execution of the work, and to his entire satisfaction.
- b. If required by the Employer the Tenderer shall have to carry out tests on materials and workmanship in approved material testing laboratories or as prescribed by the Employer at his own cost to prove that the materials etc. under test conform to relevant I.S. standards or as specified in the specifications. The necessary charges for sample material, transporting, testing etc. shall have to be borne by the Tenderer . No extra payment on this account should in any case be entertained.

- c. All materials required for the full performance of the work under the contract must be provided through proper channels and must include duties, taxes, octries and other charges if any and must be best of their kind available and the Tenderer must be entirely responsible for proper and efficient carrying out of the works. Samples of all the materials to be used must be submitted / displayed to the Employer when so directed by the Employer.
- d. Should the work be suspended by any reason, the Tenderer shall take all precautions necessary for the protection of work and at his own expenses shall make good any damages arising from any of these causes.

26. REMOVAL OF IMPROPER WORK :

- a. The Employer shall during the progress of the work have power to order in writing from time to time the removal, from the work site within such reasonable time or times as may be specified in the order, of any materials which in the opinion of the Employer are not in accordance with specification or instructions, the substitution or proper re-execution of any work executed with materials or workmanship not in accordance with drawings and specifications or instructions.
- b. In case the Tenderer refuses to comply with the order the Employer shall have the power to employ and pay other agencies to carry out the work and all expenses consequent thereon or incidental thereto as accepted by the Employer shall be borne by the Tenderer or may be deducted from any money due to or that may become due to the Tenderer .
- c. No certificate which may be given by the Bank shall relieve the Tenderer from his liability in respect of unsound work or bad materials.

27. SAFETY PRECAUTIONS :

The Tenderer shall follow all necessary safety precautions with respect to the work. All necessary safety equipments / gadgets shall be used by the workmen. The Tenderer shall comply and ensure the enforcement of rules and regulations relating to the safety precautions. The arrangements be made by the Tenderer shall be open for inspection by any statutory authorities.

28. TENDERER'S EMPLOYEES:

- a. The Tenderer shall employ technically qualified and competent supervisors for the work who shall be available (By turn) throughout the work and shall participate during site meetings and be available to take and comply with instructions of the Employer. The Tenderer shall employ in connection with the work persons having the appropriate skill or ability to perform their job efficiently. Any laborers supplied by the Tenderer to be engaged on the work on day work basis either wholly or partly under the direct order or control of the Employer or his representative shall be deemed to be a person employed by the Tenderer.
- b. CHILD LABOUR: No Labourer below the age of sixteen years and who is not an Indian national shall be employed on the work.

- c. **LABOUR LEGISLATION:** The Tenderer shall comply with the provisions of the payment of all legislation including the requirement of The payment of Wages Act, 1936, Minimum Wages Act, 1948, Employer's Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefits Act, 1961, and the Contract Labor (Regulation and Abolition) Act 1970, Apprentices act 1961, or the modifications thereof or any other laws relating thereto and the rules made there under from time to time. Report on PF & ESI paid to the employees on monthly basis has to be submitted to the employer.
- d. The Tenderer shall keep the Employer saved harmless and indemnified against claims if any of the workmen and all costs and expenses as may be incurred by the employer in connection with any claim that may be made by any workmen.
- e. The Tenderer shall arrange to provide first-aid treatment to the labourers engaged on the works. He shall within 24 hours of the occurrence of any accident at or about the site or in connection with execution of the works, report such accident to the Employer and also to the Competent Authority where such report is required by law.
- f. The Tenderer shall indemnify and keep indemnified the Employer against payments to be made under and for the observance of the laws aforesaid and the Tenderers' Labor Regulations. The laws aforesaid shall be deemed to be a part of this contract and any breach thereof shall be deemed to be a breach of this contract.
- g. **Compliance of Labour Regulations:** The Tenderer shall at his own expense arrange for all the safety provisions for the safety of all workers and employees directly or indirectly employed on the work by the Tenderer .
- h. The Tenderer shall be fully responsible for compliance at his own expense all the labor regulations and rules to be observed by him. The Tenderer shall fully indemnify the Employer against any action by the state and/or Central Government for any default or alleged default by the Tenderer , sub Tenderer or Employer of any of such rules and regulations. If, due to any default of the Tenderer or his sub-Tenderer s, the Employer has to incur any expenditure for compliance of the rules and regulations or for any other reason connected with such default, the Employer shall be entitled to recover from the Tenderer all such expenditure in full from any payment due to the Tenderer .

29. DISMISSAL OF WORKMEN :

The Tenderer shall on request of the Employer immediately dismiss from works any person employed thereon by him, who may in the opinion of the Employer be unsuitable or incompetent or who may misconduct himself. Such discharge shall not be the basis of any claim for compensation or damages against the Employer or any of their officer or employee.

30. ASSIGNMENT ::

The whole of the works included in the contract shall be executed by the Tenderer and the Tenderer shall not directly or indirectly transfer, assign or underlet the contract or any part, share or interest therein nor, change in constitution and no subletting shall relieve the Tenderer from the full and entire responsibility of the contract or from active superintendence of the work during their progress.

31. INJURY TO PERSONS AND DAMAGE TO PROPERTY - INSURANCE :

- a. The Tenderer shall be responsible for all injury to the work or workmen to persons, animals or things and for all damages to the structural and/or decorative part of property which may arise from the operations or neglect of himself or his employees, whether such injury or damage arise from carelessness, accident or any other cause whatsoever in any way connected with the carrying out of this contract.
- b. The clause shall be held to include interalia, any damages to buildings whether immediately adjacent or otherwise, and any damage to roads, streets, footpaths or ways as well as damages caused to the buildings and the works forming the subject of this contract by rain, wind or other inclemency of the weather.
- c. The Tenderer shall indemnify the employer and hold harmless in respect of all and any expenses arising from such injury or damages to persons or property as aforesaid and also in respect of any claim made in respect of injury or damage under any acts of compensation or damage consequent upon such claim.
- d. The Tenderer shall reinstate all damage of every sort mentioned in this clause, so as to deliver the whole of the contract works complete and perfect in every respect and so as to make good or otherwise satisfy all claims for damages to the property or third parties.
- e. The Tenderer shall effect the insurance necessary and indemnify the employer entirely from all responsibility in this respect. The insurance must be placed with a company approved by the employer and must be effected jointly in the name of the Tenderer and the employer and the policy lodged with the latter. The scope of insurance is to include loss or damage to the work and workmen due to carelessness, accident including fire, earthquake, floods, etc., damage or loss to the contract itself till this is made over a complete state. Insurance is compulsory and must be effected from the very initial stage. The Tenderer shall also be responsible for anything which may be excluded from damage to any property arising out of incidents, negligence or defective carrying out of this contract.
- f. The employer shall be at liberty and is hereby empowered to deduct the amount of any damages, compensations, costs, charges and expenses arising or occurring from or in respect of any such claim or damages from any sums due or to become due to the Tenderer .
- g. Unless otherwise instructed the Tenderer shall insure the works and keep them insured until the virtual completion of the contract against loss or damage by fire and/or earthquake, flood. The insurance must be placed with a company approved by the Employer, in the joint names of the Employer and the Tenderer for such amount and for any further sum if called to do so by the employer and lodge receipts of premiums paid with the employer within 21 days from the date of issue of letter of acceptance unless otherwise instructed.

- h. In default of the Tenderer insuring as provided above, the Employer on his behalf may so insure and may deduct the premiums paid from any money due, or which may become due to the Tenderer. The Tenderer shall as soon as the claim under the policy is settled or the work reinstated by the Insurance Company should they elect to do so, proceed with due diligence with the completion of the works in the same manner as though the fire has not occurred and in all respects under the conditions of the contract. The Tenderer in case of rebinding or reinstatement after fire shall be entitled to extension of time for completion as the Employer may deem fit.

32. ACCOUNTS RECEIPTS & VOUCHERS :

The Tenderer shall, upon the request of the Employer furnish them with all the invoices, accounts, receipts and other vouchers that they may require in connection with the works under this contract. If the Tenderer shall use materials less than what is required under the contract, the value of the difference in the quantity of the materials that was required to use and that actually used shall be deducted from his dues. The decision of the Employer shall be final and binding on the Tenderer as to the amount of materials the Tenderer is required to use for any work under this contract.

33. MEASUREMENT:

- a. Measurements of completed works shall be as per Bureau of Indian Standards code IS-1200 & its relevant parts.
- b. Before taking any measurement of any work, the Employer shall give reasonable notice to the Tenderer. If the Tenderer fails to attend at the measurements after such notice or fails to countersign or to record the difference within a week from the date of measurement in the manner required by the Employer then in any such event the measurements taken by the Employer or by the subordinate deputed by him as the case may be is final and binding on the Tenderer and the Tenderer shall have no right to dispute the same.
- c. The measurements particularly concealable in nature shall be jointly taken and recorded and such statement of measurement shall be enclosed along the bill or running bills.
- d. The works will be paid for as "measured work" on item rate basis i.e. on actual work done. All items of work described in the schedule of quantities are to be deemed and paid as complete works in all respects and details including preparatory and finishing works involved, directly, related to and reasonably detectable from the drawings, specifications and schedule of quantities and no further extra charges will be allowed in this connection. The work shall be strictly according to the design / dimensions given in the drawings. The payment will be restricted to the design dimensions and no payment will be made due to increase in thickness / depth / width. All the dismantling items shall be PREMEASURED and APPROVAL of the employer shall be sought before dismantling.

34. PAYMENTS:

- a. All bills shall be prepared by the Tenderer in the form agreed or furnished by the Employer based on the accepted measurements. A maximum of three bills are allowed during the currency of contract which includes the final bill. The minimum bill value shall be Rs.10,00,000.00. The interim bills shall be in proper forms must be duly accompanied by detailed measurements in support of the quantities of the work done and must show deductions for all previous payments.
- b. The Employer shall issue a certificate after due scrutiny of the Tenderer s' bill stating the amount due to the Tenderer from the Employer and the Tenderer shall be entitled to payment thereof, within the 30 days from the date of the receipt of the recommendations of the consultants on the interim bill. In case of delay due to some reasons in the processing of such bills for payment, an adhoc advance of 75% of the billed amount may be paid on the request of the Tenderer for the smooth progress of the work.
- c. The amount stated in an interim certificate shall be the total value of work properly executed and 75% of invoiced value of material brought to site for permanent incorporation into the work up to the date of the bill less the amount to be retained by the Employer as retention money vide clause 16 of these conditions and less installments previously paid under these conditions, provided that such certificate shall only include the value of said material and goods as and from such time as they are reasonably, properly and not prematurely brought to or placed adjacent to the work and then only if adequately protected against weather or other casualties.
- d. The Employer will deduct retention money as described in clause 16 of these conditions. The refund of retention money will be made as specified in the said clause.
- e. All interim payments accepted by the Tenderer shall be regarded as payments by way of advances against final payment only. These shall not preclude requiring of bad, unsound and imperfect or unskilled work to be rejected, removed, taken away and reconstructed or re- erected or be considered as an admission of the due performance of the contract or any part thereof in any respect or approving of any claim nor shall conclude, determined of affect in any way the power of the employer under these conditions for any of them as to the final settlement and adjustment of the accounts or otherwise or in any other way vary or affect the contract.
- f. All payments are subject to statutory deductions of Income Tax & its Surcharge, Sales tax deductions or any other statutory deductions as notified by respective State/Central Government/Authority and any such instructions conveyed from time to time. From the interim bills, the retention money as detailed elsewhere in this tender shall also be deducted.
- g. The final bill shall be submitted by the Tenderer within 1 (one) month from the date of completion of work or from the date of certification of virtual completion accepted by the employer. No further claims shall be made by the Tenderer after submission of the final bill.

- h. The final bill shall be accompanied by no claim certificate by consultant and a certificate of completion from the Employer. Payments of final bill shall be made after deduction of all previous payments and Retention Money as specified in clause 16 of these conditions, which sum shall be refunded after the completion of the Defects Liability Period after receiving the Employer certificate that the Tenderer has rectified all defects to the satisfaction of the Employer. The acceptance of payment of the final bill by the Tenderer would indicate that he will have no further claim in respect of the work executed.

35. VARIATION / DEVIATION :

- i. The Employer shall have power to make alteration in, omissions from, additions to or substitutions for the original specifications, drawings, designs and instructions that may appear to him to be necessary or advisable during the progress of the work, and the Tenderer shall be bound to carry out the works in accordance with any instructions given to him in writing signed by the employer. Such alterations, omissions, additions or substitution shall form part of the contract as if originally provided therein and any altered, additional or substituted work which the Tenderer may be directed to do in the manner specified above as part of the works, shall be carried out by the Tenderer on the same conditions in all respects including price on which he agreed to do the main work except as hereafter provided.
 - (a) No work which radically changes the original nature of the contract shall be ordered by the employer as a deviation.
 - (b) The price of all such additional items / non tendered items will be worked out on the basis of rates quoted for similar items in the contract wherever existing or on engineering rate analysis based on prevalent fair price of labour, material and other components as required.
- ii. The tendered rates, shall hold good for any increase or decrease in the tendered quantities up to variation of 25% and as stipulated elsewhere for legitimate completion of works as per original design or scope of work and on account of any modification or alteration suggested and where the variation is for the respective item is beyond 25%, the rate for the respective item may be reviewed on mutually agreed terms.
- iii. In the event of any deviation being ordered which in the opinion of the Tenderer changes the original nature of the Contract, he shall within fifteen days of having been so ordered bring this to the notice of the Employer with the reasons but nevertheless carry it out and the disagreement as to the nature of work and the rate to be paid therefore shall be resolved in accordance with Clause under caption "SETTLEMENT OF DISPUTES AND ARBITRATION".

36. SUBSTITUTION:

Should the Tenderer desire to substitute any materials and workmanship, he must obtain the approval of the Employer in writing for any such substitution well in advance. In respect of Materials whose makes are not specified in the tender, specific approval of the Employer has to be obtained in writing before their usage.

37. PREPARATORY WORK FOR UTILIZATION OF THE FACILITY AFTER COMPLETION:

- a. The whole of the work shall be thoroughly inspected by the Tenderer and deficiencies & defects, if any shall be set right. On completion of such inspection, the Tenderer shall inform the Employer that they have completed the work and it is ready for inspection.
- b. On completion the Tenderer shall clean all the area and its surroundings, equipments etc. and will leave the entire area clean and ready for immediate usage to the satisfaction of the Employer.

38. CLEARING SITE ON COMPLETION:

On completion of the works the Tenderer shall clear away and remove from the site all construction materials, plant & equipments, tools, surplus materials, scraps, rubbish and temporary works of every kind and leave the whole of the site and the works clean and in a workmanlike condition to the satisfaction of the Employer.

39. DEFECT AFTER COMPLETION (defect liability period):

The Unitised substation should be guaranteed against faulty design, materials manufacture and workmanship at least for a period of 12 months from the date of handing over of the system to the organization in perfect working condition. The guarantee should cover free replacement of defective parts, accessories, etc., and of whatever necessitated during the guarantee period. Items found defective during the guarantee period will be replaced by new one or repaired free of cost to the full satisfaction of the client. All parts supplied / replaced / fitted during the guarantee period shall not attract transport charges etc. If at any time during the guarantee period the Unitised substation is out of order for more than Seven days at a time, then the guarantee period will be extended by the period of break down.

The Tenderer shall make good at his own cost and to the satisfaction of the Employer all defects, or other faults which may appear within **12 months** after completion of the work(defect liability period). In default, the Employer may employ and pay other agency or persons to amend and make good such damages, losses and expenses consequent thereon or incidental thereto such expenses shall be made good and borne by the Tenderer and such damages, loss and expenses shall be recoverable from the payment due to the Tenderer and in the event of amount retained being insufficient, recover the balance from the Tenderer from the amount retained under clause No 16. together with any expenses the Employer may have incurred in connection therewith.

40. CONCEALED WORKS :

The Tenderer shall give due notice to the Employer wherever any work is to be buried or concealed in the building in the earth, flooring, walls or otherwise becoming inaccessible later on, in order that the work may be inspected and correct dimensions or measurements taken before such burial. In default whereof the same shall, in the opinion of the Employer be either opened up for measurement at the Tenderer s expenses or no payment may be made for such materials. Should any dispute or difference arise after the execution of any work as to measurements etc. or other matter which cannot be conveniently tested or checked, the notes of the employer shall be accepted as correct and binding on the Tenderer .

41. ESCALATION :

The rate quoted shall be firm throughout the tenure of the contract (including extension of time, if any granted) and will not be subject to any fluctuation due to increase in cost of materials, labor, sales tax, Octroi or any other reason.

42. IDLE LABOUR:

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

43. SUSPENSION OF WORKS :

If the Tenderer except on account of any legal restraint upon the Employer preventing the continuance of the work or in the opinion of the Employer shall neglect or fail to proceed with due diligence in the performance of his part of the contract or if he shall more than once make default, the Employer shall have the power to give notice in writing to the Tenderer requiring the work to be proceeded within a reasonable manner and with reasonable dispatch, such notice purport to be a notice under this clause.

After such notice shall have been given the Tenderer shall not be at liberty to remove from the site of the works or from any ground contiguous thereto any plant or materials to subsist from the date of such notice being given until the notice shall have been complied with. If the Tenderer fails to start the work within seven days after such notice has been given to proceed with the works as therein prescribed, the Employer may proceed as provided in **clause 44** (Termination of Contract by Employer).

44. TERMINATION OF CONTRACT BY EMPLOYER :

If the Tenderer being a company go into liquidation whether voluntary or compulsory or being a firm shall be dissolved or being an individual shall be adjudicated insolvent or shall make an assignment or a composition for the benefit of the greater part, in number or amount of his creditors or shall enter into a Deed or arrangement with his creditors, or if the Official Assignee in insolvency, or the Receiver of the Tenderer in insolvency, shall repudiate the contract, or if a Receiver of the Tenderer's firm appointed by the court shall be unable, within fourteen days after notice to him requiring him to do so, to show to the reasonable satisfaction of the employer that he is able to carry out and fulfill the contract, and if so required by the employer to give reasonable security therefore, or if the Tenderer shall suffer execution to be issued, or shall suffer any payment under this contract to be attached by or on behalf of and of the creditors of the Tenderer, or shall assign, charge or encumber this contract or any payments due or which may become due to the Tenderer, there under, or shall neglect or fail to observe and perform all or any of the acts matters of things by this contract, to be observed and performed by the Tenderer within three clear days after the notice shall have been given to the Tenderer in manner hereinafter mentioned requiring the Tenderer to observe or perform the same or shall use improper materials or workmanship in carrying on the works, or shall in the opinion of the employer not exercise such due diligence and make such due progress as would enable the work to be completed within due time agreed upon, and shall fail to proceed to the satisfaction of the employer after three clear days notice requiring the Tenderer so to do shall have been given to the Tenderer as hereinafter mentioned, or shall

abandon the contract, then and in any of the said cases, the Union may notwithstanding previous waiver determine the contract by a notice in writing to the effect as hereinafter mentioned, but without thereby effecting the powers of the employer of the obligations and liabilities of the Tenderer the whole of which shall continue in force as fully as if the contract, had not been so determined and as if the works subsequently executed had been executed by or on behalf of the Tenderer (without thereby creating any trust in favour of the Tenderer) further the employer or his agent, or servants, may enter upon and take possession of the work and all plants, tools, scaffolding, sheds, machinery, steam and other power, utensils and materials lying upon premises or the adjoining lands or roads and sell the same as his own property or may employ the same by means of his own servants and workmen in carrying on and completing the works or by employing any other Tenderers or other persons or person to complete the works, and the Tenderer shall not in any way interrupt or do any act, matter of thing to prevent or hinder such other Tenderers or other persons or person employed from completing and finishing or using the materials and plants for the works when the works shall be completed, or as soon thereafter as conveniently may be, the employer shall give notice in writing to the Tenderer to remove his surplus materials and plants and should the Tenderer fail to do so within a period of 14 days after receipt by him the employer may sell the same by Public Auction and shall give credit to the Tenderer for the amount so realized. Any expenses or losses incurred by the employer in getting the works carried out by other Tenderers shall be adjusted against the amount payable to the Tenderer by way of selling his tools and plants or due on account of work carried out by the Tenderer prior to engaging other Tenderers or against the Security Deposit.

45. SETTLEMENT OF DISPUTES AND ARBITRATION :

All disputes or differences of any kind whatsoever which shall at any time arise between the parties hereto touching or concerning the works or the execution or maintenance thereof of this contract or the rights touching or concerning the works or the execution of maintenance thereof of this contract or the construction remaining operation or effect thereof or to the rights or liabilities of the parties or arising out of or in relation thereto whether during or after determination foreclosure or breach of the contract (other than those in respect of which the decision of any person is by the contract expressed to be final and binding) shall after written notice by either party to the contract to the other of them and to the Employer hereinafter mentioned be referred for adjudication to a sole Arbitrator to be appointed as hereinafter provided.

For the purpose of appointing the sole arbitrator referred to above, the employer will send within thirty days of receipt of the notice, to the Tenderer a panel of three names of persons who shall be presently unconnected with the organization for which the work is executed.

The Tenderer shall on receipt of the names as aforesaid, select any one of the persons name to be appointed as a sole Arbitrator and communicate his name to the employer within thirty days of receipt of the names. The employer shall thereupon without any delay appoint the said person as the sole Arbitrator. If the Tenderer fails to communicate such selection as provided above within the period specified, the competent authority shall make the selection and appoint the selected person as the Sole Arbitrator.

If the employer fails to send to the Tenderer, the panel of three names as aforesaid within the period specified the Tenderer shall send to the employer a panel of three names of persons who shall all be unconnected with either party. The employer shall on receipt of the named as aforesaid select any one of the person's names and appoint him as the Sole Arbitrator. If the Employer fails to select the person and appoint him as the Sole Arbitrator within thirty days of receipt of the panel and inform the Tenderer accordingly, the Tenderer shall be entitled to appoint one of the persons from the panel as the Sole Arbitrator and communicate his name to the employer.

If the Arbitrator so appointed is unable or unwilling to act or resigns his appointment or vacates his office due to any reason whatsoever another Sole Arbitrator shall be appointed as aforesaid.

The work under the contract shall, however, continue during the arbitration proceedings and no payment due or payable to the Tenderer shall be withheld on account of such proceedings.

The arbitrator shall be deemed to have entered on the reference on the date he issued notice to both the parties fixing the date of the first hearing.

The arbitrator may from time to time with the consent of the parties enlarge the time for making and publishing the award.

The arbitrator shall give a separate award in respect of each dispute or differences referred to him. The arbitrator shall decide each dispute in accordance with the terms of the contract and give a reasoned award. The venue of arbitration shall be such place as may be fixed by the arbitrator in his sole discretion or in **Ghaziabad, UP** only.

The fees, if any, of the arbitrator shall if required to be paid before the award is made and published be paid half and half by each of the parties. The cost of the reference and of the award including the fees, if any, of the Arbitrator who may direct to and by whom and in what manner, such costs or any part thereof shall be paid and may fix or settle and amount of costs to be so paid.

The award of the arbitrator shall be final and binding on both the parties.

Subject to aforesaid the provisions of the Indian Arbitration Act, 1992 or any statutory modification or re-enactment thereof and the rules made there under and for the time being in force shall apply to the arbitration proceeding under this clause.

The employer and the Tenderer hereby also agree that arbitration under clause shall be a condition precedent to any right to action under the contract with regard to the matters hereby expressly agreed to be so referred to arbitration.

46. CO - ORDINATION OF WORKS:

The Tenderer shall execute the works in co-ordination with the other agencies like air-conditioning, electrical etc., involved in the works. The work site shall be neatly cleaned as and when necessary so that the works of other agencies can be carried out. Failure on part of the

Tenderer to clean the work site will empower the employer to engage other agencies and recover the cost from the Tenderer.

47. ELECTRICAL POWER:

The Tenderer have to make his own arrangements towards the electrical power required for the works. The Tenderer shall engage a licensed electrician to carryout and maintain his electrical system. The work shall not be stopped on account of power failure.

48. The work should be carried out with full co-ordination / co-operation of occupants in the Office without damaging any permanent structures or furniture belonging to them. If any damage occurs, the cost of same will have to be reimbursed by the Tenderer

49. The tenderer shall quote under Part B – Price Bid towards annual maintenance contract for a period of two years for the Unitised substation after the defect liability period of 12 Month. This amount under Part B shall be taken into consideration for tender evaluation purposes. The tenderer should also produce Bank guarantee for a value of 10% of the charges quoted under Annual maintenance contract before submission of final bill for the capital work.

50. The Contractor shall not assign the Contract. He shall not sublet any portion of the Contract except with the written consent of the Bank. In case of breach of these conditions, the bank may serve a notice in writing on the contractor rescinding the Contract whereupon the security deposit shall stand forfeited to the Bank, without prejudice to his other remedies against the contractor.

51. The Contractor must bear in mind that all the work shall be carried out strictly in accordance with the specifications and also in compliance of the requirement of the legal public authorities and to the requirements of the local electricity authority and CEA / PCB and no deviation on any account will be permitted. Statutory fee

52. *The employer will pay only the statutory / requisite fee to the Government authority and no other charges what so ever will be paid by employer.* However the contractor shall have to liaison with Electricity safety department (UP) and have to submit the approval from for permission to run the unitized substation.

53. Tenderer should also enclose a letter from the manufacturer of engine indicating the name of their authorised service agent at **DELHI ,NCR** , through whom the periodical service for the 250 KVA Unitized Substation will be attended. Prescribed standard rates for inspection labour service contract (all spares will be supplied by the Bank other than under warrantee/guarantee items) should also be mentioned by the manufacturer.

54. The Contractor has to obtain approval from local / Regional Pollution Control board (if required and Permission to run the Unitized Substation and submits necessary document in this regard. The Contractor shall strictly comply with the provision of safety code annexed hereto.

55. The tenderers shall quote their charges for the above **Annual maintenance service contracts** of the Unitised substation which will be applicable after the expiry of the warranty period, the contract amount shall be paid on half yearly basis on rendering satisfactory

service. This service contract shall be renewed annually. This being an emergency system, any fault in the system shall be rectified as per the rectification time given below failing which penalty shall be applied.

(a)	Any defects resulting in total failure of the system	2 hours	Rs.1000/- per hour.
(b)	Any defects in independent devices, components, cables which may not result in total failure of the system	24 hours	Rs.500/- per

Safety Code

1. First aid appliances including adequate supply of sterilized dressings and cotton wool shall be provided in a readily accessible place.
2. An injured person shall be taken to a public hospital without loss of time, in cases where the injury necessitates hospitalization.
3. Suitable and strong scaffolds should be provided for workmen for all work that cannot safely be done from ground.
4. No portable single ladder shall be over 8 meters in length. The width between the side rails shall not be less than 30 cm (clear) and the distance between two adjacent rungs shall not be more than 30 cm. When a ladder is used an extra labour shall be engaged for holding the ladder.
5. The excavated material shall not be placed within 1.5 meters of the edge of the trench or half of the depth of trench, whichever is more. All trenches and excavations shall be provided with necessary fencing and lighting.
6. Every opening in the floor of a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing; minimum height shall be one metre.
7. No floor, roof or other part of the structure shall be so overloaded with debris of materials as to render it unsafe.
8. Workers employed on mixing and handling material such as asphalt, cement mortar or concrete and lime mortar shall be provided with protective footwear and rubber hand-gloves.
9. Those engaged in welding works shall be provided with welder's protective eye-shields and gloves.
10. i) No paint containing lead or lead products shall be used except in the forms of paste or readymade paint.

- ii) Suitable face masks shall be supplied for use by the workers when the paint is applied in the form of spray or surface having lead paint dry rubbed and scrapped.
11. Overalls shall be supplied by the Contractor to the painters and adequate facilities shall be provided to enable the working painters to wash during the period of cessation of work.
12. Hoisting machines and tackle used in the works, including their attachments, anchorage and support shall be in perfect condition.
13. The ropes used in hoisting or lowering material or a means of suspension shall be of durable quality and adequate strength and free from defects.

TECHNICAL SPECIFICATIONS FOR UNITIZED SUBSTATION-250 KVA**1.0 CODE & STANDARDS:**

- 1.1. All equipment and material shall be designed manufactured and tested in accordance with the latest applicable Indian Standard/ IEC standard.
- 1.2. Equipment and material confirming to any other standard which ensures equal or better quality may be accepted. In such case copies of English version of the standard adopted shall be submitted.
- 1.3. The electrical installation shall met the requirement of Indian Electricity Rules as amended upto date relevant IS code of practice and Indian electricity act.
- 1.4. The Unitized Sub-station offered shall in general comply with the latest issues including amendments of the following standards but not restricted to it.

Title	Indian & IEC Standards
High Voltage Low Voltage Pre-Fabricated Substation	IEC:62271-202
11 kV, 22 kV & 33kV Switchgear cubicles	IS:13118, IS:3427, IEC:60694. IEC:60298
Ring main unit 11 kv grade	IS:9920, IEC:60265
Code of practice for selection, installation and maintenance of Switchgear	IS:10118
Distribution Transformer	IS: 2026
Indian Electricity Rules	1956
Indian Electricity Act	1910

2.0 DESIGN CRITERIA

- 2.1 250 KVA Unitized Sub-station shall consist of **11kV SF6 Insulated unitized switchgear with SF6 Circuit Breaker as protection to transformer + Transformer + L.T. Switchgear** with all connection accessories, fitting & auxiliary equipment in an pre-fabricated Enclosure to supply Low-voltage energy from high-voltage system as detailed in this specification. The complete unit shall be installed on a substation plinth (base) as **Outdoor substation**. 11kV Load Break Cable Switches controls incoming-outgoing feeder cables of the 11KV ring/ radial distribution system. The SF6 Circuit Breaker shall be used to control and isolate the 11kV/ 433V Distribution transformer. The transformer's L.T. side shall be connected to L.T. switchgear by means of Aluminum busbar. The connection cables to consumer shall be taken out from the L.T. switchgear.
- 2.2 The pre-fabricated unitized substation shall be designed for
 - a) Compactness,
 - b) Fast installation,
 - c) Maintenance free operation,
 - d) Safety for worker/ operator & public.
- 2.3 The Switchgear and component thereof shall be capable of withstanding the mechanical and thermal stresses of short circuit listed in ratings and requirements clause without any damage or deterioration of the materials.

- 2.4 For continues operation at specified ratings temperature rise of the various switchgear components shall be limited to permissible values stipulated in the relevant standard and/ or this specification.

2.5 Service Conditions:

The equipment offered shall be suitable for continuous satisfactory operation in tropical area of Installation.

The Enclosure consisting of High Voltage switchgear-control gear, Low Voltage switchgear-control gear & Transformer of the Unitized substation shall be designed to be used under **normal outdoor service condition**. The enclosure should take minimum space for the installation including the space required for approaching various doors & equipment inside. The enclosure construction shall be such that it fully protects ingress of rain water, dust & rusting.

3.0 SPECIFIC REQUIREMENT

The main components of a prefabricated-unitized substation are Transformer, High-voltage switchgear-control gear, Low-voltage switchgear-control gear, corresponding interconnections (cable, bus bars) & auxiliary equipment. The components shall be enclosed, by either common enclosure or by an assembly of enclosure. All the components shall comply with their relevant IS/ IEC standards.

3.1.1 Ratings:

Description	Unit	Value
Rated Voltage/ Operating Voltage	kV rms	11
Rated frequency & Number of phases	Hz & nos.	50 & 3
Rated maximum power of substation	kVA	Upto 1600 KVA Dry Cast Resin Transformer
Rated Ingress protection class of Enclosure	IP:	IP: 54 for LT Switchgear & HT Switchgear compartments and IP-34 for Transformer compartment.
HV Network & Busbar		
RMU		One WAY (1No. Breaker)
Rated current	Amp	630A for 11kV
Rated short time withstand current	kA rms/ 3secs	21 for 11 kV
LV Network		
LV Incomer: 4P ACB/ 4P MCCB of Amp rating and fault withstand capacity as required or Incomer 4P MCCB/ 4P ACB, aluminum bus bars and outgoings 4P MCCB's as required.		

3.2 OUTDOOR ENCLOSURE:

- 3.2.1 The enclosure shall be made of 2.0 mm thickness Galvanized Sheet Steel tropicalised to meet Indian weather conditions including all the partition sheets & doors.
- 3.2.2 The base of the enclosure shall be of 4.0 mm thickness Hot Dip Galvanized Sheet Steel to ensure rigidity for easy transport & installation. The entire Package Substation shall be Factory Assemble & Factory Fitted.
- 3.2.3 The structure of the substation shall be capable of supporting the gross weight of all the equipment & the roof of the substation compartment shall be designed to support adequate loads. In case of relocation of the Package Substation, the entire substation should be capable of getting lifted and placed as a Single Unit without dismantling of any of the major equipments inside.
- 3.2.4 There shall be proper/ adequate ventilation inside the enclosure so that hot air inside enclosure are directed out by help of duct. Louvers apertures shall be provided so that there is circulation of natural air inside the enclosure. The Package Substation should be designed & engineering to have natural cooling & ventilation instead of forced cooling/ ventilation as the same would derate the Transformer further and shall be an additional load on the Transformer.
- 3.2.5 The complete design shall be compartmentalized.
- 3.2.6 **Public Nuisance Protection:** There shall be preferably no bolting arrangement on the doors and sides (periphery) so that there is no access of water, dust inside. This also ensures that the unit is well protected from outside from public nuisance owing to its being located in a crowded and compact places.
- 3.2.7 **Interconnection:** The connection of HT switchgear to Transformer shall be with the help of suitable size of cables from Transformer to LT switchgear with the help of suitable size of Aluminum busbars.
- 3.2.8 **Internal Fault:** Failure within the unitized substation due either to a defect, an exceptional service condition or mal-operation may initiate an internal arc. Such an event may lead to the risk of injury, if persons are present. It is desirable that the unit shall be tested for Internal Arc fault test to the tune of atleast 16KA for 1 second adhering to as per latest IEC 61330.
- 3.2.9 **Covers & Doors:** Covers & doors are part of the enclosure. When they are closed, they shall provide the degree of protection specified for the enclosure. All covers, doors or roof shall be provided with locking facility or it shall not be possible to open or remove them before doors used for normal operation have been opened. The doors shall open outward at an angle of at least 90° & be equipped with a device able to maintain them in an open position. The top cover shall be slightly inclined so that there is no accumulation of water during rainy season or otherwise. Proper padlocking facility shall be provided for doors of each compartment.
- 3.2.10 **Earthing:** All metallic components shall be earthed to a common earthing point. It shall be terminated by an adequate terminal intended for connection to the earth system of the installation, by way of flexible jumpers/ strips & Lug arrangement. The continuity of the earth system shall be ensured taking into account the thermal & mechanical stresses caused by the current it may have to carry. The components to be connected to the earth system shall include :

- a) The enclosure of Unitized/ prefabricated substation,
- b) The enclosure of High voltage switchgear & control gear from the terminal provided for the purpose,
- c) The metal screen & the high voltage cable earth conductor,
- d) The transformer tank or metal frame of transformer,
- e) The frame &/or enclosure of low voltage switchgear,

3.2.11 **Internal Illumination:** There shall be arrangement for internal lighting activated by associated switch on doors for HV, Transformer & LV compartments separately.

3.2.12 **Labels:** Labels for warning, manufacturer's operating instructions etc. & those according to local standards & regulations shall be pasted/ provided inside and shall be durable & clearly legible.

3.2.13 **Painting and Fabrication process :**

- a) The paints shall be carefully selected to withstand tropical heat rain. The paint shall not scale off or crinkle or be removed by abrasion due to normal handling. For this purpose powder coating shall be used.
- b) Special care shall be taken by the manufacturer to ensure against rusting of nuts, bolts and fittings during operation. All bushings and current carrying parts shall be cleaned properly after final painting.
- c) The fabrication process shall ensure that there are no sharp edges on the GI sheets used.

3.2.14 **Enclosure GTP:**

1)	Ambient Temperature	40° C
2)	Type of Ventilation for a) Normal Condition b) Hot Condition	- Natural - Natural
3)	Compartmentalized	Yes
4)	Rated temperature enclosure class	10
5)	Degree of protection for external enclosure	IP34 Transformer Compartment. IP54 MV & LV Compartment
6)	Applicable Standard	IEC 62271/ 61330
7)	Enclosure material	Galvanized sheet Steel
8)	Thickness of sheet (GI only)	2mm for enclosure. 4mm for PSS Base.

Note: No capacity de-ration of equipment/ components upto 50°C ambient temperature.

3.3 11kV Switchgear

- 3.1 Non-extensible SF6 Insulated Compact Switchgear as required shall consist of following items:
- 3.2 Load Break Cable Switch with integral earth switch having full making capacity shall be used for Incoming cables.
- 3.3 SF6 Circuit Breaker/ Vacuum Circuit Breaker shall be used for distribution network of HT switchgear. Circuit Breaker complete with operating mechanism, self powered, static type O/C, E/F protection relay with associated Current Transformers shall be used for control and protection of Transformer. An integral cable earthing switch with full making capacity shall be provided.
- 3.4 The above Load Break Cable Switch, SF6 circuit breaker/ Vacuum Circuit Breaker, Bus bars should be mounted inside a sealed for life, cast resin/ stainless steel tank. The operating mechanism of the switches and breakers shall be outside the SF6 tank and accessible from front. The tank should be filled with SF6 gas at an adequate pressure. The degree of protection for gas tank should be IP67. There shall be provision for filling the SF6 gas at site. Moreover the Cast Resin/ Stainless Steel Gas Tank shall confirm to the sealed pressure system as per IEC and ensure the gas leakage to 0.1 % per year as per IEC. Tank shall be robotically melded. In case of vacuum circuit breaker, it shall be of compact design.
- 3.5 The SF6 Circuit Breaker or Vacuum Circuit Breaker is required to control 11 kV/433 volts distribution Transformer of rating up to 2000 KVA and relay settings and Current Transformers shall be selected accordingly.
- 3.6 **General Finish:** Totally enclosed, metal enclosed, vermin and dust proof suitable for tropical climate use as detailed in the specification.
- 3.7 **Ratings:** The bus bars shall have continuous rating of 630 Amps. The isolator shall have a continuous rating of 630 Amps. SF6 Circuit Breaker or Vacuum Circuit Breaker shall have a continuous rating of 200 Amps. in accordance with relevant IS/ IEC standard
- 3.8 **Breaking & Making Capacity:** The Load Break Cable Switches shall be capable for breaking rated full load current. The same along with its earthing switch shall also be suitable for full making capacity of the system as specified. The complete switchgear shall be suitable for breaking capacity of 21kA symmetrical at 11000 volts three phase for 11kV system.
- 3.9 **Busbar:** Switchgear shall be complete with all connection, bus-bars etc. Copper busbars continuous rating shall be 630 Amps. The busbars should be fully encapsulated by SF6 gas inside the tank.
- 3.10 **Remote Operation:** Provision shall be there for remote operation of the switchgear's Isolator & Breaker shall be possible using Motors fitted to the operating mechanism at a latter date. It shall be possible to fit the motors either directly in manufacturing plant or on site as & when required. Installation on site shall be possible
- 3.11 **Protection:** The SF6 circuit breaker/ Vacuum Circuit Breaker shall be fitted with static type self powered relay inside the front cover to avoid any tampering. The

same shall be used in conjunction with suitable CT's and Tripping Coil for fault tripping of the Circuit Breakers. CT's shall be mounted on bushing of breaker. CT's mounted on cable inside cable compartment are not acceptable.

- 3.12 Cable Termination:** Each Cable compartment shall be provided with three bushings of adequate sizes to terminate the incoming outgoing 11kV, 3 Core cables as the case may be. There shall be enough height from the base of the mounted switchgear so that the cables can be bent and taken vertically up to the bushings. The Cable termination shall be done by Heat shrinkable Termination method so that adequate clearances shall be maintained between phases for Termination. Access to all the cables should be possible from the front of RMU. Cable Termination boots shall be supplied by the switchgear manufacturer.

- 3.13 Earthing of the main circuit: The moving contacts of the earthing switch shall be visible in the closed position through transparent covers.**

Locking Arrangement: Suitable padlocking arrangements shall be provided as stated below:

- a) Circuit Breaker manual operating handle in the "OFF" position.
- b) Each feeder Panel operating handle in 'Closed' 'Open' or 'Earth' position.
- c) Each isolator operating handle in 'Closed', 'Open', or 'Earth' position.

3.4 Ratings:

Non-Extensible radial/ ring compact switchgear with SF6 breaker/ Vacuum Circuit Breaker

3.4.1 11kV Switchgear Data

a)	Service	Indoor
b)	Type	Metal clad
c)	Number of phases	3
d)	Voltage	11000V
e)	Rated Frequency	50 Hz
f)	Rated Current	630 Amp (isolator)
g)	Short Circuit rating	
	i) Breaking	21kA rms for Breaker
	ii) Short time withstand for 3 Sec.	21 kA rms
	iii) Rated S/c making	62.5 kA peak for Breaker
h)	Rated insulation level kV rms	28 kV
i)	Rated Level kV impulse	75 kV
j)	System earthing	Solidly earthed at substation

3.4.2 Breaker

a)	Type	SF6 Breaker/ Vacuum Circuit Breaker in SF6 tank
b)	Rated voltage	11kV
c)	Breaking current	
	i) Load breaking	21 KA rms.
d)	Making current	62.5 KA peak
e)	Rated current	630 Amps.
f)	No. of poles	3

- | | | |
|----|----------------------|---|
| g) | Operating mechanism. | Trip free & free handle type with mechanically operated indication & pad locking. |
|----|----------------------|---|

3.4.3 Isolators

- | | | |
|----|-------------------------|--|
| a) | Type | Load breaking and fault making in SF6 tank |
| b) | Rated current | 630 Amps. |
| d) | Rated breaking capacity | 630 Amps. |
| e) | Fault making capacity | 62.5 KA peak |
| f) | No. of poles | 3 |
| g) | Operating mechanism | Operating handle with ON, OFF, Earth positions with arrangement for padlocking in each position. |

3.4.4 Busbars:

- | | | |
|----|---------------|---------------|
| a) | Material | Copper |
| b) | Type | SF6 insulated |
| c) | Rated Current | 630 Amps |

3.5 Isolator:

- 3.5.1 The Isolators offered shall conform to IS: 4710/ 9920 as amended to date. The isolator shall be triple pole, spring assisted, hand operated, non-automatic type with quick break contacts. The operating handle shall have three positions 'ON', 'OFF' and 'EARTH' which shall be clearly marked with suitable arrangement to padlock in any position. A safety arrangement for locking shall be provided by which the isolator operation shall be prevented from 'ON' position to 'EARTH' position or vice versa.

3.6 Switchgear:

- 3.6.1 Sealed for life, the enclosure shall meet the "sealed pressure system" criteria in accordance with IEC: 298 (a system for which no handling of gas is required through out service life of approximate 30 years.) There shall be no requirement to 'top up' the SF6 gas. In addition, manufacturer shall confirm that maximum leakage rate is lower than 0.1% per year. It shall provide full insulation, making the switchgear insensitive to the environment. Thus assembled, the active parts of the switchgear unit shall be maintenance free.
- 3.6.2 The switchgear & switchboard shall be designed so that the position of different devices is visible to the operator on the front of the switchboard & operations are visible as well. The switchboard shall be designed so as to prevent access to all live parts during operation without the use of tools.
- 3.6.3 RMU should be tested for internal arc fault test.

3.6.4 Circuit Breaker:

The Unit shall consist Tee-off spring assisted, three pole SF6 breaker/ Vacuum circuit breaker, with integral fault making/ dead breaking earth switch. The function shall be naturally interlocked to prevent the main & earth switch from being switched 'ON' at the same time & the circuit breaker not allowed to trip in 'Earth On' position. The selection of the main/earth switch lever on the panel, which is allowed to move

only if the main or earth switches in the off position. The lever shall be able to pad locked in either the main or earth position.

- 3.6.5 The manual operation of the circuit breaker shall not have an effect on the trip spring. This should only be discharged under a fault (electrical) trip condition, the following manual reset operation should recharge the trip spring & reset the circuit breaker mechanism in 'main off' position.

3.6.6 Protection:

Protection Relays: The Circuit breaker shall be fitted with static type self powered relay inside the front cover to avoid any tampering.

3.7 Transformer

- 3.7.1 11kV/ 433 Volts distribution transformer shall be a part of packaged substation which will be housed in the enclosure.

The transformers shall be installed in hot, humid tropical atmosphere. All equipment accessories and wiring shall be provided with tropical finish to prevent fungus growth.

The transformers shall be capable of continuous operation of rated output under the operating conditions of voltage and frequency variations as per statutory limits governed by relevant Indian Standard and Indian Electricity Rules, 1956/ IEC with latest amendments in force.

Requirement: 11000/ 433 Volt DRY (CAST RESIN), upto 2000KVA Transformer double wound, core type suitable for packaged substation housed in a enclosure.

- 3.7.2 **Voltage Ratio:** No load voltage 11000/ 433 Volts within tolerance as stipulated in IS: 2026.

- 3.7.3 Insulating material shall be of proven design. The insulating materials shall be **Class "H" for Dry Cast Resin.**

- 3.7.4 **Rating:** The transformer shall have a continuous rating as specified at any of the specified tapping position and with the maximum temperature rise specified. The rated KVA shall be the product of the rated voltage in kV, the corresponding rated current and the phase factor 1.73. When the transformer is operated with the rated primary voltage applied to the terminals of the primary winding, the apparent power (kVA) at the terminals of the secondary winding, when carrying the rated secondary current differs from rated kVA by an amount corresponding to the regulation of the transformer and is the product of the actual secondary voltage, the rated secondary current and phase factor 1.73.

- 3.7.5 **Temperature Rise:** The maximum temperature rise at the specified maximum continuous output shall not exceed 35°C by thermometer in the hottest portion of the oil or 45°C measured by resistance of winding above ambient temperature of 50°C.

- 3.7.6 **Type of Load:** The transformer shall be suitable for carrying load within temperature rise indicated in the Indian Standard specification IS: 6600 'Guide for loading of oil immersed Transformer'.

- 3.7.7 Overloads:** The transformers shall be suitable for carrying overload within temperature rise indicated in IS: 6600 'Guide for Loading of oil immersed Transformer'.
- 3.7.8 Connections:** H.V. Delta and L.V Star connected with neutral brought out on the secondary side for connection to earth; Vector group DYn11 of IS: 2026.
- 3.7.9 Tapping:** Each transformer shall be provided with **Rotary type tap Switch** so as to provided for a voltage adjustment on H.V. from **+5% to -5%(In steps of 2.5%)** of rated voltage of 11000 Volts in 4 equal steps (5 position) to obtain rated voltage of 433 volts on LV side.
- 3.7.10 Transformer Losses:** Less than or as per ECBC norms.

List of Fittings:

- 1) OTI with alarm & trip contact for oil type transformer only
- 2) WTI with alarm & trip contact.
- 3) Buchholz Relay for oil type transformer only.

3.8 LT SYSTEM

LT compartment shall be suitable to house following equipment,
Bus bar connection from transformer to LT ACB/ MCCB
Bus bars and outgoing MCCB's if called for in the schedule of quantities.

The design should comply for the following standards.

- 1) IEC-439-1, 1992 Low voltage Switch gear and Control gear assemblies Part-I, type tested and partially type tested assemblies.
- 2) IEC-947-1, 1998 Low voltage Switch gear and Control gear Part-I general rules.
- 3) IEC-1180-1, 1992 High voltage test techniques for low voltage equipment Part-I definition test and Procedure requirement
- 4) IEC-529, 1989 Degree of protection provided by enclosures (IP code)

EQUIPMENT SPECIFICATION

3.8.1. Air circuit breaker (ACB)

These shall be fixed type with manually operated mechanism. The short circuit mechanism and breaking capacity as shall be supported by test certificate. The test certificates should be from CPRI/ any Govt. approved recognized test house/ laboratory.

The circuit breaker shall be fitted with CT operated thermal overload and short circuit releases devices for suitable current rating.

- a) Overload releases should be settable from 50% to 100% of the rated current I_n .
- b) Ambient temperature compensated type and there should not be de-rating of ACB current carrying capacity at 50°C. The testing of ACB for the temperature rise shall

be carried out by the manufacturer as per the prevailing, IS/ IEC or any other international standards.

- c) ACB shall be provided with overload and short circuit release. Short circuit release should have settable value as required with an adjustable times having setting range of 40 – 460 m seconds, to have a proper co-ordination with short circuit release of outgoing MCCBs.
- 1) 3 phase, 4 wire, neutral earthed having link arrangement.
 - 2) Rated current thermal current – as required
 - 3) Service voltage – 415 volts
 - 4) No. of break/ pole – one
 - 5) Frequency – 50 c / s
 - 6) Rated insulation voltage – 1000 volts
 - 7) Rated short circuit breaking capacity
Rated services S/C breaking capacity Ics (rms) – 50kA
Rated ultimate S/C breaking capacity Icu (rms) – 50kA
 - 8) Break Time – less than 40ms
 - 9) S/C making capacity 1cm (peak) – 105kA
 - 10) Rated short time withstands current – Icw 50kA for 1 sec.
 - 11) Suitable for outdoor installation.
 - 12) It shall conform to IS 13947/ pt.2/ 1993 with latest amendment, if any.
 - 13) Performance category – Utilization category – B.
 - 14) The status of open and close shall be clearly visible.
 - 15) The trip indication separated for overload and individual phase wise trip indication for short circuit to be provided.
 - 16) The ACB shall have the provision to lock the operating mechanism in off position.
 - 17) The operating mechanism should be form front and the compartment should have the degree of protection IP – 54.
 - 18) Separator shall be provided between all phases inside. ACB enclosed to prevent travel of arc during short circuit.
 - 19) The CT's mounted for thermal overload release shall have secondary winding inaccessible including tripping mechanism of O/L and magnetic releases to avoid tampering CT's should also have provision of separators.
 - 20) Two nos. earthing bolts for propose of earthing of ACB may also be provided & suitable for G.I stay wire of size 7/ 10 SWG.

- 21) The bus bar size shall be confirming to relevant IS and the neutral bus bar shall be of same wire of size as phase bus bar and should be suitable for connecting neutral.
- 22) The ACB shall be tested in accordance with the provision of IS: 13947–Part I or relevant IEC

3.8.2 Moulded case circuit breaker (MCCB)

The rating for MCCB is up to 630 amps, with TMD fixed type release.

Connection between transformer LT terminal to ACB and MCCB shall be through aluminum bus bars, outgoing from MCCB shall be suitable for 3 ½ core XLPE cable. The 11 kV side of the transformer shall have arrangement for connecting 11 kV cable. The LT bus should be suitability rated.

3.8.3. Interconnecting bus bar

Bus bar shall be of high conductivity aluminum (E91E) supported on insulators made of non-hygroscopic, non-inflammable material with tracking index equal to or more than that defined in BIS. The main bus bars shall have uniform current ratings throughout their length as specified in data sheet/ job specification. The current rating of the neutral shall be half that of the phase busbars. Removable neutral links shall be provided on feeders to permit isolation of the neutral bus bar.

Only zinc passivated or cadmium plated high tensile strength steel bolts, nuts and washers shall be used for all bus bar, joints and supports.

The hot spot temperature of bus bars including joints at design ambient temperature shall not exceed 95°C for normal operating conditions.

The current rating of the bus bars shall be as required for design ambient temperature at site conditions and for being inside the cubicle at fully loaded condition. The vendor shall suitably de-rate the nominal rating to suit the above condition.

Minimum clearance between live parts, between live parts/ neutral to earth shall be 19mm. However clearances between terminals at components shall be as per applicable individual standard for components.

Interconnections between the main bus bars and individual units shall be made using vertical/ horizontal aluminum bus bars of adequate rating.

3.8.4. HT & LT metering:

Shall be as per schedule of quantities

4.0 Unitized Substation – Configuration

HV Side	Transformer	LV Side
Options	Options	Options

3 Way RMU Comprising: Two ON load break SF 6 insulated switches and a SF 6 circuit breaker or a vacuum circuit breaker for transformer	Cast Resin Dry Type Transformer	4P ACB
2 Way RADIAL Comprising: One ON load break SF 6 Insulated switch and a SF 6 circuit breaker or a vacuum circuit breaker for transformer	OR	OR
1 Way RADIAL Comprising: A SF 6 circuit breaker or a vacuum circuit breaker for transformer	Vacuum Impregnated Dry Type Transformer (VPI, Dry Type)	4P MCCB
	OR	OR
	Hermetically sealed oil type (ON) transformer	4P ACB or 4P MCCB as incomer, 4P AL-Bus bars & 3P/4P MCCB out going feeders (LT Distribution Panel design)

5.0 VOLTAGE CONFIGURATIONS

- a. 11 kV/ 433 V

6.0 TYPE TESTS

- a. 11 kV/ 433 V Unitized substations must be type tested for 21 kA for 3 Sec.

LIST OF APPROVED MAKE :-

1. ABB
2. SCHNEIDER
3. SIEMENS
4. CROMPTON

BANK GUARANTEE FORMAT TOWARDS EMD

The Indian Bank,
Zonal Office
C-69, RDC, Rajnagar District Center,
Ghaziabad, UP

Dear Sirs,

WHEREAS, THE INDIAN BANK, having its **Zonal Office at C-69, RDC, Rajnagar District Center, Ghaziabad, UP**, (hereinafter called “**the Employer**”) have issued bid documents for Supply, Installation, Testing and Commissioning of 250 KVA Unitised Substation for **Indian Bank building at**

1. Plot No.:E-16B /1,Sector-30,Noida,UP -1No
2. Plot No.: D-37/2,Sector-50,Noida,UP-1No
3. Plot No.:D-211/,Sector 61 Noida,UP- 1No.

and whereas _____ is the contractor for the aforesaid work (hereafter called “**the Contractor**”).

AND WHEREAS under the terms and conditions of the said bid documents, the Contractor is required and has undertaken to furnish a Bank Guarantee of **Rs. (Rupees)** as Earnest Money Deposit as contained in the said tender document.

We, _____, having registered office at _____ and branch office at _____ (hereinafter called “**the Bank**”) hereby unconditionally and irrevocably undertake to the Employer immediately upon receipt of the first written demand such amount or amounts as may be demanded by the Employer from us under this Guarantee not exceeding a sum of **Rs..... (Rupees)** in aggregate without demur or reference to the Contractor and agree that the Employer’s demand shall be final and binding on the Bank under all circumstances.

We hereby affirm that we are the Guarantor and responsible to you on behalf of the Contractor up to an aggregate sum of **Rs.....(Rupees)** such sum or sums being payable in Indian currency and we undertake to pay on your first written demand and without any demur and/or condition, and sum or sums with the aggregate limit of **Rs. (Rupees)**

We agree that no change or addition to or modification of the terms of the tender or of the works is to be performed there under or of any of the tender documents which may be made between you and the Contractor shall in any way release the Bank from any liability under this Guarantee, and we hereby waive notice of any such change, addition or modification.

We further agree that the Employer shall have the right to invoke a claim up to the last date of the validity of this Bank Guarantee and that the Employer shall remain the sole judge of the validity of the claim and the Bank agrees not to contest any claim.

We further agree that any change in the Contractor's constitution or their liquidation or dissolution shall not discharge the Bank's liability under this Guarantee.

We further agree that the right of the Employer to make a claim shall not be vitiated by any dispute raised or pending with any Statutory Authority, arbitrator, tribunal or any other body or person.

It is agreed that the Employer's claim shall remain valid even if the Employer has not issued a prior notice or has not proceeded against a Contractor before making such claim.

This Guarantee is confirmed and irrevocable and shall remain valid upto ----- and including ----- and shall remain valid upto such extended period which may be mutually agreed to.

Unless a demand or claim under this Guarantee is made on the Bank in writing on or before - -----, the Bank shall be discharged from all liability under this Guarantee.

**** BG should be Valid for 90 days from the date of submission of tender.**