

ASSAM ELECTRICITY GRID CORPORATION LIMITED
Regd. Office:1st floor, Bijulee Bhawan,Paltanbazar,Guwahati-781001
CIN:U40101 AS2003SGC007238
Phone:0361-2739520/Fax:0361-2739513 web:www.aegcl.co.in



BID NO: AEGCL/DGM/TTC/TEZ/T-20/2019/86(C), Dated: 20.08.19

Bidding Document

For

Group-C: Supply of Materials required and Erection, Testing, Commissioning of 50 MVA, 132/33 kV Transformer at 132 kV Depota GSS.

**DEPUTY GENERAL MANAGER
TEZPUR T&T CIRCLE
AEGCL, TEZPUR-784001**

**Tender Cost: ₹ 1000.00
EMD: ₹36,000.00**

For & on behalf of the **Managing Director, AEGCL, the Deputy General Manager, Tezpur T&T Circle, AEGCL, Dhanuwa Nagar, Tezpur**, invites tenders in prescribed form, from reputed Firms/Contractors with sound technical and financial capabilities for the following work. A single stage two envelope procedure (**Techno-Commercial and Price Bid**) will be adopted for this tender.

Sl. No.	Name of work	Estimated Amount including taxes INR	Time of completion In Days(From site handing over date)
1	Group-C: Supply of Materials required and Erection, Testing, Commissioning of 50 MVA, 132/33 kV Transformer at 132 kV Depota GSS.	17,87,128.00	45 days

1.0 Cost of Bidding Document:

Bidder has to pay Non-Refundable tender document cost of **Rs.1000.00 (Rupees One Thousand)** only in the form of **A/C payee Demand draft (Non-refundable)** pledged in favour of the **“Assam Electricity Grid Corporation Limited, Bijulee Bhawan, Paltanbazar, Guwahati-1”, Payable at Guwahati.**

2.0 Bidding Address:

Tender papers can be purchased on application in plain paper from the **Deputy General Manager, Tezpur T&T Circle, AEGCL, Tezpur on all working days from 20.08.19 to 03.09.19.** For submission of bids and other clarifications if any, the address is:

**O/o the Deputy General Manager,
Tezpur T&T Circle, AEGCL,
Near Dhanuanagar Petrol Pump,
Sonitpur, Tezpur, Assam-787001.
Ph no. 03712-221794.**

3.0 Validity of Bids and Bids Prices:

3.1 Bids shall remain valid for the period of 180 days after the bid submission deadline date prescribed by AEGCL. In exceptional circumstances, prior to the expiration of the bid validity period, AEGCL may request Bidders to extend the period of validity of their bids. The request and the responses shall be made in writing. If a bid security shall also be extended for a corresponding period.

3.2 Bidder may refuse the request without forfeiting its bid security. A Bidder granting the request shall not be required or permitted to modify its bid.

3.3 Bidders shall quote for the entire scope of supply and services on a “single responsibility” basis such that the total bid price covers all the Supplier’s obligations mentioned in or to be reasonably inferred from the bidding document in respect of the design, manufacture, including procurement, delivery, and completion of the entire scope.

3.4 Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules.

Schedule No. 1: Civil works associated with erection, testing and commissioning of equipments.

4.0 Bid Security:

4.1 All bids must be accompanied by a bid security amounting to **Rs. 36,000.00** only in the form of Demand Draft from any Nationalised Bank payable at Guwahati in favour of the **“Assam Electricity Grid**

Corporation Limited, Bijulee Bhawan, Paltanbazar, Guwahati-1", Payable at Guwahati.

- 4.2 If a bid security is specified, any bid not complying then his bid shall be rejected by the Employer as non-responsive.
- 4.3 The bid security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has signed the Contract and furnished the required performance security.
- 4.4 The bid security of unsuccessful Bidders shall be returned as promptly as possible upon the successful Bidder's furnishing of the performance security.
- 4.5 The bid security may be forfeited:
- a) if a Bidder withdraws its bid during the period of bid validity specified by the Bidder.
 - b) if the successful Bidder fails to:
 - (i) sign the Contract with in the specified period.
 - (ii) furnish a performance security within specified period.
- 4.6 The Bid Security of a JV shall be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent.
- 4.7 If a bid securing declaration is not executed in accordance with the above, AEGCL will declare the Bidder ineligible to be awarded a contract by the AEGCL for the period of time stated in the Form of Bid Securing Declaration.

5.0 Format and Signing of Bid:

- 5.1 The Bidder shall prepare one original of the Technical Bid and one original of the Price Bid comprising the Bid and clearly mark it —ORIGINAL - TECHNICAL BID and —ORIGINAL - PRICE BID.

In addition, the Bidder shall submit three copies of the bid, in the number specified and clearly mark each of them —COPY. In the event of any discrepancy between the original and the copies, the original shall prevail.

- 5.2 The original and all copies of the Bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as specified in the Bid Document and shall be attached to the bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid where entries or amendments have been made shall be signed or initialled by the person signing the bid.
- 5.3 A bid submitted by a JV shall be signed so as to be legally binding on all partners.
- 5.4 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialled by the person signing the bid.

6.0 Submission and Opening of Bids:

6.1 Submission, Sealing and Marking of Bids:

- 6.1.1 Bidders may submit their bids by mail or by hand. When so specified in the Bid Document, bidders shall have the option of submitting their bids electronically. Procedures for submission, sealing and marking are as follows:

Bidders submitting bids by mail or by hand shall enclose the original and each copy of the Bid, including alternative bids, if permitted in accordance with above, in separate sealed envelopes, duly marking the envelopes as —ORIGINAL and —COPY. These envelopes containing the original and the copies shall then be enclosed in one single envelope.

- 6.1.2 The inner and outer envelopes shall:
- (a) bear the name and address of the Bidder;

- (b) be addressed to the Bidding Authority.
- (c) bear the specific identification of this bidding process indicated in the Bid Document

6.1.3 The outer envelopes and the inner envelopes containing the Technical Bid shall bear a warning not to open before the time and date for the opening of Technical Bid.

6.1.4 The inner envelopes containing the Price Bid shall bear a warning not to open until advised by the AEGCL.

6.1.5 If all envelopes are not sealed and marked as required, the Employer will assume no responsibility for the misplacement or premature opening of the bid.

6.2 Deadline for Submission of Bids vis-à-vis Bid Opening:

6.2.1 Bids must be received by the AEGCL at the address and no later than **17.00 Hours (IST) of 03.09.19.**

6.2.2 Subsequently, the bids will be opened publicly at **13.00 Hours (IST) of 04.09.19.**

6.3 AEGCL may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document, in which case all rights and obligations of the AEGCL and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

7.0 Eligible Bidders:

7.1 A Bidder may be a private entity or a government-owned entity or any combination of such entities with the intent to enter into an agreement supported by a letter of intent or under an existing agreement in the form of a joint venture, consortium, or association (JV). In the case of a JV:

- a) all partners shall be jointly and severally liable, and
- b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.

7.2 A Bidder, and all partners constituting the Bidder, shall have Indian nationality. A Bidder shall be deemed to have the nationality of a country if the Bidder is a national or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of Republic Of India. This criterion shall also apply to the determination of the nationality of proposed subcontractors or suppliers for any part of the Contract including related services.

7.3 AEGCL considers a **conflict of interest** to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitute a prohibited practice under Anticorruption Policy of Government of India and Government Of Assam. In pursuance Anticorruption Policy's requirement that Employer as well as bidders, suppliers, and contractors observe the highest standard of ethics. AEGCL will take appropriate actions if it determines that a conflict of interest has flawed the integrity of any procurement process.

Consequently all Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:

- (a). they have controlling partners in common; or
- (b). they receive or have received any direct or indirect subsidy from any of them; or
- (c). they have the same legal representative for purposes of this bid; or
- (d). they have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another Bidder, or influence the decisions of the Employer regarding this bidding process; or
- (e). a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same

- (f). subcontractor, not otherwise participating as a Bidder, in more than one bid; or
a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the plant and services that are the subject of the bid.

7.4 A firm that is under a declaration of ineligibility by the AEGCL or any Government Entity or PSU at the date of the deadline for bid submission or thereafter i.e. on or before contract signing date shall be disqualified.

7.5 Bidders shall provide such evidence of their continued eligibility satisfactory to the AEGCL, as the Employer shall reasonably request.

7.6 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.

8.0 Financial Capability:

8.1 Bidder will require to submit along with the bid the audited balance sheets and other legal financial statements acceptable to AEGCL, for the last 3 (three) years to demonstrate the current soundness of the Bidders financial position and its prospective long term profitability. As a minimum, an Applicant's net worth calculated as the difference between total assets and total liabilities should be positive.

8.2 **Average Annual Turnover** : Minimum average annual turnover **INR 5,37,000.00** calculated as total certified payments received for contracts in progress or completed, within the last 3 (Three) Years.

8.3 **Financial Resources**: Bidder need to demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:

- (1) the following cash-flow requirement, **INR 5,37,000.00** and
- (2) the overall cash flow requirements for this contract and its current works commitment.

9.0 Experience:

9.1 Experience having successfully completed similar works during last 7 years ending last day of the month previous to the one in which applications are invited should be either of the following:

- (a) Three (3) similar completed works costing not less than **7,15,000.00**
- (b) Two (2) similar completed works costing not less than **8,93,565.00**
- (c) One (1) similar completed works costing not less than **14,29,704.00**

9.2 Similar work implies the works related to **Civil works associated with erection, testing and commissioning of equipments**. Each of such project/ works should consist of completion certificate as per Clause 9.1.

10.0 Evaluation Criteria:

10.1 Evaluation will be done on the basis of Clause No. 7.0, 8.0 and 9.0 and in accordance with the **Annexure I** to be duly filled in, signed and submitted by the bidder.

10.2 Price Bid of only **Responsive Techno-Commercial Bidders** will be opened.

10.3 **Arithmetical Error**, if observed while in Price Bid evaluation, same will only be corrected.

10.4 **Any post bid correction request will NOT BE ENTERTAINED.**

10.5 **Price Bid Envelope of the Non-responsive Techno Commercial Bidders will be returned** to the respective bidders against submission of a written request by the bidder.

11.0 Late Bid:

- 11.1 Any bid submitted ***after the due date and time*** will be rejected without any prejudice.
- 11.2 AEGCL will not be responsible for any Postal and/or Courier Delay in delivering the bid. The same received after the scheduled closing date and time will be rejected without any prejudice.
- 11.3 Bidding through EMAIL WILL NOT BE ACCEPTED.
- 12.0 Clarification:**
- 12.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the AEGCL in writing at the AEGCL's address indicated in the BDS or raise his enquiries prior to 7 (seven) days of closing of the bid. The Employer will respond to any request for clarification, provided that such request is received no later than seven (7) days prior to the deadline for submission of bids. The AEGCL's response shall be in writing with copies to all Bidders who have acquired the Bidding Document including a description of the inquiry but without identifying its source. Should AEGCL deem it necessary to amend the Bidding Document as a result of a request for clarification, it shall do so.
- 12.2 The Bidder is advised to visit and examine the site where the work is to be Carried out and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the provision of plant and services. The costs of visiting the site shall be at the Bidder's own expense.
- 12.3 The Bidder and any of its personnel or agents will be granted permission by the Employer to enter upon its premises and lands for the purpose of such visit, but only upon the express condition that the Bidder, its personnel, and agents will release and indemnify the Employer and its personnel and agents from and against all liability in respect thereof, and will be responsible for death or personal injury, loss of or damage to property, and any other loss, damage, costs, and expenses incurred as a result of the inspection.
- 12.4 The Bidder's designated representative is invited to attend a pre-bid meeting, if provided for in the BDS. The purpose of the meeting will be to clarify issues and to answer questions on any matter that may be raised at that stage.
- 12.5 The Bidder is requested, as far as possible, to submit any questions in writing, to reach the AEGCL not later than one week before the pre-bid meeting if there is provision of Pre Bid Meeting.
- 12.6 Minutes of the pre-bid meeting, including the text of the questions raised, without identifying the source, and the responses given, together with any responses prepared after the meeting, will be transmitted promptly to all Bidders who have acquired the Bidding. Any modification to the Bidding Document that may become necessary as a result of the pre-bid meeting shall be made by AEGCL exclusively through the issue of an Addendum but not through the minutes of the pre-bid meeting.
- 12.7 Nonattendance at the pre-bid meeting will not be a cause for disqualification of a Bidder.
- 13.0 Amendment of Bidding Document:**
- 13.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- 13.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document from AEGCL.
- 13.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their bids, AEGCL may, at its discretion, extend the deadline for the submission of bids.
- 14.0 Preparation of Bids by the Bidders:**
- 14.1 Cost of bidding:** The Bidder shall bear all costs associated with the preparation and submission of its Bid,

and AEGCL shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

14.2 **Language of Bid:** The Bid, as well as all correspondence and documents relating to the bid exchanged by the Bidder and AEGCL, shall be written in the English and / or Assamese language.

14.3 Bid Prices and Discounts:

14.3.1 Unless otherwise specified in the Bid Document and/or AEGCL's Requirements, bidders shall quote for the entire plant and services on a —single responsibility basis such that the total bid price covers all the Contractor's obligations mentioned in or to be reasonably inferred from the bidding document in respect of the including procurement and subcontracting (if any), delivery, construction, installation and completion of the Work. This includes all requirements under the Contractor's responsibilities for completing the work and where so required by the bidding document, the acquisition of all permits, approvals and licenses, etc.; the operation, maintenance and training services and such other items and services as may be specified in the Bidding Document, all in accordance with the requirements of the General Conditions. Items against which no price is entered by the Bidder will not be paid for by the Employer when executed and shall be deemed to be covered by the prices for other items.

14.3.2 Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding document. If a Bidder wishes to make a deviation, such deviation shall be listed. The Bidder shall also provide the additional price if any, for withdrawal of the deviation.

14.3.3 Bidders shall give a breakdown of the prices in the manner and detail called for in the Price Schedules. Where no different Price Schedules are included in the Bidding Document, bidders shall present their prices in the following manner:

(a) Separate numbered Schedules shall be used for each of the following elements.

(i) The total amount from each Schedule shall be summarized in a Grand Summary giving the total bid price(s) to be considered.

14.3.4 The price of the work shall be quoted as the Base Price or EXW Price

14.3.5 GST and all other taxes (as applicable) payable on the work should be indicated separately. In case of failure to indicate so AEGCL will consider such taxes are included in the Offered Price.

14.3.6 Whenever forest produces like sand, stone, timbers etc are used in the work the contractor have to furnish documentary proof that requisite royalty on such produces has been paid to the concerned Department.

14.3.7 When the work being "work contract" which is one and individual and which involves no separate contract for the sale of materials, the contractor shall have not be entitled to get any VAT and or any other taxes, levies reimbursed from the AEGCL for the supply of the materials.

14.3.8 Taxes like GST, income tax etc. which need to be deducted at source as per the prevailing law of the land, will be deducted at source.

14.3.9 The Prices shall be FIXED and FIRM: The Bided Price should on Fixed Price basis, prices quoted by the Bidder shall be fixed during the Bidder's performance of the contract and not subject to variation on any account. A bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

15.0 Additional Requirements:

15.1 Detailed list of tools, plants, equipment's and machinery available with the tenderer along with their value (A copy of approved assessor's certificate to be enclosed or affidavit), if applicable.

15.2 Name, qualifications of the technical supervisors and staff under the employment of the tenderer and organization on hand and proposed to be engaged for the subject work (Authenticated by a Chartered

Accountant or sworn through affidavit), if applicable.

- 15.3 Other facilities available with the tenderer not covered hither to.
- 15.3.1 Bidders(s) knowledge from actual personal investigation of the resources of the region or District (S) in which he/they offers the work.
- 15.3.2 Copy of Contract labour license.
- 15.3.3 The Bidder shall furnish copy of their PAN Card. The card must be in the name of firm, in case the tenderer is a partnership Firm.
- 15.3.4 In case the tenderer is a partnership Firm, the work experience, solvency and turn over shall be in the name of partnership Firm only.
- 15.3.5 GST registration No. and valid labour license.
- 15.3.6 Registered Power of attorney, if any.
- 15.3.7 Audited balance sheet and IT return for last three (3) years.
- 15.3.8 The contractor must possess a valid Electrical License of 33 kV and above issued by the competent authority.
- 16.0 Negotiation with successful bidder:**
The AEGCL reserve the right to hold negotiations with lowest who should be lowest, valid, eligible and technically acceptable tenderer considered for award of contract directly if the rates were not unreasonably high.
- 17.0 Technical Specifications:**
- 17.1 Scope of Work**
- 17.1 The major items of works included in the scope of this specification are listed below:-
i) Construction of cable trench, fire protection wall, fabrication of equipment mounting structure with foundation and equipment earthing etc.
- 17.2 QUALIFICATION REQUIREMENTS FOR ERECTION, TESTING & COMMISSIONING**
- 17.2.1 The bidder should have carried out erection, testing, commissioning of and test charging 132 kV switchyard equipments sub stations satisfactory during last five years before date of submission of the bid.
- 17.2.2 The bidder should arrange requisite tools and tackles including adequate capacity hydraulic crane having suitable adjustable boom length for erection of bushing, radiators, conservator, and other associated costly equipments.
- 17.3 The bidder should have team of trained personnel and skilled labour force and supervising engineers to carry out erection, commissioning, testing and test charging work including laying of control cables and wiring of OLTC gear scheme and inter connection of RTCC panel with D.M., of OLTC., wiring of cooler control scheme and cooling fans including automatic operation of cooler control etc.
- 17.4 TOOLS REQUIRED FOR ERECTION**
- One or two mobile crane hydraulic of adequate capacity with long boom of 30 ft. bearing free vertical lifts suitable for lifting HV bushing.
 - Steel/Manila/Nylon ropes and D shackle for lifting of 3-ton weight.
 - 4000 or 6000 liters. / hr. capacity filter machine in excellent working condition. It must be capable of heating transformer oil up to 800 C and must be equipped with built in high vacuum

pump and chamber filter elements.

- Following accessories should also be made available.
- Non-collapsible hose piping of size 40 mm to 80 mm with nipple and flange.
- Hosepipe should be of oil resistant 2" to 3" BSP suitably threaded for connecting hose pipes & provided with holes for fastening.
- 2 Nos. storage tanks for insulating oil of adequate capacity provided with 2 bottom drain cum filter valve and another 2" top valve.
- Two complete sets of ring and flat spanners of metric size up to 4 to 36.
- One complete set of Allen keys.
- One complete set of screw drivers.
- 1/4 " shackle 3-ply nylon rope of 15 mtr. Length.
- 4 nos. of flange each of 1", 2" to 3" BSP suitably threaded for connecting hose pipe & provided with holes for fastening.
- Multi stage vacuum pumping system capacity 250-500 mm cu/hr. & should be able to create absolute vacuum of 1 tor or 1.3 m bar or less having following accessories.
- Non return valve at inlet.
- GI pipe/non-collapsible pipes with flange for connecting vacuum pump to transformer main tank.
- Vacuum gauge for reading 0 to 50 mm along with flange for fitting at top of transformer of any suitable size 3/16" and 3/8" set in good quality.
- Oil testing kit in good working condition having 2.5mm and 4 mm guage for adjusting the gap, 2.5/5 KV megger motor driven and capable of reading up to 50000 M-OHM.
- 3 Ltrs. Of CTC.
- Hot air blower for drying out of bushing.
- Required nitrogen cylinder.
- Stainless steel bottles for samples.
- Gas cylinder with nozzle torch for gas cutting etc.
- Any other item required for successful completion of work.

17.5 Supplier to inform himself fully

- 17.5.1 The Supplier should ensure that he has examined the General Conditions, qualifying criteria, Specifications and Schedules and has satisfied himself as to all the conditions and circumstances affecting the contract price and fixed his price according to his own views on these matters and acknowledge that no additional allowances except as otherwise provided therein will be levied.
- 17.5.2 The Purchaser shall not be responsible for any misunderstanding or incorrect information obtained by the Supplier other than information given to the Supplier in writing by the Purchaser

17.6 Conformity with Indian Electricity rules & other local regulations:

- 17.6.1 The Supplier shall note that all substation works shall comply with the latest provisions of Indian Electricity Rules and with any other regulations. Local authorities concerned in the administration of the rules and regulation relating to such works shall be consulted, if necessary, in regard to the rules and regulations that may be applicable.
- 17.6.2 The equipment covered by this specification shall, unless otherwise stated be designed, constructed and tested in accordance with the latest revisions of relevant Indian Standards and shall conform to the regulations of local statutory authorities.
- 17.6.3 In case of any conflict between the standards and this specification, this specification shall govern.

17.7 Employer's supervision:

- 17.7.1 To eliminate delays and avoid disputes and litigation it is agreed between the parties to the Contract that all matters and questions shall be resolved in accordance with the provisions of this document.

- 17.7.2 The manufacturing of the product shall be carried out in accordance with the specifications. The scope of the duties of the Employer, pursuant to the contract, will include but not be limited to the following.
- (a) Interpretation of all the terms and conditions of these Documents and Specifications.
 - (b) Review and interpretation of all the Contractors drawings, engineering data etc.
 - (c) Witness or authorize his representative to witness tests at the manufacturer's works or at site, or at any place where work is performed under the contract.
 - (d) Inspect, accept or reject any equipment, material and work under the Contract, in accordance with the Specifications.
 - (e) Issue certificate of acceptance and/or progressive payment and final payment certificate.
- 17.8 Guaranteed Technical Particulars:**
- The Guaranteed Technical Particulars of the various items shall be furnished by the Bidders. The Bidder shall also furnish any other information's as in their opinion is needed to give full description and details to judge the item(s) offered by them.
- The data furnished in Guaranteed Technical Particulars should be the minimum or maximum value (as per the requirement of the specification) required. A Bidder may guarantee a value more stringent than the specification requirement. However, for testing purpose or from performance point of view, the material shall be considered performed successfully if it achieves the minimum/maximum value required as per the technical specification. No preference what so ever shall be given to the bidder offering better/more stringent values than those required as per specification except where stated otherwise.
- 18.0 Packing:**
- 18.1 All the materials shall be suitably protected, coated, covered or boxed and crated to prevent damage or deterioration during transit, handling and storage at Site till the time of erection. The Supplier shall be responsible for any loss or damage during transportation, handling and storage due to improper packing.
- 18.2 The Supplier shall include and provide for securely protecting and packing the materials so as to avoid loss or damage during transport by air, sea, rail and road.
- 18.3 All packing shall allow for easy removal and checking at site. Wherever necessary, proper arrangement for attaching slings for lifting shall be provided. All packages shall be clearly marked for with signs showing 'up' and 'down' on the sides of boxes, and handling and unpacking instructions as considered necessary. Special precaution shall be taken to prevent rusting of steel and iron parts during transit by sea.
- 18.4 The cases containing easily damageable material shall be very carefully packed and marked with appropriate caution symbols, i.e. fragile, handle with care, use no hook etc. wherever applicable.
- 18.5 Each package shall be legibly marked by the-Supplier at his expenses showing the details such as description and quantity of contents, the name of the consignee and address, the gross and net weights of the package, the name of the Supplier etc.
- 19.0 Construction Tools, Equipments etc.:**
- 19.1 The Contractor shall provide all the construction equipment, tools, tackle and scaffoldings required for construction, erection, testing and commissioning of the works covered under the Contract including construction power water supply etc. He shall submit a list of all such materials to the Employer before the commencement of work at site. These tools and tackle shall not be removed from the site without the written permission of the Employer.
- 20.0 Materials handling and storage:**
- (a) All the supplies under the Contract as well as Employer supplied items (if any) arriving at site shall be promptly received, unloaded and transported and stored in the stores by the Contractor.
 - (b) Contractor shall be responsible for examining all the shipment and notify the Employer immediately of any damage, shortage, discrepancy etc. for the purpose of Employer's information only. The Contractor shall submit to the Employer every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damages in transit, handling

and/or in storage and erection at site. Any demurrage, and other such charges claimed by the transporters, railways etc., shall be to the account of the Contractor.

(c) The Contractor shall maintain an accurate and exhaustive record-detailing out the list of all items received by him for the purpose of erection and keep such record open for the inspection of the Employer.

(d) All items shall be handled very carefully to prevent any damage or loss. The materials stored shall be properly protected to prevent damage. The materials from the store shall be moved to the actual location at the appropriate time to avoid damage of such materials at Site.

(e) All the materials stored in the open or dusty location must be covered with suitable weatherproof and flameproof covering material wherever applicable.

(f) The Contractor shall be responsible for making suitable indoor storage facilities, to store all items/materials, which require indoor storage.

(g) The Contractor shall have total responsibility for all equipment and materials in his custody, stored, loose, semi-assembled and/or erected by him at site. The contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss.

(h) The Employer will verify the storage facilities arranged by the contractor and despatch clearance will be provided only after Employer is satisfied.

21.0 Contractor's material brought on to site:

21.1 The Contractor shall bring to Site all equipment, components, parts, materials, including construction equipment, tools and tackles for the purpose of the work under intimation to the Engineer. All such goods shall, from the time of their being brought vest in the Employer, but may be used for the purpose of the Works only and shall not on any account be removed or taken away by the Contractor without the written permission of the Engineer. The Contractor shall nevertheless be solely liable and responsible for any loss or destruction thereof and damage there to.

21.2 The Employers shall have a lien on such goods for any sum or sums, which may at any time, be due or owing to him by the Contractor, under in respect of or by reasons of the Contract. After giving a fifteen (15) days' notice in writing of his intention to do so, the Employer shall be at liberty to sell and dispose of any such goods, in such manner, as he shall think fit including public auction or private treaty.

21.3 After the completion of the Works, the Contractor shall remove from the Site under the direction of the Engineer the materials such as construction equipment, erection tools and tackles, scaffolding etc. with the written permission of the Engineer.

22.0 Commissioning Spares:

22.1 It will be the responsibility of the Contractor to provide all commissioning spares required for initial operation till the Employer declares the equipment as ready for commissioning. All commissioning spares shall be deemed to be included in the scope of the Contract at no extra cost to the Employer.

22.2 These spares shall be received and stored by the Contractor at least 3 months prior to the schedule date of commencement of commissioning of the respective equipment and utilized as and when required. The unutilised spares and replaced parts, if any, at the end of successful completion of performance and guarantee test shall be the property of the Contractor and he will be allowed to take these parts back at his own cost with the permission of Employer's Representative.

23.0 Fabrication:

The fabrication of substation steel structures shall be in conformity with the following:

a. Except where hereinafter modified, details of fabrication shall conform to IS: 802 (Part-II) or the relevant international standards.

b. The tower structures shall be accurately fabricated to connect together easily at site without any undue strain on the bolts.

c. No angle member shall have the two leg flanges brought together by closing the angle.

d. The diameter of the hole shall be equal to the diameter of bolt plus 1.5mm.

e. The structure shall be designed so that all parts shall be accessible for inspection and cleaning. Drain

holes shall be provided at all points where pockets of depression are likely to hold water.

f. All identical parts shall be made strictly inter-changeable. All steel sections before any work are done on them shall be carefully levelled, straightened and made true to detailed drawings by methods which will not injure the materials so that when assembled, the adjacent matching surfaces are in close contact throughout. No rough edges shall be permitted in the entire structure.

24.0 Drilling and Punching:

24.1 Before any cutting work is started, all steel sections shall be carefully strengthened and trued by pressure and not by hammering. They shall again be trued after being punched and drilled.

24.2 Before any cutting work is started, all steel sections shall be carefully strengthened and trued by pressure and not by hammering. They shall again be trued after being punched and drilled.

24.3 Holes for bolts shall be drilled or punched with a jig but drilled holes shall be preferred. The punching may be adopted for thickness up to 16mm. Tolerances regarding punch holes are as follows:

- a) Holes must be perfectly circular and no tolerances in this respect are permissible.
- b) The maximum allowable difference in diameter of the holes on the two sides of plates or angle is 0.8mm. I.e. the allowable taper in a punched holes should not exceed 0.8 mm on diameter.
- c) Holes must be square with the plates or angles and have their walls parallel.

24.4 All burrs left by drills or punch shall be removed completely. When the tower members are in position the holes shall be truly opposite to each other. Drilling or reaming to enlarge holes shall not be permitted.

25.0 Erection mark:

Each individual member shall have erection mark conforming to the component number given to it in the fabrication drawings. The mark shall be marked with marking dies of 16mm size before galvanizing and shall be legible after galvanizing.

26.0 Galvanizing and Painting:

26.1 Galvanising of the various members of the structures shall be done only after all works of sawing, shearing, drilling, filling, bending and matching are completed. Galvanising shall be done by the hot dip process as recommended in IIS: 2629 or other such authoritative international standards and shall produce a smooth, clean and uniform coating of not less than 610 gm per square meter. The preparation for galvanising and the galvanising process itself must not affect adversely the mechanical properties of the treated materials. No manual Galvanization process will be accepted.

26.2 The outside surface shall be galvanised. Sample of galvanised materials shall be supplied to the galvanised test set out in IIS 729 or other such authoritative international standards.

26.3 All assembly bolts shall be thoroughly hot dip galvanised after threading. Threads shall be of a depth sufficient to allow for the galvanized coating, which must not be excessive at the root of the threads, so that the nut shall turn easily on the completed bolts without excessive looseness. The nut threads shall not be galvanised, but oiled only.

27.0 Civil works:

27.1 The civil works include construction of switchyard equipment foundations. The work should be done as per the directives and supervision of AEGCL. The foundation work includes:

- (i) Earthwork in excavation for foundation trenches of walls, retaining walls, footings of column, steps, septic tank etc. including refilling (return filling) the quantity as necessary after completion of work, breaking clods in return filling, dressing, watering and ramming etc. and removal of surplus earth with all lead and lifts as directed and specified in the following classification of soils including bailing out water where necessary as directed and specified.
- (ii) Providing brick soling in foundation and under floor with stone/ best quality picked jhama brick, sand packed and laid to level and in panel after preparing the subgrade.

- (iii) Plain cement concrete works with coarse aggregate of sizes 13mm to 32mm in foundation bed for footing steps, walls, brick works etc as directed and specified.
- (iv) Supplying, fitting and fixing in position reinforcement bars conforming to relevant IS code for R.C.C. work/ R.B. walling including straightening, cleaning, cutting and bending to proper shapes and placing in position with proper blocks, supports, chairs, spacers etc. complete. (up to 1st floor level).
- (v) Providing form work of ordinary timber planking so as to give a rough finish including centering, shuttering, strutting and propping etc., height of propping and centering below supporting floor to ceiling not exceeding 4.0 M and removal of the same for in-situ reinforced concrete and plain concrete work.
- (vi) Providing and laying Plain/Reinforced cement concrete works in prop 1:2:4 including dewatering if necessary, and curing complete but excluding cost of form work and reinforcement for reinforced cement concrete works (shuttering where necessary shall be measured and paid separately).
- (vii) 15mm thick cement plaster in single coat on rough side of single or half brick wall for interior plastering up to 1st floor level including arises, internal rounded angles, not exceeding 80mm in girth and finished even and smooth including curing complete as directed.
- (viii) Supplying fitting and fixing M.S.angles, M.S. flat, M.S. bolts and nuts including painting with red lead paint one coat complete as directed.

28.0 Earthmate Extension and Grounding of Equipment:

- 28.1 (a) The main earth mat of the entire switchyard is already in place.
- (b) All conductors buried in earth and concrete shall be GI. All conductors above ground level and earthing leads, cable trench earthing shall be of galvanised steel.
- (c) Light poles, junction boxes on the poles, cable and cable boxes/glands, lockout switches etc. shall be connected to the earthing conductor running along with the supply cable which in turn shall be connected to earthing grid conductor at a minimum two points
- (d) The metallic switchyard security fencing may not be connected to the substation main earth grid. The security fencing shall be earthed by running a separate 40 mm dia MS rod earthing conductor along the fence along with 40 mm dia rod electrodes of 3000 mm long at regular intervals and at each corner
- (e) Ineffective/damaged Equipment/Structure earthing identified for the substation equipments in coordination with the concerned Resident Engineer shall be properly earthed using electrodes and GI flats as required.
- (f) Placing of electrodes should be such that if the length of earth electrode is "1", the next electrode should be placed at "2" distance from the 1st.
- (g) Security fencing should be separately earthed. At max, 4 no. of 40 mm dia rod electrodes of 3000 mm long electrodes may be used for the earthing of the fencing on each side.
- (h) Parts of the switchyard where earthing mat (main mesh) does not exist at present (if any) as identified by the concerned Resident Engineer or as per BoQ and necessary earthing activities to be undertaken.
- (i) Also, the proper earthing of Kiosks as per direction of the concerned Resident Engineer in the switchyard and depending on availability of earth-mat in that area of the switchyard, necessary earthing activities are to be carried out.
- (j) One number 40 mm dia, 3000 mm long earth electrode with test link, CI frame and cover shall be provided to connect each down conductor of surge arresters, capacitive voltage transformers, lightning masts and towers with peak.
- (k) For substation equipments, the connection between existing earthing pads and the earthing grid shall be made by two short earthing leads (one direct and another through the support structure) free from kinks and splices. In case earthing pads are not provided on the item to be earthed, same shall be provided in consultation with Purchaser.
- (l) All lighting panels, junction boxes, receptacles fixtures, conduits etc. shall be grounded in compliance with the provision of I.E. rules
- (m) Each earthing lead from the neutral of the power transformer/Reactor shall be directly connected to

two pipe electrodes in treated earth pit (as per IS) which in turn, shall be buried in Cement Concrete pit with a cast iron cover hinged to a cast iron frame to have an access to the joints. All accessories associated with transformer/reactor like cooling banks, radiators etc. shall be connected to the earthing grid at minimum two points

(n)Neutral points of systems of metallic enclosures and frame works associated with all current carrying equipment and extraneous metal works associated with electric system shall be connected to the existing earth mat.

(o)Earthing connections with equipment earthing pads shall be bolted type. Contact surfaces shall be free from scale, paint, enamel, grease, rust or dirt. Two bolts shall be provided for making each connection. Equipment bolted connections, after being checked and tested, shall be painted with anti-corrosive paint/compound.

(p)The 75x12mm GI flat shall be clamped with the equipment support structures at 1000mm interval.

(q)Connection between equipment earthing lead and main earthing conductors and between main earthing conductors shall be welded type. For rust protections, the welds should be treated with red lead and afterwards coated with two layers bitumen compound to prevent corrosion.

(r)All ground connections shall be made by electric arc welding. All welded joints shall be allowed to cool down gradually to atmospheric temperature before putting any load on it. Artificial cooling shall not be allowed.

(s)All earthing activities shall conform to the Code of practice for Earthing IS: 3043 and as directed by the site-incharge.

(t)Installation of Ground wire is to be done as instructed by Engineer-in-Charge.

29.0 Construction of Cable trenches and fire protection wall

The cable trench and fire protection wall should be constructed as per instruction of the site-engineer as per specification and drawing.

30.0 GENERAL SPECIFICATIONS OF CIVIL WORK

SITE PREPARATION:-

- All works required for site preparation will have to be carried out by the contractor at his own expense, whenever directed by the Site In-charge.
- The Contractor shall clear the site of unnecessary vegetation to prepare the site for work only as per directions given by the Site In-charge.
- Any unnecessary structures are to be demolished and serviceable materials to be stacked and stored as directed by AEGCL.
- Any waste or unwanted material has to be disposed by the contractor if ordered by AEGCL. No materials will be allowed to leave the site without the permission of the Site In-charge.
- All water which may accumulate on the site before or during the progress of the works or in trenches and excavations shall be removed and drained out from the site to the satisfaction of the Site In-charge by the Contractor.
- Any other work required for adequate preparation of the site shall be carried out by the Contractor.

PROFILE SETTING AND LEVELLING:-

- Profile setting and levelling for the site has to be carried out by the Contractor for finding the amount of earth cutting and filling that will be required for setting the Final Ground Level, Tie Beam Level and to find the amount of excavation to be done for required foundation depth.

SETTING OF LAYOUT:-

- The Site In-charge shall supply dimensioned drawings, levels and other information necessary to enable the Contractor to set out the works and the Contractor shall set out the works and be

responsible for the accuracy of the same.

- He shall rectify at his own cost and to the satisfaction of the Site In-charge any error found at any stage which may arise through in accurate setting out unless such error is based on incorrect data furnished in writing by the Site In-charge, in which case the cost of rectification shall be borne by the Corporation.
- The Contractor shall protect and preserve all bench marks used in setting out the works till end of the Defects Liability Period unless the Site In-charge directs their earlier removal.

EXCAVATION AND BACKFILLING:-

- Trenches for foundation and other structures shall be taken out to the levels and dimensions shown on the approved drawings or to such other levels and dimensions as the Engineer-in-charge may direct. The bottom of all excavations shall be carefully levelled and stopped on benches as directed by the Engineer. Any pocket of soft or loose materials and fissures in the bottom pits and trenches shall be removed and the cavities so formed filled or grouted with concrete as directed by Engineer-in-charge. When any excavation has been done and trimmed to the required levels and dimensions, the Engineer-in-charge shall be informed accordingly so that he may inspect the complete pit or trench and no excavation shall be filled in and covered with concrete until it has been inspected and the contractor has been authorized to proceed with work. All surplus excavation not required for refilling shall be deposited in embankments, or otherwise disposed off as directed. The work shall include all necessary sheeting, shoring, bracing, drawing and pumping out water, removal of all legs, stumps, grabs and other deleterious matters, obstructions, necessary for placing the foundations.
- When required by the Engineer-in-charge, materials in the last 500mm of depth of the excavations shall not be removed until immediately before the concrete is to be placed.
- Refilling of foundation pits and trenches shall be carried out only after the foundation and structure works within the excavation have been inspected and approved by the Engineer-in-charge. Unless otherwise directed by the Engineer-in-charge all fillings shall consists of approved materials. All space between foundation concrete and the sides of excavation shall be refilled to the original surface using approved plant, in single layers not exceeding 250mm loose thickness which shall be watered and completed to a dry density not less than that of the adjoining soil strata. Timber sheeting and other excavation support shall be carefully removed as the filling proceeds but the removal of such supports will not relieve the contractor of his responsibility for the stability of the works.

DEWATERING:-

- Where water is met with during excavation due to stream flow, seepage, shoring, rain or other reasons, the contractor shall take adequate measures such as bailing, pumping, constructing diversion channel, drainage channel, ponds and other necessary works to keep the foundation trenches dry and to protect the green concrete against damage by eruption or sudden rising of water level.
- Approval of the Engineer-in-charge shall be required for any method adopted, for the adequacy of dewatering and protection arrangements and for the sound safety of the work shall be required.

PREPARATION OF BASE:-

- Any excavation taken out to a greater depth than that required shall be back filled with concrete of the foundation grade at the cost of the contractor. If required sand may be used for backfilling, if permitted by Site In-Charge.
- Refilling of foundation pits and trenches shall be carried out only after the foundation and structure works within the excavation have been inspected and approved by the Engineer-in-charge.
- Unless otherwise directed by the Engineer-in-charge all fillings shall consists of approved materials.
- All space between foundation concrete and the sides of excavation shall be refilled to the original surface using approved plant, in single layers not exceeding 250mm loose thickness which shall be watered and completed to a dry density not less than that of the adjoining soil

strata.

- Timber sheeting and other excavation support shall be carefully removed as the filling proceeds but the removal of such supports will not relieve the contractor of his responsibility for the stability of the works.

BRICK SOLING:-

- Bricks in soling should be well placed and the surface after placing of brick should be flat.
- An extension of 75 mm should be maintained on each side of the footing or as specified in the drawing.

PLAIN CEMENT CONCRETE:-

- Plain Cement Concrete works must be carried out in dry condition and dewatering should be carried out wherever necessary before placing of concrete.
- The proportion of Plain Cement Concrete should be 1:3:6 or as specified in the drawing and design. The quality of the mix will have to be checked and approved by the Site In-charge.
- Curing should be done properly and as per instructions.

SHORING AND PROPPING:-

- For pits and trenches requiring stabilising of slope, shoring or propping may be carried out at the Contractors own expense.

REINFORCEMENT:-

- All reinforcement shall be cleaned thoroughly by removing loose scales, oil, grease or other deleterious materials. The contractor shall obtain the approval of the Engineer-in-charge or his representative to the reinforcement when fixed in position before any concrete is deposited in the forms.
- Bars shall be bent cold or straightened in a manner to the satisfaction of the Engineer-in-charge or his representative. Bars bent during transport or handing shall be straightened before using on work. They shall not be heated to facilitate bending. Welding shall be done as per latest IS Code of practice.
- All reinforcement bars shall be cut and standard hooks for MS rounds made at ends and accurately placed in position as shown on the approved drawings. They shall be securely held in position before and during concreting by annealed binding wires used for binding the reinforcement which shall be of approved quality soft annealed iron wire not less than 1 mm (18SWG) size, conforming to IS:280.
- As far as possible, bars of full length shall be used. Where bars are required or permitted to be lapped by the Engineer-in-charge, or his representative, the over laps shall be staggered for different bars and located at points, along the span where bending moment is not maximum. The concrete measured over the reinforcing bars shall be in accordance with the approved drawings.

SHUTTERING AND CENTERING:-

- Shuttering for concrete shall be made of either metal or timber suitably lined and of substantial and rigid construction true to shape, alignment and dimensions as shown on the approved drawings
- Shuttering shall be mortar tight and shall be made sufficiently rigid by the use of ties and bracings to prevent any displacement, deflection or movement of any kind. They shall be strong enough to withstand all pressure, ramming and vibration, movement of persons, materials and plant during and after placing the concrete. Special measures shall be taken to ensure that the form work does not hinder the shrinkage of concrete because without this cracking could occur before the form work is removed.
- When the Shuttering is ready for commencing concreting, the contractor shall inform the Site-in-charge or his representative to inspect and accept the shuttering as to their strength, alignment and general fitness.
- If the Site-in-charge is satisfied with the quality of shuttering then may allow the contractor for

pouring concrete.

- Poor or old shuttering should not be used. The Site In-Charge at his own discretion may reject any shuttering material if found not satisfactory.

REINFORCED CEMENT CONCRETE:-

- A minimum grade of M20(1:1.5:3) concrete shall be used for all structural/load bearing members as per latest IS 456.
- Optimum quantity of water shall be mixed to produce the design mix/nominal mix concrete of required workability.
- Workability shall be such that the concrete surrounds and properly grips all reinforcement.
- The degree of consistency, which shall depend upon nature of work and method of vibration of concrete, shall be determined by regular slump tests to be carried out by the contractor at his cost.
- Usually for mass concrete in RCC works where vibrations are used the slumps shall be within 10mm to 25mm.
- The frequency of such tests and the natures of slumps shall be maintained within the limits specified by the Engineer-in-charge.
- The Engineer-in-charge also reserves the right to carry out slump tests independently at his own discretion.
- Cube moulds should be prepared for destructive testing randomly as per instructions given by Site In-Charge.
- Cement shall have to be weighed from bulk stocks at site and not by bags. It shall be weighed separately from the aggregates.
- Water shall either be measured by volume in calibrated buckets or weighed. All necessary equipment shall be maintained in a clean and serviceable condition. Their accuracy shall be periodically checked.
- Honeycombed RCC structure should be dismantled immediately and reconstructed.
- If Reinforced Cement Concrete works include Stone masonry works then stone masonry works should be carried out in stages. After completing one stage mortar droppings shall be cleaned and Reinforced Cement Concrete works should be done before starting the second stage of stone masonry work.

BRICK MASONRY:-

- Brick work in cement mortar with 1st class brick including racking out joints and dewatering if necessary, and curing complete as directed in sub-structure up to plinth level. Cement Mortar used should be in 1:4 proportion.

CONSTRUCTION JOINT:-

- All construction joints horizontal or vertical shall be at predetermined position according to approved drawing or as directed by the Engineer-in-charge. Prior to commencement of fresh concreting over any construction joint which has set but hardened, the removal of laitance and roughening shall be done by wire brushing and washing and care shall be taken to avoid dislodgement of coarse aggregates.
- At construction joints where the concrete has hard, any skin or laitance shall be thoroughly hacked, swept cleaned and washed with clean fresh water. The surplus water shall be removed immediately before depositing fresh concrete. The neat cement, grout shall be followed by 13mm thick layer of cement mortar of same proportion as in concrete and the concreting resumed immediately thereafter. The first batch of fresh concrete shall be forced hard on to the mortar layer and the set faces, angles and corners by means of compacting tools, vibrators etc. and the damping effect on vibration in such position shall be allowed for.
- Construction joints shall be avoided as far as possible in case of structure, especially at tensile zones. Where unavoidable, concreting shall be carried out continuously up to such joints which shall preferably be transverse to the line of main compression. However, in all cases, the position of construction joints shall be predetermined and got approved by the Engineer-in-charge.

PLASTERING:-

- Surfaces to be rendered must be cleaned and made free from all dust, loose materials, grease, etc, and be well wetted for a few hours (the wall should not be soaked but only damped evenly); but the wall should not be too wet.
- Plaster may be applied in one or two coats. No single coat should exceed 12 mm in thickness as thick coats shrink more and crack.
- Plaster work on new construction should be deferred as much as possible so as to let shrinkage in reinforced concrete and masonry take place before plastering.
- General proportion for cement plaster should be 1:4.

CURING:-

- Curing should be done as soon as possible after concrete is placed and when initial set has occurred and before it has hardened. It should be continued for a minimum period of 7 to 12 days when normal (Portland) cement is used, 4 to 7 days when rapid hardening cement is used, and should be kept thoroughly wet for 24 hours when high alumina cement is used.
- Vertical surfaces may be covered with hanging curtains. Columns and small members shall be cured by wrapping round them wet sacks or by sprinkling water continuously. On vertical surfaces it should be checked that the wet fabric is in contact with the surface.
- Water should be sprinkled on the underside of beams and columns for proper curing.

PRIMING AND PAINTING:-

- One coat of cement primer of approve brand and manufacturer is to be applied on new wall surfaces after thoroughly brooming the surface from mortar droppings and other foreign matter including preparing the surface even and sand papered smooth.
- Finishing of the wall is to be made with water proofing cement paint of approved brand and manufacturer and of required shade on new wall surfaces (two coats) to give an even shade after thoroughly brooming the surfaces to remove all dirt and remains of loose powdered materials.

31.0 Service Conditions:

The materials supplied shall be suitable for operation under the following climatic and other conditions:

- a) Peak ambient day temperature in still air: 45 °C
- b) Minimum night temperatures : 0 °C
- c) Ground temperatures: 40 °C
- d) Reference ambient day temperature : 45 °C
- e) Relative Humidity
- i). Maximum : 100 %
- ii). Minimum : 10 %
- f) Altitude : Below 1000 M above MSL
- g) Maximum wind pressure : As per IS: 802
- h) Seismic Intensity: ZONE-V as per IS 1893.

32.0 Contract Agreement:

32.1 An agreement shall have to be drawn on non-judicial stamp of appropriate value with the Department by the selected Contractor in AEGCL's General Conditions of Supply and Erection 2009 of contract within specified period from the date of issue of the LOI/Work Order.

32.2 Wherever there is any variation in between the conditions of the AEGCL's General Conditions of Supply and Erection 2009 and the above terms & conditions, this bid conditions will supersede the conditions of the AEGCL's General Conditions of Supply and Erection 2009.

33.0 Liquidated Damage:

33.1 The date of completion of work shall be deemed to be the essence of the contract and shall not be completed no later than the date specified in the contract. In case of failure to complete the work within the stipulated period AEGCL shall be entitled to:

- 33.2 Recover an amount at the rate of 1% (One percent) of the Contract Price per week or part thereof of delay, subject to maximum of 10% (Ten percent) of the contract price as liquidated damage to AEGCL.

However, the payment of liquidated damages shall not in any way relieve the Contractor from any of its obligations to complete the works or from any other obligations and liabilities of the Contractor under the Contract.

- 33.3 To complete the balance work giving notice to the Contractor/Firm and to recover any extra expenditure incurred thereby for having to complete the work at a higher price at the risk and responsibility of the Contractor/Firm.

- 33.4 Contractual failure:- Refer clause No.27.1 of AEGCL's General Conditions of supply and erection 2009.

34.0 PERT Chart and/or BAR Chart:

The successful bidder within 10 (ten) days before the contract is awarded will make out a detailed PERT Chart covering all activities along with detailed program chart on accepted scheme indicating various stages of execution, method of execution and completion of work in different stages keeping the period of completion in view and submit the same to the Engineer for the consideration and approval.

35.0 Insurance:

The bidder shall arrange for any pay/cost of personnel accident insurance, medical treatment etc. in respect of their employees assigned to the works for all time and shall govern by Law of land.

36.0 Warranty:

- 36.1 The Supplier/Manufacturer warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

- 36.2 The Supplier/Manufacturer further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination.

- 36.3 If during the Period Warranty any defect is found, the Purchaser shall give Notice to the Supplier/Manufacturer stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier/Manufacturer to inspect such defects.

- 36.4 If having been notified, the Supplier/Manufacturer fails to remedy the defect within a period of 15 (fifteen) days, the Purchaser may, following notice to the Supplier/Manufacturer, proceed to do such work, and the reasonable costs incurred by the Purchaser in connection therewith shall be paid to the Purchaser by the Supplier or may be deducted by the Purchaser from any amount due the Supplier or claimed under the Performance Security.

- 36.5 The term period of warranty shall mean the period of 18 (eighteen) months from the date of Taking Over of the Work by AEGCL. A Taking over Certificate (TOC) will be issued by the appropriate authority.

37.0 Safety:

Each and every safety measures for MAN and MACHINE will be the sole responsibility of the Contractor without any prejudice. Compensation claim if any will also be the responsibility of the contractor without any prejudice. As the contract is Turnkey in nature hence AEGCL will not bear any responsibility towards such claim.

38.0 Pollution:

Each and every measure should be taken to adhere to the standard norms to avert any occasion of Air

Pollution, Water Pollution, Soil Pollution and Sound Pollution. In case of any deviation leading to any legal action the Contractor will be solely responsible without any prejudice.

39.0 Right of Way:

No ROW issue.

40.0 Payment terms:

40.1 No advance/Mobilization advance shall be made in this contract.

40.2 100% payment would be admissible within six (6) weeks from the date of receipt of the plants/ materials /equipment at site in full and good condition less deduction of Retention Money as per terms and conditions stipulated in the Contract Agreement.

40.3 For progressive payments:

1. Within 60 (sixty) days from the date of submission of invoice against erection, 80% (eighty percent) payment against foundation & erection and civil works would be made along with 100% GST
2. In total 4 (four) Nos. of progressive erection invoice/ bill would be entertained.
3. The 1st progressive erection invoice/ bill would be entertained on completion of 30% of total erection cost of the project.
4. Thereafter, erection invoice/ bill can be submitted on completion of 20% of the subsequent Foundation, erection, civil works.
6. Remaining 20% of the erection value would be paid on completion of 100% erection, testing and commissioning activities of the project duly certified by the Project Manager.

40.4 No claim for interest shall be entertained by AEGCL in respect of any money or balance which may be in AEGCL's hands owing to any dispute or difference or misunderstanding between the contractor and the AEGCL or due to the reason beyond the reasonable control of AEGCL.

40.5 Payment is subject to availability of specific fund.

40.6 TDS at actual will be deducted from the payable amount against each invoice/bill.

40.7 Bill will be routed through DGM, Tezpur (T&T) Circle, AEGCL, Dhanuwa Nagar, Tezpur.
The Bidder / Firm will have to be submitted the following Net Banking details.

- (a) Banker's Name & Branch
- (b) Account No
- (c) Banker's address
- (d) Banker's IFSC Code
- (e) Banker's RTGS Code

41.0 Performance security deposit:

41.1 The successful bidder shall have to deposit a performance Guarantee of 10% of the total contract value of the project through a **Bank Guarantee/ Demand Draft/ Fixed Deposit** from a Nationalized or scheduled Bank of RBI for a period of (18) eighteen months from the date of commissioning of the project and is to be submitted with acceptance of LOI before signing of the contract agreement. However, BG may be split up subject to the condition that BG would be extended from time to time to cover the warranty period. Moreover, before one month (30 days) of expiry of BG, renewal is to be done by the contractor if required, otherwise revocation would be done by AEGCL within claim period. The BG should be in AEGCL's standard proforma on non-judicial stamp of appropriate value duly pledged in favour of the **The Managing Director, AEGCL, Bijulee Bhawan, Paltanbazar, Guwahati-1**. The BG should remain valid up to 60 days beyond the warranty period of 18 (eighteen) months. The Bank Guarantee (BG) should be submitted to the **O/O the Deputy General Manager, Tezpur T&T Circle, AEGCL, Tezpur-784001** by the issuing Bank under registered post AD.

41.2 Please note that, if the selected Bidder / Firm fails to furnish the requisite performance security as stated above and sign the contract within the stipulated period, LOI/work order issued in favour of the

Bidder/ Firm will automatically be Null & void.

41.3 If the bidder / firm fails or neglects to observe and perform any of his obligations under the contract, Purchaser (AEGCL) shall have the right to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the Contractor/Firm.

41.4 No interest shall be payable on such deposits.

42.0 Retention Money:

42.1 In addition to above performance security deposit, 20% value of each progressive bill will be retained by the Engineer/Purchaser as Retention Money. The amount will be held by the Purchaser (AEGCL) till the work under the contract is completed and the completion certificate is issued in pursuance to clause 25.0 of AEGCL's General Conditions of Supply and Erection 2009.

42.2 If the Firm/Bidder fails or neglects to observe and perform any of his obligations under the contract, the Purchaser (AEGCL) shall have the right to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the supplier/contractor.

42.3 No interest shall be payable on such deposit.

43.0 Force Majeure Condition:

Force Majeure condition shall be considered as any circumstances beyond reasonable control of the party claiming relief, including but not limited to strikes, lockout, civil commotion, riot insurrection, hostilities, mobilization, war, fire, flood, earthquake, malicious damage or accidents could entitle contractor to extension time. Any such delay should be intimated within 10 (ten) days from the beginning of such delay to consider/approved, any claim without prior information may not be considered under force Majeure.

44.0 Settlement of Dispute and Arbitration:

Any dispute arising out of the contract will be first settled bilaterally between AEGCL and Contractor. In case, dispute cannot be settled bilaterally, it will be referred to arbitration to be by an arbitrator appointed by AEGCL. The contractor shall not stop the work during settlement of any dispute. All disputes shall be subjected to the jurisdiction of District Court of Kamrup District.

45.0 Right to Reject:

The AEGCL reserves the right to reject any or all the bids without assigning any reason thereof and the AEGCL further reserves the right to split up the work order in favour of more than one Contractor. The AEGCL also reserves the right to reject the lowest or any other price without assigning any reason.

The clauses which are not appearing in this document (bid) will be as per The General Condition of Supply and Erection 2009 of AEGCL. The General Condition of Supply and Erection 2009 of AEGCL is available in the AEGCL's website www.aegcl.co.in under Acts, Rules and Policies Tab.

Letter of Technical Bid

[Bidder's Letterhead]

Date: _____

Tender No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda No.: _____.
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the completion/delivery schedule specified in the bid document, the following Goods and Related Services: _____
- (c) Our Bid shall be valid for a period of _____ days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;
- (d) If our Bid is accepted, we commit to obtain a Performance Security in the amount of _____ percent of the Contract Price for the due performance of the Contract;
- (e) We are not participating, as Bidders, in more than one Bid in this bidding process;
- (f) We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed.
- (g) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by AEGCL, APDCL or APGCL under the Employer's country laws or official regulations
- (h) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Form of Bid Security (Bank Guarantee)
(To be stamped in accordance with Stamp Act)
(The non-Judicial Stamp Paper should be in the name of issuing Bank)

Date: _____
Bid Reference No.: _____

WHEREAS, _____ [Name of Bidder] (hereinafter called "the Bidder") has submitted his bid dated _____ [Date] for the supply of _____ [Name of Contract] (hereinafter called "the Bid").

KNOW ALL MEN by these presents that We _____ [Name of Bank] of _____ [Name of Place] having our registered office at _____ (hereinafter called "the Bank") are bound unto _____ [Name of Purchaser] (hereinafter called "the Purchaser") in the sum of _____ 1 for which payment well and truly to be made to the said Purchaser the Bank binds himself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this ____ day of _____ 20____.

THE CONDITIONS of this obligation are:

- 1) If the Bidder withdraws its Bid during the period of bid validity specified by the Bidder in the Bid Submission Sheet, except as provided in the relevant Bid **Clause**;
- Or
- 2) If the Bidder refuses to accept the correction of errors in his Bid;
- Or
- 3) if the Bidder, having been notified of the acceptance of his Bid by the Employer during the period of Bid validity;
 - a) fails or refuses to execute the Form of Contract Agreement in accordance with the Instructions to Bidders, if required; or
 - b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders;

We undertake to pay to the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it owing to the occurrence of one or all of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date ____ days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Purchaser, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE _____ SIGNATURE OF THE BANK _____

WITNESS _____ SEAL _____

(Signature, Name, and Address)

ANNEXURE: I

Following information is to be furnished in the 'Technical and Commercial bid' as first page.

(Please tick mark where necessary.)

1)	Earnest money (EMD)	:Submitted/Not submitted
	a) Amount of EMD	:Rs.
	b) Submitted in the form of	
2)	Validity of the offer	: days from the date of opening of 'Technical & Commercial Bid' & 'Price bid'.
3)	Nature of price offered	
	i) 'FIRM' Price	: Yes/No
4)	Terms of payment (Whether agreeable to accept payment as specified in bid clause- 36)	: Yes/No
7)	'Performance security deposit and Retention money' (Whether agreeable to accept as specified in bid)	: Yes/No
8)	Whether drawing etc. as per specification are furnished	: Yes/No
9)	List of orders executed for similar works furnished (As per bid clause 9)	: Yes/No
10)	Deviation from the specifications	
	a) Technical	: Yes/No
	b) Commercial	: Yes/No
11)	Information in respect of technical capability is furnished	: Yes/No
12)	Information in respect of Financial capability certificate from the Banker is furnished	: Yes/No
13)	Certificate as per Cl.no. 15.1 enclosed	: Yes/No
14)	Certificate as per Cl.no. 15.2 enclosed	: Yes/No
15)	Copy of Contract Labour License, Cl. No. 15.3.2	: Yes/No
16)	PAN card as per Cl. No. 15.3.3	: Yes/No
17)	GST registration no. and valid labour license as per Cl. No. 15.3.5 enclosed.	: Yes/No
18)	Registered Power of Attorney as per Cl.no. 15.3.6 enclosed.	: Yes/No
19)	Audited balance sheet and IT return for last three years as	: Yes/No

	per CI no.15.3.7	
20)	Valid Electrical license as per CI no. 15.3.8	: Yes/No
21)	Warranty as per CI no.36	: Yes/No

It is certified that the rates have been quoted as per terms and conditions laid down in the tender specification and without any deviation.

Name of the Bidder:-

Signature of the Bidder/Firm

Full Name

Postal Address

Phone/Mobile No.

Bidding Forms:**Name of work:****Bid Identification No:****General**

- (i) Name of the Firm/Contractor:
(ii) Full Address:
(iii) Constitution of the Firm:
a) Whether Partnership or any type:

A) Experience: As per Bid Clause No.9

Sl. No.	Name of work & W/O No.	Worked Done Under	Value of Work	Specified date of completion	Present status/completed on

B) Financial Position

- (i) Financial Turnover during the last three years (copies of Audited Annual report, Accounts or a statement duly certified by a chartered accountant and Income Tax return.

Year	Turn over

Any other details that the tenderer may like to furnish to substantiate their financial and technical ability to undertake this work and complete the same within stipulated period of completion.

Name of the Bidder:-

Signature of the Bidder/Firm

Full Name

Postal Address

Phone/Mobile No.

Price Proposal Submission Sheet

Date: _____

Tender No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

- (a) We have examined and have no reservations to the Bidding Document, including Addenda No.: _____
- (b) We offer to supply in conformity with the Bidding Document and in accordance with the completion/delivery schedule specified Schedule of Supply & Erection, the following Goods and Related Services:

- (c) The total price of our Bid, excluding any discounts offered in item (d) below is:

- (d) The discounts offered and the methodology for their application are:

- (e) The following commissions, gratuities, or fees have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient	Address	Reason	Amount

(If none has been paid or is to be paid, indicate "none.")

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

PRICE BID

Schedule No. 1: Civil works associated with erection, testing and commissioning of equipments

(To be submitted in the Part-II, 'Price bid' in sealed envelope in quadruplicate)

Sl. No.	Item description	Unit	Qty	Rate	Amount
1	Construction of cable trenches including supply of all materials and labour as per specification and drawing				
	i) Type-C	Mtr	25		
	ii) Type-D	Mtr	50		
	iii) Underground cable trench for 33kV XPLE cable	Mtr	30		
2	Construction of Fire Protection Wall for 50MVA transformer (8 mtr x 7.5 mtr)	No	1		
3	Supply of Gravel for filling of Transformer Pad & excess oil storage tank. (Including loading, unloading, carriage of Gravel and stacking in the oil storage tank) 62.64 Cu M	Job	1		
4	Fabrication of GI tower member required for equipment mounting structure	MT	2.36		
5	Erection of equipment mounting structure including construction of foundation & supply of all foundation materials and structure earthing				
a.	i) 132kV Gang Operated SF6 CB	Set	1		
	ii) 33kV Gang Operated SF6 CB	Set	1		
b.	i) 132kV Transformer HV CT	No	3		
	ii) 33kV Transformer LV CT	No	3		
c.	i) 132kV Isolator without Earth Switch	Set	1		
	ii) 33kV Isolator without Earth Switch	Set	1		
d.	i) 132kV Lightning Arrester	No	3		
	ii) 33kV Lightning Arrester	No	3		
e.	i) 132kV Post Insulator	No	3		
	ii) 33kV Post Insulator	No	3		

6	Installation of Earthing system including breaking and repairing of existing PCC including supply & spreading of requied gravel.	LS (Job)	1		
Total =					
Add GST @ 18 % =					
Grand Total =					

Name of the Bidder:-

Signature of the Bidder/Firm