

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



Bidding Document

For

Construction of new 132KV and 33KV transformer bay at Majuli GSS and Construction of 132/33 KV transformer pad at Majuli GSS.

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

E-Tender Cost: Rs. 2000.00

EMD: Rs.82,000.00

E-TENDER

Submission at <https://assamtenders.gov.in>

BID NO: AEGCL/DGM/TTC/TEZ/T-20/2020/110

Date: 29/10/2020

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/Manufacturers with sound technical and financial capabilities for the following work.

Sl. No.	Name of work	Bid Security In INR	Time of completion In Days (From site handing over date)
1	Construction of new 132 KV and 33 KV transformer bay at Majuli GSS and Construction of 132/33 KV transformer pad at Majuli GSS.	82,000.00	90 days

1.0 Cost of Bidding Document:

Bidder has to pay Non-Refundable tender processing fee of **Rs.2000.00 (Rupees Two Thousand) only**, to be paid online through the link given in the website assamtenders.gov.in

2.0 Bidding Address:

For clarification if any, the address is:

**O/o the Deputy General Manager,
Tezpur T&T Circle, AEGCL,
Near Dhanuanagar Petrol Pump,
Sonitpur, Tezpur, Assam-784001.
Ph no. 03712-221794.**

Email: deputy.gm.tez@gmail.com

3.0 SCOPE OF WORK

3.1 The major scope of work are as follows

- 3.2
- a) Erection of equipment mounting Structure including of foundation and supply of all foundation material and structure earthing
 - b) Erection testing & commissioning of Equipments including laying & terminating of LT power & control Cable & equipment earthing
 - c) Erection, testing & commissioning of Control & Relay panel including laying & terminating Of LT power and control cable
 - d) PCC & Gravelling Works
 - e) Construction of 50 MVA Transformer pad.
 - f) Dismantling of all Bay Equipment at Dhemaji GSS & transportation from Dhemaji to Majuli GSS
 - g) Supply of Materials

4.0 Eligible Bidders:

4.1 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.

4.2 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.

4.3 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 subcontractor, not otherwise participating as a Bidder, in more than one bid; or
- (f) 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.

4.4 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.

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

4.6 In case a prequalification process has been conducted prior to the bidding process, this bidding

is open only to prequalified Bidders.

5.0 Financial Capability:

5.1 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.

5.2 **Average Annual Turnover** : Minimum average annual turnover **INR 12,22,500.00** calculated as total certified payments received for contracts in progress or completed, within the last 3 (Three) Years.

5.3 **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 12,22,500.00** and

(2) the overall cash flow requirements for this contract and its current works commitment.

6.0 Experience:

6.1 Experience on relevant work under contracts in the role of manufacturers, contractor, subcontractor, or management contractor for at least the last 7(Seven) years prior to the bid submission deadline.

6.2 Participation as manufacturer, contractor 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 **₹ 16,30,000.00**.

(b) Two (2) similar completed works costing not less than **₹ 20,37,000.00**.

(c) One (1) similar completed works costing not less than **₹ 32,59,000.00**.

6.3 The Bidder who is not a manufacturer of equipment as required for in this Bid for execution of the works shall submit **an undertaking using form "Manufacturer's Authorisation- notarized"**

6.4 Similar work implies the works related to **construction of 132 KV and 33 KV transformer bay and 132/33Kv transformer pad**. Each of such project / works should consist of completion certificate as per Clause 9.1.

6.5 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.

7.0 SUBMISSION OF BID

7.1 **Techno-commercial and price bids are to be submitted in separate covers in the e-tender portal. Tender will not be considered for opening if not accompanied by a tender fee and EMD bank guarantee of stipulated amount.**

7.2 **a) Earnest Money Deposit (EMD):** -

7.2.1 Bidder should submit earnest money deposit in the form of an unconditional Bank Guarantee (BG)/ Demand Draft (DD) amounting to ₹ 82,000.00 (Eighty Two Thousand) only from Nationalized or scheduled Bank in favour of “AEGCL Bijulee Bhawan, Paltanbazar, Guwahati-1”. The EMD in form of BG should be provided as per annexure-VI and shall be valid for 30 (thirty days beyond the original validity period of the bid, or beyond any period of extension requested. EMD BG should be evocable at Guwahati.

The earnest money BG shall be forfeited if:

- a) If a bidder withdraws its bid during the period of bid validity specified by the bidder in its tender
- b) If the successful bidder fails to:
 - i) Sign the Contract with in the specified period.
 - ii) Furnish the performance security within specified period.

The earnest money will be released to the bidders on submission of performance guarantee by successful bidder.

7.3 **a) Price basis**

7.3.1 Price shall be firm and no price variation shall be allowed within the completion period. **Prices are to be quoted inclusive GST.**

7.4 **b) Documents to be submitted with bid.**

7.4.1 Following documents to be submitted in original before tender end date.

- i) EMD BG/DD

7.4.2 Following documents to be uploaded along with technical bid in e-tender portal:

- i) EMD BG/DD (As per format at Annexure-VI).
- ii) Tender fee receipt.
- iii) Power of Attorney/Authorization for bid signatory.
- iv) Filled up and signed Annexure-I: Tender Proforma part – I (Techno-commercial Bid).
- v) Filled up and signed Annexure-II: Bidder’s information sheet.
- vi) Filled up and signed Annexure-III: Bidder’s qualification.
- vii) Filled up and signed Annexure-IV: list of ongoing & completed projects
- viii) Filled up and signed Annexure-V: Financial resources
- ix) GST/PAN/ trade license.
- x) Test certificates as per clause 34.6

8.0 **Important Dates.**

Tender start date: 29.10.2020 10:00 Hrs.

Tender end date: 18.11.2020 17:00 Hrs.

Tender opening date: 19.11.2020 12:00 Hrs.

9.0 EVALUATION AND COMPARISON OF BID PROPOSALS

9.1 AEGCL will examine the techno-commercial bid submitted by the bidders to determine the responsiveness of the bids to the requirement of the bidding document. Price proposals of those bidders will only be opened whose technical bids are found responsive/techno-commercially qualified to the bidding document.

9.2 For evaluation of the price proposal the following criteria will be followed.

- i) AEGCL is not bound to accept the lowest quoted rate if the contractor is not responsive to the requirements of the bidding document.
- ii) If there is discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and total price should be corrected. If there is a discrepancy between the words and figures, the amount in word should prevail. If the bidder does not accept the correction of the errors as above, his bid will be rejected and the amount of bid guarantee/security will be forfeited.

10.0 EMPLOYER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

10.1 AEGCL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for AEGCL's action. AEGCL is not bound to accept the offer of the lowest bidder. In the event of annulment, EMD BG shall be returned to the bidders immediately.

11.0 NOTIFICATION OF AWARD

11.1 Prior to expiration of the period of bid validity prescribed by AEGCL, AEGCL will notify the successful bidder through written letter that its bid has been accepted. This letter (hereinafter called the "Letter of Acceptance" or "LoA") shall include the "contract price" which AEGCL will pay the Contractor in consideration of the execution, completion of the works by the Contractor as prescribed by the Contract.

12.0 PERFORMANCE SECURITY

12.1 Within 7 (days) days of receipt of the LoA from AEGCL, the successful bidder shall furnish to AEGCL, a performance security amounting to 10% (ten percent) of the Contract Price mentioned in the LoA using for that purpose form of performance security provided in annexure-VII or some other form acceptable to AEGCL. The performance guarantee BG shall be valid through 30 days beyond the guarantee period.

13.0 SIGNING OF CONTRACT AGREEMENT

13.1 Successful bidder has to sign the contract document with AEGCL within 10(ten) days from issue of LoA at the office of the tender inviting authority.

14.0 SITE VISIT

14.1 The bidder may visit 132KV Majuli GSS, and 132 KV Dhemaji GSS, AEGCL and examine the site of work and its surroundings and obtain any information that may be necessary for preparing the bid. The costs of visiting the Site shall be at the bidder's own expense.

14.2 Concerned officer for obtaining field information: The AGM, North Lakhimpur T&T Division, AEGCL, North Lakhimpur

15.0 ESTIMATION OF MATERIAL REQUIREMENT

15.1 **The estimated quantity of materials required is indicated in the PRICE SCHEDULE.**

16.0 QUANTITY VARIATION

16.1 Purchaser/ Employer shall have the right to increase/ decrease the ordered quantity by 15% within 50 days of the period of completion of supply order and the same shall be supplied at the same rates/ prices and terms and conditions stipulated in the order except in regard to delivery schedule, which shall be mutually agreed upon in case of increase in the ordered quantity.

17.0 BID VALIDITY

17.1 The validity of this bid shall be for 180 days from the date of bid.

18.0 PERIOD OF COMPLETION

18.1 Work should be completed within **90 (Ninety)** days from the date of site handover. Bidder should submit a completion schedule matching with the completion period.

19.0 TERMINATION OF WORK ORDER / LOA

19.1 Purchaser reserves the right to terminate the work order / LoA at any stage in accordance with the AEGCL's General Condition of Supply and Erection in force.

20.0 INSURANCE

20.1 The Contractor at his cost shall arrange, secure and maintain all insurance as may be pertinent to the Works and obligatory in terms of law to protect his interest and interests of the Employer / AEGCL against all perils detailed herein. The form and the limit of such insurance as defined herein together with the under-writer in each case shall be acceptable to the AEGCL. However, irrespective of such acceptance, the responsibility to maintain adequate insurance coverage at all time during the period of contract shall be of the contractor alone. The contractor's failure in this regard shall not relieve him of any of his contractual responsibilities and obligations. The insurance covers to be taken by the contractor shall be in a joint name of the Employer and the Contractor. The Contractor shall, however, be authorized to deal directly with Insurance Company or companies and shall be responsible in regard to maintenance of all insurance covers.

21.0 LIABILITY FOR ACCIDENTS AND DAMAGE

21.1 The contractor shall indemnify the Purchaser (AEGCL) against any loss, damage, and injury to any person or to any property and against any other liability or obligation and against all actions, suits, claims demands costs, charges and expenses arising in connection with such damage , injury, liability or obligation resulting from:-

- 21.2
- a) The negligence of the contractor and his workers, agents, subcontractors; and/or
 - b) The lack of or inadequacy of safety devices on equipment supplied under this contract.

22.0 PROGRESS REPORT :

22.1 Contractor shall have to submit monthly progress report or as and when sought by the site engineer.

23.0 PAYMENT TERMS:

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

23.2 (A) Progressive payment for supply items within the Country

23.2.1 Within 60 (sixty) days from the date of submission of the invoice against supply, not more than 60% (sixty Percent) payment of the total supply Invoice value would be made, on receipt and acceptance of materials in full and good condition. However GST amount on invoice would be paid 100% or as per Govt. Rules.

23.2.2 Maximum 10 (ten) Nos. of progressive supply invoices would be entertained.

23.2.3 Remaining 40% (Forty percent) **Retention Amount** would be released subject to fulfillment of the following conditions-

23.2.3.1 a) 50% of balance supply amount would be paid on completion of 50% of the total erection works of the project

23.2.3.2 b) Remaining 50% of the supply amount would be paid on completion of 100% erection. testing and commissioning activities of the project, which should be certified by the Project Manager.

23.3 (B) Progressive payments for erection works

23.3.1 1. Within 60 (sixty) days from the date of submission of invoice against foundation, erection & civil works, not more than 80% (eighty percent) of the total verified invoice would be made. However, GST amount on Invoice would be paid 100% or as per Govt. Rules.

23.3.2 2. Maximum 8(eight) Nos. of progressive erection Invoice/ Bill would be entertained during entire erection work.

- 23.3.3 3. The 1st Progressive erection Invoice/Bill would be entertained on completion of 30% of total erection cost of the Project.
- 23.3.4 4. Maximum 6 Nos. of additional progressive erection Invoice/Bill would be entertained. Minimum value of each Invoice should be 10% of the total ordered value for foundation erection and civil works.
- 23.3.5 5. Remaining 20% of the erection value would be paid on successful completion of 100% erection, testing and commissioning activities of the project, which should be certified by the Project Manager.
- 23.4 Payment will be made by 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

24.0 Performance security deposit:

- 24.1 Further Performance Guarantee of 10% of total Contract value for turnkey execution of the project in the form of Bank Guarantee (BG) / Demand Draft (DD) / Fixed Deposit (FD) from a nationalized or scheduled Bank of RBI for a period of 60 (sixty) months from the date of supply or 54(fifty four) months from the date of commissioning of the project, whichever is later is to be submitted with acceptance of LOI and before signing of the Contract Agreement. However BG period 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 (i.e. 30 days) of expiry of the BG, renewal is to be done by the contractor if required, otherwise revocation would be done by AEGCL within claim period. BG is to be submitted as per prescribed format of AEGCL. BG should remain valid up to 60 (sixty) days beyond warranty / Performance Guarantee Period.
- 24.2 The Bank Guarantee (BG) should be duly pledged in favour of the **AEGCL, Bijulee Bhawan, Paltanbazar, Guwahati-1**, and should be submitted to the **O/O the Deputy General Manager, Tezpur T&T Circle, AEGCL, Tezpur-784001** .
- 24.3 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.
- 24.4 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.
- 24.5 No interest shall be payable on such deposits.

25.0 Retention Money:

- 25.1 In addition to above performance security deposit, retention money will be retained by the Engineer/Purchaser as per Bid Clause 23. The amount will be held by the Purchaser (AEGCL) till the work under the contract is completed and the completion certificate is issued.
- 25.2 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.
- 25.3 No interest shall be payable on such deposit.
- 25.4 If during the Period Warranty any defect should be found in the design, engineering, materials and workmanship of the plant and equipment supplied or of the work executed by the Contractor, the Contractor shall promptly, in consultation and agreement with the Employer regarding appropriate remedying of the defects, and at Contractor's cost, repair, replace or otherwise make good as the Contractor shall determine at its discretion, such defect as well as any damage to the facilities caused by such defect.
- 25.5 If the Contractor fails to commence the work necessary to remedy such defect or any damage to the Facilities caused by such defect within a reasonable time (which shall in no event be considered to be less than fifteen (15) days), the Employer may, following notice to the Contractor, proceed to do such work, and the reasonable costs incurred by the Employer in connection therewith shall be paid to the Employer by the Contractor or may be deducted by the Employer from any payment due the Contractor or claimed under the Performance Security.
- 26.0 LIQUIDATED DAMAGE:**
- 16.1 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:
- 26.2 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.
- 26.3 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.
- 26.4 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.
- 26.5 Contractual failure:- Refer clause No.27.1 of AEGCL's General Conditions of supply and erection 2009.
- 27.0 APPROVALS / CLEARANCES:**
- 27.1 The CGM (O&M), AEGCL shall be the approving authority for all technical documents related to execution of the work.

28.0 ENVIRONMENTAL CONSIDERATIONS:

28.1 While carrying out the assignment, no damage to environment /forests will be caused by the contractor. If so done, the contractor will have to compensate the same to the satisfaction of the concerned Authority.

29.0 FUNDING OF THE PROJECT

29.1 The proposed work is funded under O&M HQ, 2020-21, AEGCL

30.0 TERMINATION OF CONTRACT ON OWNERS' INITIATIVE.

The Owner reserves the right to terminate the Contract either in part or in full due to reasons other than those mentioned under clause entitled "Contractor's Default." The Owner shall in such an event give fifteen (15) days notice in writing to the Contractor of his decision to do so.

The Contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and contracts to the extent they are related to the work terminated and terms satisfactory to the Owner, stop all further sub- contracting or purchasing activity related to the work terminated, and assist the Owner in maintenance, protection, and disposition of the Works acquired under the Contract by the Owner.

In the event of such a termination, .the Contractor shall be paid compensation, equitable and reasonable, dictated by the circumstances prevalent at the time of termination.

If the Contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the contractor is a partnership concern and one of the partners dies then unless the Owner is satisfied that the legal representatives of the individual contractor or of the proprietor of propriety concern and in the case of partnership, the surviving partners, are capable of carrying out and completing the Contract, the Owner shall be entitled to cancel the Contract as to its uncompleted part without being in any way liable to payment of any compensation to the estate of deceased Contractor and/or to surviving partners of the contractor's firm on account of the cancellation of the contract. The decision of the owner that the legal representatives of the deceased contractor or surviving partners of the contractor's firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation, the Owner shall not hold the estate of the deceased Contractor and/or the surviving partner of the Contractor's firm liable to damages for not completing the Contract.

31.0 GENERAL & SPECIAL CONDITIONS OF CONTRACT

AEGCL's "General Conditions of Supply and Erection of AEGCL 2009", copies of which can be downloaded by the bidders from AEGCL's web site www.aegcl.co.in, forms part of Bidding Document. In case of any contradiction between clauses of GCSE of AEGCL and specifications made under any section of this bidding document, stipulations made in this Bidding Document shall prevail.

32.0 DISCLAIMER:

While the Purchaser will make every endeavor to extend necessary facilitation in expediting the work, the contractor shall be responsible to organize and arrange all necessary inputs right from mobilization activities up to completion of the work. Purchaser will not entertain any failure / delay on such accounts.

Also, Purchaser will not be responsible for any compensation, replenishment, damage, theft etc. as may be caused due to negligent working, insufficient coordination with Government / non Government / Local Authority by the contractor and/ or his personnel deputed for work. The contractor shall take necessary insurance coverage under LIC/GIC etc. for his working personnel and the goods in store as well as in transit. The contractor will be deemed to have made him acquainted with the local working conditions at site(s) and fully provide for into the bid submitted.

33.0 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.

34.0 TECHNICAL SPECIFICATIONS

34.1 SCOPE OF WORK

The major items of works included in the scope of this specification are listed below:-

1. Erection of equipment mounting Structure including of foundation and supply of all foundation material including structure earthing works
2. Erection testing & commissioning of Equipments including laying & terminating of LT power & control Cable including equipment earthing works
3. Erection, testing & commissioning of Control & Relay panel including laying & terminating Of LT power and control cable
4. PCC and Graveling works
5. Construction of 50 MVA Transformer Pad
6. Dismantling of all Bay Equipment at Dhemaji GSS & Loading at Dhemaji GSS, transportation from Dhemaji to Majuli GSS & unloading at Majuli GSS
7. Supply of Materials

34.2 Supplier to inform himself fully

34.2.1 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.

34.2.2 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

34.3 **Conformity with Indian Electricity rules & other local regulations:**

34.3.1 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.

34.3.2 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.

34.3.3 In case of any conflict between the standards and this specification, this specification shall govern.

34.4 **Engineering Data:**

34.4.1 The furnishing of engineering data by the Supplier shall be in accordance with the Bidding Document. The review of these data by the Purchaser will cover only general conformance of the data to the specifications and not a thorough review of all dimensions, quantities and details of the materials, or items indicated or the accuracy of the information submitted. This review by the Purchaser shall not be considered by the Supplier, as limiting any of his responsibilities and liabilities for mistakes and deviations from the requirements, specified under these specifications.

34.4.2 All engineering data submitted by the Supplier after review by the Purchaser shall or part of the contract document.

34.5 **Drawings and Documents for approval:**

34.5.1 The supplier shall submit all drawings and documents of all equipment to be supplied, including drawings of foundation, steel structure and any other drawings that may be required for successful completion of the project and get it approved by the Purchaser (AEGCL).

34.5.2 In addition, the following sub clauses shall also apply in respect of Contract Drawings.

34.5.3 All drawings submitted by the Supplier including those submitted at the time of Bid shall be with sufficient detail to indicate the type, size, arrangement, dimensions, material description, Bill of Materials, weight of each component break-up for packing and shipment, fixing arrangement required, the dimensions required for installation and any other information specifically requested in these specifications.

34.5.4 Each drawing submitted by the Supplier shall be clearly marked with the name of the Purchaser, the specification title, the specification number and the name of the Project. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be to the scale and in S.I. units.

34.5.5 The drawings submitted for approval to the Purchaser shall be in quadruplicate. One print of such drawings shall be returned to the Supplier by the Purchaser marked "approved/approved with corrections". The Supplier shall there upon furnish the Purchaser additional prints as may be required along with one reproducible in original of the drawings after incorporating all corrections.

34.6 **TYPE TEST REPORT**

Full Type Test Reports of at least the following equipment must be submitted along with the Bid.

1. Power & Control Cables
2. GI Flat

34.7 **Employer's supervision:**

34.7.1 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.

34.7.2 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.

35.0 **Construction Tools, Equipments etc.:**

35.1 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.

36.0 **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.

37.0 Contractor's material brought on to site:

37.1 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.

37.2 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.

37.3 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.

38.0 Specification for Design and Fabrication of Substation Steel Structures:

38.1. Scope:

This section covers the design parameters and specification for fabrication and galvanising, of steel structures, bolts & nuts, tower accessories etc for Substations covered under this Bid Document.

38.2 Materials:

38.3 Structural steel:

The structures shall be of structural steel conforming to any of the grade, as appropriate, of IS 2062 (latest edition) Steel conforming IS 8500 may also be used. Medium and high strength structural steels with known properties conforming to any other national or international standards may also be used.

38.4 Bolts:

Bolts used shall conform to IS12427 or bolts of property class 4.6 conforming to IS 6639 may also be used. High strength bolts, if used (only with steel conforming to IS 8500) shall conform to property class 8.8 of IS3757. Foundation Bolts shall conform to IS 5624. Step bolts shall conform to IS 10238

38.5 Nuts:

Nuts shall conform to IS 1363 (Part 3). The mechanical properties shall conform to property class 4 or 5 as

the case may be as specified in IS 1367 (Part 6) except that the proof stress for nuts of property class 5 shall be as given in IS 12427. Nuts to be used with high strength bolts shall conform to IS 6623.

38.6 Washers:

Washers shall conform to IS 2016. Heavy washers shall conform to IS 6610. Spring washers shall conform to type B of IS 3663. Washers to be used with high strength bolts and nuts shall conform to IS 6649.

38.7 Galvanisation:

Structural members, plain and heavy washers shall be galvanized in accordance with the provisions of IS 4759. Spring washers shall be hot dip galvanized as per service grade 4 of IS 4759 or IS 1537.

38.8 Other materials:

Other materials used in the construction of the supporting structures shall conform to appropriate Indian Standards wherever available.

39.0 Design materials:

Switchyard structures such as columns, beams and equipment mounting structures shall be designed as per actual site requirement. The drawings are to be submitted for approval prior to supply/execution. Note: Structures with earth peak shall assume to have four earth wires for design purpose in normal condition.

40.0 Design Drawings:

40.1 The relevant drawings for all the towers, beams and equipment mounting structures shall be furnished by the Supplier to the Purchaser which shall include structural/fabrication drawings, Bill of Materials including nuts and bolts.

40.2 The structural drawings, Bill of materials and shop fabrication drawings for all the structures shall be submitted in four copies and will be finally approved by the Purchaser. The fabrication shall be taken up from the approved shop drawings. The overall responsibility of fabricating structure members correctly lies with the Supplier only and the Supplier shall ensure that all the members can be fitted while erecting without any undue strain on them.

41.0 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.

42.0 Drilling and Punching:

- 42.1 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.
- 42.2 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.
- 42.3 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.
- 42.4 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.

43.0 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.

44.0 Galvanizing and Painting:

- 44.1 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 61.0 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.
- 44.2 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.
- 44.3 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.

44.4 EARTHING SYSTEM

44.4.1 General

- (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) For transformer earthing, two electrodes are to be connected to treated earth pits and the same shall be connected to the existing earth mat. Also, LAs on HV and LV side of transformers are to be earthed using one electrode which shall be connected to the earth mat.
- (f) 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.
- (g) Placing of electrodes should be such that if the length of earth electrode is "l", the next electrode should be placed at "2l" distance from the 1st.
- (h) 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.
- (i) 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.
- (j) 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.
- (k) 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.
- (l) 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.
- (m) All lighting panels, junction boxes, receptacles fixtures, conduits etc. shall be grounded in compliance with the provision of I.E. rules
- (n) 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
- (o) 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.
- (p) 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.
- (q) The 75x12mm GI flat shall be clamped with the equipment support structures at 1000mm interval.

- (r) 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.
- (s) 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.
- (t) All earthing activities shall conform to the Code of practice for Earthing IS: 3043 and as directed by the site-incharge.
- (u) Installation of Ground wire is to be done as instructed by Engineer-in-Charge.

44.4.2

Details of Earthing System

Sl. No.	Item	Size	Materials
1	Main Earthing Conductor to be buried in ground	65 mm x 12 mm	GI Flat
2	Conductor above ground & earthing leads (for equipment), Risers.	65 mm x 12 mm	GI Flat
3	Conductor above ground & earthing leads(for columns & aux. structures), Risers	65 mm x 12 mm	GI Flat
4	Earthing of indoor LT panels, Control panels and outdoor marshalling boxes, MOM boxes, Junction boxes& Lighting Panels etc.	50 mm x 6 mm	GI Flat
5	Rod Earth Electrode	40mm dia, 3000 mm long	Mild Steel
6	Pipe Earth Electrode (in treated earth pit) as per IS 3043.	40mm dia, 3000 mm long	GI Pipe
7	Earthing conductor along outdoor cable trenches	50mm x 6 mm	GS Flat

45.0

Civil works:

45.1

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, footings of column, steps 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., 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.

45.2 **SURFACE PREPARATION AND STONE SPREADING INCLUDING PCC SPECIFICATIONS**

- 45.2.1 Before taking up PCC base (pro 1:3:6) and stone filling, the area shall be thoroughly de-weeded including removal of roots and recovery of existing gravel.
- 45.2.2 The Contractor shall have to prepare the site by earth cutting or filling as per site condition to arrive at the required level as specified by the Department. **Contractors are advised to visit relevant sites to assess the requirement of earthwork before quoting.**
- 45.2.3 The surface of the switchyard area shall be maintained, rolled/ compacted to the lines and grades as decided by Engineer-in-Charge. De-weeding including removal of roots shall be done before rolling is commenced. Engineer-in-Charge shall decide final formation level so as to ensure that the site appears uniform devoid of undulations.
- 45.2.4 A base layer of PCC of 80 mm thickness with proportion of 1:3:6 shall be provided before spreading of crushed rocks. PCC base shall be done in panels of 4 m x 4 m with expansion gap of 25 mm between panels. The gap shall be filled with bitumen. Each panel shall be provided with four (4) numbers of PVC pipes (per panel) of 100 mm dia of length 450 mm for soaking of water. The pipes will be provided with gratings at the top and the same will be flushed with the PCC top.
- 45.2.5 Over the PCC layer, a surface course of minimum 100 mm thickness of broken stone shall be spread. For this purpose, the recovered gravel from the switchyard shall be used. Any additional quantity of gravel required to achieve 100mm thickness shall be supplied by the contractor.
- 45.2.6 The ground leveling activities should be done in such a manner that after construction of PCC and spreading of gravel as per specified requirements, clearance from the top of the gravel layer to the plinth should be a minimum of 300mm.
- 45.2.7 The Bidder should note that the price quoted shall be inclusive of cost of all activities for site preparations, such as clearing the area, earth filling, earth cutting, levelling etc. It is advised that the Bidders should visit the concerned sites before finalising their bids.

46.0 TECHNICAL SPECIFICATION OF POWER AND CONTROL CABLES

- 46.1 Aluminium conductor XLPE insulated armoured cables shall be used for main power supply purpose from LT Aux. Transformers to control room only.
- 46.2 Aluminium conductor PVC insulated armoured power cables shall be used for various other applications in switchyard area/control room except for control/protection purposes.
- 46.3 For all control/protection/instrumentation purposes PVC insulated armoured control cables of minimum 2.5 sq. mm Size with stranded Copper conductors shall be used.
- 46.4 Cables shall be laid conforming to IS : 1255.
- 46.5 While preparing cables schedules for control/protection purpose following shall be ensured:
- 46.5.1
- Separate cables shall be used for AC & DC.
 - For different cores of CT & PT/CVT separate cable shall be used
 - At least one (1) cores shall be kept as spare in each copper control cable of 4C, 5C or 7C size whereas minimum no. of spare cores shall be two (2) for control cables of 10 core or higher size.
- 46.5.2 For control cabling, including CT/VT circuits, 2.5 sq.mm. size copper cables shall be used per connection. However, if required from voltage drop/VA burden consideration additional cores shall be used. Further, for potential circuits of energy meters separate connections by 2 cores of 2.5 sq.mm. size shall be provided.
- 46.6 Standard technical data sheets for cable sizes up to and including 1100V are enclosed at **Clause 48.0**. Cable sizes shall be offered / manufactured in accordance with parameters specified in standard technical data sheets. Technical data sheet for any other cores/sizes required during detailed engineering shall be separately offered for Employer's approval by the contractor/supplier.

47.0 TECHNICAL REQUIREMENTS

47.1 General

The cables shall be suitable for laying in racks, ducts, trenches, conduits and underground buried installation with uncontrolled back fill and chances of flooding by water.

The XLPE insulated cables shall be capable of withstanding a conductor temperature of 250°C during a short circuit without any damage. The PVC insulated cables shall be capable of withstanding a conductor temperature of 160°C during a short circuit.

The Aluminium/Copper wires used for manufacturing the cables shall be true circular in shape before stranding and shall be uniformly good quality, free from defects. All Aluminium used in the cables for conductors shall be of H2 grade. In case of single core cables, armours shall be of H4 grade Aluminium.

The fillers and inner sheath shall be of non-hygroscopic, fire retardant material, shall be softer than insulation and outer sheath shall be suitable for the operating temperature of the cable.

Progressive sequential marking of the length of cable in metres at every one metre shall be

provided on the outer sheath of all cables.

Strip wire armouring method shall not be accepted for any of the cables. For control, cables only round wire armouring shall be used.

The cables shall have outer sheath of a material with an oxygen index of not less than 29 and a temperature index of not less than 250°C.

All the cables shall pass fire resistance test as per IS:1554 (Part-I)

The normal current rating of all PVC insulated cables shall be as per IS:3961.

Repaired cables shall not be accepted.

Allowable tolerance on the overall diameter of the cables shall be plus or minus 2 mm.

47.2 XLPE Power Cables

The XLPE (90°C) insulated cables shall be of FR type, C1 category conforming to IS: 7098 (Part-I) and its amendments read along with this specification. The conductor shall be stranded aluminium circular/sector shaped and compacted. In multicore cables, the core shall be identified by red, yellow, blue and black coloured strips or colouring of insulation. A distinct inner sheath shall be provided in all multicore cables. For XLPE cables, the inner sheath shall be of extruded PVC of type ST-2 of IS:5831. When armouring is specified for single core cables, the same shall consist of aluminium wires/strips. The outer sheath shall be extruded PVC of Type ST-2 of IS:5831 for all XLPE cables.

47.3 PVC Power Cables

The PVC (70°C) insulated power cables shall be of FR type, C1 category, conforming to IS: 1554 (Part-I) and its amendments read along with this specification and shall be suitable for a steady conductor temperature of 70°C. The conductor shall be stranded aluminium. The insulation shall be extruded PVC to type-A of IS: 5831. A distinct inner sheath shall be provided in all multicore cables. For multicore armoured cables, the inner sheath shall be of extruded PVC. The outer sheath shall be extruded PVC to Type ST-1 of IS 5831 for all cables.

47.4 PVC Control Cables

The PVC (70°C) insulated control cables shall be of FR type C1 category conforming to IS: 1554 (Part-1) and its amendments, read along with this specification. The conductor shall be stranded copper. The insulation shall be extruded PVC to type A of IS: 5831. A distinct inner sheath shall be provided in all cables whether armoured or not. The over sheath shall be extruded PVC to type ST-1 of IS: 5831 and shall be grey in colour.

Cores shall be identified as per IS: 1554 (Part-1) for the cables up to five (5) cores and for cables with more than five (5) cores the identification of cores shall be done by printing legible Hindu Arabic Numerals on all cores as per clause 10.3 of IS 1554 (Part-1).

48.0 DATA SHEET FOR CABLES

A. For Power Cables

Sl. No.	Description	3 ½ C 300mm ²	Other Power Cables	
			70 mm ² , 35 mm ² , 25mm ² , 16 mm ²	6 mm ² & 4mm ²
1	Applicable Standard	IS: 7098/PT-I & its referred standards	IS: 1554/PT-I& its referred standards	
2	Type Designation	A2XWY	AYFY	AYWY
3	Rated Voltage(volts)	1100	1100	1100
4	Type & Category	FR & C1	FR & C1	FR & C1
5	Suitable for earthed or unearthed system	Suitable for both		
6	Conductor			
	a) Material	Stranded Aluminium as per IS : 8130		
	b) Grade	H 2 (Electrolytic grade)		
	c) Number of wires(No.)	As per IS 8130		
	d) Form of Conductor	Stranded compacted circular/sector shaped	Stranded compacted circular/sector shaped	Non-compactd Stranded circular
	e) Direction of lay of stranded layers	Outermost layer shall be R.H lay & opposite in successive layers		
7	Insulation			
	a) Composition of insulation	Extruded XLPE as per IS-7098 Part(1)	Extruded PVC type A as per IS-5831	Extruded PVC type A as per IS-5831
	b) Thickness of insulation(mm)	As per applicable Standard		
8	Inner Sheath material	Extruded PVC type ST-2 as per IS-5831	Extruded PVC type ST-1 as per IS- 5831	
9	Type and material of armour	Gal. Steel wire	Gal. Steel strip	Gal. Steel wire
10	Outer Sheath (PVC)	ST-1 & FR	ST-2 & FR	ST-2 & FR
11	Overall diameter of cable	As per applicable Standard		

B. For Control Cable

Sl. No.	Description	Particulars
1	Applicable Standard	IS: 1554/PT-I & its referred standards
2	Type Designation	YWY
3	Rated Voltage(volts)	1100
4	Type & Category	FR & C1
5	Suitable for earthed or unearthed system	Suitable for both
6	Conductor	
	a) Material	Plain annealed High Conductivity stranded

		Copper (as per IS 8130)
	b) Grade	Electrolytic
	c) Number of wires (No)	As per IS 8130
	d) Form of Conductor	Non-compacted Stranded circular
	e) Direction of lay of stranded layers	Outermost layer shall be R.H lay
7	Insulation	
	a) Composition of insulation	Extruded PVC type A as per IS-5831
	b) Thickness of insulation	As per applicable Standard
8	Inner Sheath material	Extruded PVC type ST-1 as per IS-5831
9	Type and material of armour	Gal. Steel wire
10	Outer Sheath (PVC)	ST-1 & FR
11	Overall diameter of cable	As per applicable Standard
12	No. of Cores	As per Price Schedule

49.0 TECHNICAL SPECIFICATIONS FOR GI FLAT

Scope

The specification provides for design, manufacturing, testing before dispatch for dip Galvanizes flats of size 65x12 and 50x10 mm

MS flat shall conform to IS 2062 & its latest amendments for steel & Galvanization as per IS 4759 & its Latest amendments

The flat shall be coated with Zn 98 Zinc grade

The minimum Zinc coating shall be 610 gm/sqm

Inspection & Rejection

The representative of AEGCL shall pick up samples at random from the GI Flat offered for carrying out routine tests as per specified IS

The Representative of AEGCL shall make visual inspection on each & every GI Flats

The purchaser reserves the right to reject on inspection after the same is received at destination.

50.0 Service Conditions:

50.1 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.

51.0 Contract Agreement:

- 511 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 15 (fifteen) days from the date of issue of the LOI/Work Order.
- 51.2 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.

52.0 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.

53.0 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.

54.0 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 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.

55.0 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.

56.0 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.

56.0 ERECTION TESTING AND COMMISSIONING

57.1 The erection, testing and commissioning of all 33 kV equipments should be done in the presence of authorized representative of AEGCL.

57.2 The pre-commissioning checklist will be further developed by the contractor and will seek approval prior to commencement of pre-commissioning tests from the DGM, MRT Circle, AEGCL. The tests will be witnessed and approved by him or by his authorized officers

ANNEXURE

Annexure-I

Tender Proforma part- I (Techno-commercial Bid)

Bid No.- BID NO: AEGCL/DGM/TTC/TEZ/T-20/2020/110

Date:29/10/2020

Sl. No.	Particulars	Bidder's response
1	Name and full address of the Bidder	
2	Details of EMD BG	
3	GST registration	
4	Acceptance of LD clause	YES/NO?
5	Acceptance of terms of payment	YES/NO?
6	Bid Validity	
7	List of documents enclosed	i) ii)
8	Bidders representative: Name Designation Phone Email	

Signature with full name and designation of bidder or his/her authorised representative with seal

Annexure-II

BIDDERS INFORMATION SHEET

Bidder's legal name	
Bidder's country of constitution	
Bidder's year of constitution	
Bidder's legal address in country of constitution	
Bidder's authorized representative (name, address, telephone numbers, e-mail address)	

Signature with full name and designation of bidder or his/her authorised representative with seal

Annexure-III

BIDDER'S QUALIFICATION(A):

Sl No.	Qualification Requirement	Write yes if valid document is available and uploaded
1	Trade License / Firm Registration Certificate	
2	PAN Card	
3	GST registration certificate	
4	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.	
5	Name, qualifications of the technical supervisors and staff under the employment of the tenderer	
6	Copy of Labour License	

Signature with full name and designation of bidder or his/her authorised representative with seal

Annexure-IV

BIDDER'S QUALIFICATION(B):

LIST OF ONGOING & COMPLETED WORK/SUPPLY ORDERS:

List of ongoing & completed projects/WO/PO (Include all work in hand PO/WO)				
Sl.No.	Name of the work, Order/PO No with date of WO/PO	Contract value	Completion date	if partially completed, Percentage Completed with remark if any
1				
2				
3				

I/We undertake that I/we have furnished all work in hand and have not suppressed any information related to works being executed by us at present.

Signature with full name and designation of bidder or
his/her authorised representative with seal

Note: Submit supporting documents (Work order, completion certificate, performance certificate etc)

Annexure-V

FINANCIAL RESOURCES

Average annual turn over

Particulars	2017-18	2018-19	2019-20
Annual turnover (in `)			
Average			

Financial resources

Sl. No.	Source of funding (Eg. CC limit, Cash in hand etc)	Amount
1.		
2.		
3.		

Note: Furnish supporting financial documents (balance sheet/P&L statement/Cash flow statement/Bank's solvency certificate etc)

Signature with full name and designation of bidder or
his/her authorised representative with seal

Annexure-VI

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)

Bank's Name, and Address of Issuing Branch or Office

Beneficiary:[Name and Address of Employer]

Date:

Bid Security No.:

We have been informed that [name of the Bidder in full].....(hereinafter called "the Bidder") has submitted to you its bid dated[Date] (hereinafter called "the Bid") for the execution of [name of contract].. . . . under Invitation for Bids No..... ("the NIT").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we [name of Bank]. hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of [amount in figures] [amount in words] . . . upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

- (a) Has withdrawn its Bid during the period of bid validity specified by the Bidder in the Form of Bid; or
- (b) Does not accept the correction of errors in accordance with the bid; or
- (c) Having been notified of the acceptance of its Bid by the Employer during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the Performance Security, in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the Contract Agreement signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and

(b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy your notification to the Bidder of the name of the successful Bidder; or (ii) twenty-eight days after the expiration of the Bidder's bid.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

Bank's seal and authorized signature(s)

NB: To be signed by two Bank official if BG value is equal to or above 50,000.00. BG should be evocable at Guwahati. All italicized text is for use in preparing this form and shall be deleted from the final document

Annexure-VII

Form of performance security Bank Guarantee

(To be stamped in accordance with Stamp Act)

To

The Managing Director
AEGCL, 1st Floor, Bijuli Bhawan,
Paltanbazar, Guwahat -01

WHEREAS _____ (name and address of Contractor) (hereinafter called “The Contractor”) has undertaken, in pursuance of LOA / Contact No. _____ to be execute _____ (name of Contact and brief description of Works) (hereinafter called “ the Contract”)

AND WHEREAS it has been stipulated by you in the said LoA / Contract that the Contractor shall furnish you with a Bank Guarantee by a recognized/scheduled bank for the sum specified therein as security for compliance with its obligations in accordance with the LoA / Contract;

AND WHEREAS we have agreed to give the Contractor such a Bank Guarantee;

NOW THEREFORE we hereby affirm that we are the Guarantor and responsible to you, on behalf of the Supplier / Manufacturer, up to a total of _____ [amount of Guarantee] _____ [in words], such sum being payable in the currencies in which the Contract Price is payable, and we undertake to pay you, upon your first written demand and without cavil or argument, any sum or sums within the limits of _____ amount of [Guarantee] as aforesaid without your needing to prove or to show grounds or reasons for your demand for the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Supplier/Manufacturer before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the Contract or of the scope to be performed thereunder or of any of the Contract documents which may be made between you and the Contractor shall in any way release us from any liability under this guarantee, and we hereby waive notice of any such change, addition or modification.

This guarantee shall be valid until the date, 30 days beyond the Warranty Period as per the Contract.

Signature and Seal of the Guarantor _____
Name of Bank _____
Address _____

NB: To be signed by two Bank official if BG value is equal to or above 50,000.00. BG should be invokable at Guwahati. All italicized text is for use in preparing this form and shall be deleted from the final document

Form "Manufacturer's Authorization"

[The Bidder, in pursuant to Evaluation and Qualification Criteria (if applicable) shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer. Please refer to notes at bottom]

(Manufacturer's Letterhead)

Date: *[insert date (as day, month and year) of Bid Submission]*

Bid No.: *[insert number of bidding process]*

To: *[Insert: full name of Purchaser]*

WE *[insert: name of Manufacturer]* who are established and reputable manufacturers of *[insert: name and/or description of the Goods]* having production facilities at *[insert: address of factory]* do hereby authorize *[insert: name & address of Bidder]* (hereinafter, the "Bidder") to submit a bid the purpose of which is to provide the following goods, manufactured by us, and to subsequently negotiate and sign the Contract:

1. -----
2. -----
-

We hereby extend our full guarantee and warranty in accordance with **Clause 23.0** of the Special Conditions of Contract, for the above specified Goods supporting the Supply of specified Goods and fulfilling the Related Services by the Bidder against this Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations. We also hereby declare that, we will furnish the Performance Guarantee in accordance with **Clause OF BID**. Further, we also hereby declare that we and *[insert: name of the Bidder]* have entered into a formal relationship in which, during the duration of the Contract (**including related services and warranty / defects liability**) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Signed: _____

Date: _____

In the capacity of *[insert: title of position or other appropriate designation]* (and this should be signed by a person having the power of attorney to legally bind the manufacturer).

Date:.....

Place:.....

(Signature).....

(Printed Name).....

(Designation).....

(Common Seal).....

Notes:

1. The letter of Undertaking should be on the letterhead of the Manufacturer and should be signed by a person competent and having **Power of Attorney to sign on behalf of the Manufacturer** (to be attached with this MANUFACTURER'S AUTHORIZATION) to legally bind the Manufacturer. It shall be included by the bidder in its bid.

2. Above undertaking shall be registered or notarized so as to be legally enforceable.