ASSAM ELECTRICITY GRID CORPORATION LIMITED

Regd. Office:1st floor, Bijulee Bhawan, Paltanbazar, Guwahati-781001

CIN: U40101 AS2003SGC007238

web: www.aegcl.co.in

Bidding Document

For

Procurement of 33kV motorized isolators and replacement of existing 33kV manually operated isolators at 132kV Rowta GSS

a) **33kV Isolator with earth switch (33kV Paneri Fdr, 33kV Mazbat Fdr, 33kV Rowta fdr): 3Sets.**
b) 33kV Isolator without earth switch (33kV Dalgaon Fdr:1 Set)

DEPUTY GENERAL MANAGER

TEZPUR T&T CIRCLE

AEGCL, TEZPUR-784154

Tender Cost: ₹ 1000.00

EMD: ₹19,000.00

BID NO: AEGCL/DGM/TTC/TEZ/T-20/2024/243 Date:15.06.2024

For & on behalf of the **Managing Director, AEGCL, the Deputy General Manager, Tezpur T&T Circle, AEGCL, Kunderbari, Depota,** invites tenders in prescribed form, from reputed Firms/Contractors/Manufacturers 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 Cost In INR	Time of completion In Days
1	**Procurement of 33kV motorized isolators and replacement of existing 33kV manually operated isolators at 132kV Rowta GSS** a) **33kV Isolator with earth switch (33kV Paneri Fdr, 33kV Mazbat Fdr, 33kV Rowta fdr): 3sets.** b) **33kV Isolator without earth switch (33kV Dalgaon Fdr:1 set)**	**9,38,445.00**	**60 days from the date of issue of dispatch clearance**

1.0 Cost of Bidding Document:

Bidder must 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 AEGCL, 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.**

2.1 **Key Dates: -**

a. Bid Document available date: **10:00 hrs of 15.06.2024**
b. Bid Submission Start Time & date: **11:00 hrs of 15.06.2024**
c. Bid Submission end time & date: **11:00hrs of 06-07-2024**
d. Techno-Commercial Bid Opening time: **12:00hrs of 06-07-2024**
e.

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.

4.0 Bid Security:

4.1 All bids must be accompanied by a bid security amounting to **Rs. 19,000.00** only in the form of Bank Guarantee/Demand Draft from any Nationalized Bank payable at Guwahati in favour of **AEGCL, Bijulee Bhawan, Paltanbazar, Guwahati-01.**

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 15 (fifteen) days' time.

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 prevailbid

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 initialed by the person signing the bid.

5.3 A bid submitted by a JV shall be signed to be legally binding on all partners.

5.4 Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed 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 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 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 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.

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 2,82,000.00** 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 **2,82,000.00** and
(2) the overall cash flow requirements for this contract and its current works commitment.

9.0 Experience:

9.1 Experience on similar nature of works 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. Bidder may be manufacturer of the offered products or a firm/company having authorization from a manufacturer. In case the bidder is not a manufacturer of the offered products, bidder must submit manufacturer's authorization

9.2 Participation as manufacturer, contractor Experience having successfully completed similar works during last 7 years ending last day of the month before the one in which applications are invited should be either of the following:

(a) Three (3) similar completed works costing not less than **3,76,000.00.**
(b) Two (2) similar completed works costing not less than **4,70,000.00**
(c) One (1) similar completed works costing not less than **7,51 ,000.00**

9.3 The Bidder must have experience of executing work of similar nature previously. The bidder must submit experience and completion certificate for scrutiny by AEGCL**.** 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 *Bid Clause***. 6.0**, Eligibility, Cl. No. 7.0, Financial Capability, Cl. No. **8.0**.,, Experience 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.

10.6 The following methodology will be practiced for identification and treatment of the Abnormally Low Bids (ALB) in this tender process of AEGCL:
(i) Absolute Approach is to be considered when there is fewer than five substantially responsive bidders and if the bid price is 20% or more below AEGCL's cost estimate then AEGCL's tender evaluation committee should clarify the Bid price with the bidder to determine whether the Bid is
Abnormally low.
(ii) Relative approach is to be considered when there are at least 5(five) nos. of substantially responsive bids and the lowest bid price is 20% or more below AEGCL's cost estimate. In

this approach, first the Average bid price is determined and then by deducting the standard deviation from the Average bid price, potentially ALB may be determined.

(iii) In case of an ALB, the tender evaluation committee/appropriate authority of the respective tenders shall undertake the following three stage review process which is as below:

- To identify ALB as per the steps mentioned in SI no. 10.6.(i) and 10.6.(ii), whichever is applicable.
- To seek and analyses the clarifications from the abnormally low Bidder in terms of resource inputs and pricing, including overheads, contingencies, and profit margins. In that respect, the committee may refer to guideline of World Bank, AIIB, ADB etc. prescribed for ALB.
- To decide whether to accept or reject the bid.
- On acceptance of the bid, whether Additional Performance Security is to be imposed on the bidder supplemented by adequate justification.

(iv) In case of acceptance of ALB with Additional Performance Security:

- If any abnormally low bid is accepted with additional performance security, it is to be noted that the total performance security should not exceed 20% of the total contract value.
- The additional performance security shall be treated as part of the original performance security and shall be valid for a period similar to that applicable for defect liability period of the contract.
- Non submission of the additional performance security shall constitute sufficient ground for rejection of the bid and similar assessment shall then be initiated for next ranked bidder if that bidder is also identified as ALB.

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 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 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 Sales Tax, 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 must 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 been 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 work contract, 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:

15.3.1 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 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.

15.3.3 In case the tenderer is a partnership Firm, the work experience, solvency and turn over shall be in the name of partnership Firm only.

15.3.4	GST registration No., Latest Bank solvency
15.3.5	Registered Power of attorney, if any.

15.3.6	I T Return for last three Years
15.3.7	Profit and Loss and Audited Balance Sheet for last three years
15.3.8	All other information and documents such as Guaranteed and Technical Particulars, type test reports, drawings etc., as required in the Technical Specification
15.3.9	In case the bidder is not a manufacturer of the offered products, bidder must submit manufacturer's authorization
15.3.10	Updated Labour license
15.3.11	Updated electrical license 33kV or above

16.0 Negotiation with successful bidder:

	The AEGCL reserve the right to negotiate 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 REQUIREMENTS**
17.1	**Intent of specification**
	This section of the specification deals with the technical information & criteria for **"Procurement of 33kV motorized isolators and replacement of existing 33kV manually operated isolators at 132kV Rowta GSS** a) **33kV Isolator with earth switch (33kV Paneri Fdr, 33kV Mazbat Fdr, 33kV Rowta fdr): 3sets.** b) **33kV Isolator without earth switch (33kV Dalgaon Fdr:1set)"** The Contractor's proposal shall be based on the use of materials complying fully with the requirements specified herein.
18.0	**Scope** The major scopes of work are as follows: - a) Supply, delivery of 1. 33kV Isolator with earth switch (33kV Paneri Fdr, 33kV Mazbat Fdr, 33kV Rowta fdr): 3sets. 2. 33kV Isolator without earth switch (33kV Dalgaon Fdr:1 set)" as mentioned in the bid b) Transportation and movement of supplied materials up to the site and arrangements of any permits required for transportation of supplied materials. However, AEGCL shall assist as far as practicable in the process. c) Transit insurance shall be in the scope of the contractor. d) Replacement of old 33kV manually operated isolators, modification/fabrication of mounting structures if required and Erection, testing and commissioning of the new 33kV motorized isolators as specified in Price Bid The works to be executed shall be as per the items mentioned in the Price Bid and as per the directions of the site engineer.
19.0	**Contractor to inform himself fully**
19.1	The Contractor 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.
19.2	The Employer shall not be responsible for any misunderstanding or incorrect information obtained by the Contractor other than information given to the Contractor in writing by the

	Purchaser
20.0	**Conformity with Indian Electricity rules & other local regulations:**
20.1	The Contractor 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.
20.2	The materials 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.
20.3	The Contractor shall also comply with the Minimum Wages Act 1948 and the payment of Wages Act (both. Of the Government of India and State of Assam) and the rules made there under in respect of any employee or workman employed or engaged by him or his Sub-Contractor.
20.4	All registration and statutory inspection fees, if any, in respect of his work pursuant to this Contract shall be to the account of the Contractor. However, any registration, statutory inspection fees lawfully payable under the provisions of the statutory laws and its amendments from time to time during erection in respect of the Substation Works, ultimately to be owned by the Employer, shall be to the account of the Employer. Should any such inspection or registration need to be re-arranged due to the fault of the Contractor or his Sub-Contractor, the additional fees to such inspection and/or registration shall be borne by the Contractor.
20.5	In case of any conflict between the standards and this specification, this specification shall govern.
21.0	**Drawing and Documents**
21.1	All necessary drawings and documents required for completion of the project is to be submitted by the contractor for approval. The drawings provided with bid (if any) are for indicative purpose only and fresh drawings are to be prepared by the contractor as per actual site condition after survey. The drawings and documents are to be approved by AEGCL.
22.0	**Employer Supervision**
22.1	The scope of the duties of the Employer, pursuant to the contract, will include but not be limited to the following. a) Witness or authorize his representative to witness works at site. b) Inspect, accept, or reject any material and work under the Contract. c) Issue certificate of acceptance and/or progressive payment and final payment certificate. d) Review and suggest modification and improvement in completion schedules from time to time. e) Issue completion certificate.
23.	**Packing:**
23.1	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.
23.2	The Supplier shall include and provide for securely protecting and packing the materials to avoid loss or damage during transport by air, sea, rail, and road.
23.3	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.
23.4	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.
23.5	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.
24.	**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 dispatch clearance will be provided only after Employer is satisfied.
25.0	**TECHNICAL SPECIFICATIONS OF 33kV MOTORIZED ISOLATORS**

	Type:	**33 kV**
I	**II**	**III**
1	Main switch	Horizontal Double break

		2	Service	Outdoor
		3	Applicable standard	IS : 9921 / IEC-62271-102
		4	No. of Phases	3 phase
		5	Design Ambient temperature	50°C
		6	Rated voltage (kV)	In KV
			a) Nominal	33
			b) Maximum	36
		7	Rated current (Amps)	1250
		8	Short time withstand current for 3sec.(kA)	25KA with 62.5 KA peak
		9	Rated frequency	50 HZ ± 5%
		10	System earthing	Effectively earthed
		11	Temperature rise	As per relevant IS/IEC standards
		12	Lightening Impulse withstand voltage (kVp)	
			(a) Across Isolating distance	195
			(b) To earth	170
		13	1-minute power frequency withstand voltage	
			a) Across Isolating distance	80
			b) To earth	70
		14	Switching Impulse withstand voltage (kVp)	
			a) Across Isolating distance	-
			b) To earth	-
		15	Max. RIV for frequency between 0.5MHz and 2MHz (micro-volt)	-
		16	Corona Extinction Voltage (kV)	-
		17	Operating mechanism	
			a) Isolator	Motorised & Manual
			b) Earth switch	Manual
		18	Auxiliary voltage	
			a) Control & Interlock	110V DC 80% to 110%
			b) Motor voltage	3 Phase 415V AC 50Hz
			c) Heater, lamp & socket	Single phase 240 V 50HZ
		19	Safe duration of overload	
			150% of rated current	5 minute
			120% of rated current	30 minute
		20	Minimum creepage distance of insulator (mm)	25mm/kV
		21	Operating time	Less than 12 secs
		22	Insulator Data	
			a) Bending Strength (kgf)	600
			Type:	**33 kV**
			b) Height (mm)	508
			c) Bottom PCD (mm)	76
			d) No. of holes & hole dia.	4xM12
			e) Top PCD	76
			f) No. of holes & hole dia.	4xM12
			g) Minimum creepage distance (mm) 31mm/kV	1116
		23	Working clearance (live part to ground) (in mm)	4000
		24	Phase Spacing (mm.)	1500
		25	Minimum clearances in air (mm.)(Centre to centre)	
			a) Phase to Phase	1500
			b) Phase to earth	508

			c) Across isolating distance	800
			d)Between rotating and fixed post on one phase	450(min)
		26	Temperature rise above ambient of 50 degree C at rated current (degree C)	Within limit as per table IV of IS :9921(pt. nl - 1982.

26.0 **SCOPE**

This specification provides for design, manufacturer, testing at manufacturer's Works and delivery of outdoor station type 33KV, Isolator with/ without earth switches, with electrical interlock, insulators and complete in all respect with bimetallic connectors arcing horns operating mechanism, auxiliary switches, indicating devices, fixing detail etc. as described hereinafter.

26.1 **STANDARDS**

Disconnecting switches covered by this specification shall conform to latest edition IEC-129/IEC 62271-102 I.S.1813 and IS: 9921, IS-325 and unless specifically stated otherwise in this specification.

26.2 **TYPE**

The 33KV Isolators (SI or DI) shall be outdoor type with three phase double break center rotating manual as well as motor operated(with provision for manual operation) type with local/remote operation. They shall have crank and reduction gear mechanism.
All Isolators offered shall be suitable for horizontal upright mounting on steel structures. Each pole unit of the multiple Isolators shall be of identical construction and mechanically linked for gang operation.
Each pole of the Isolator shall be provided with two sets of contacts to be operated in series and the moving contact blades shall rotate in horizontal plane.
The design shall be such that the operating mechanism with the linkages shall be suitable for mounting on any of the outer pole ends without much difficulty and with minimum shifting of parts.
Moving contacts of all isolators shall rotate through 90 deg. from their "fully closed position" to "fully open position so that the break is distinct and clearly visible from ground level.
The Isolators offered by the Bidder shall be designed for Normal rating current for Isolator as follows:

Voltage	33kV
Current	1250A

It should suitable for continuous service at the system voltages specified herein. The Isolators shall be suitable to carry the rated current continuously and full short circuit current of 31.5 KA for 33 KV for 1 second at site condition without any appreciable rise in temperature. These shall also be suitable for operation at 110% rated (normal) voltage. The Isolators shall be suitable for Isolating low capacitive / inductive currents of 0.7amp at 0.15 power factor. The isolators shall be so constructed that they don't open under the influence of short circuit conditions.
The Isolators and earthing switches are required to be used on electrically exposed installation and this should be taken into account while fixing the clearance between phases and between phase and earth.

26.3 **MAIN CONTACTS**
All Isolators shall have heavy duty, self-aligning and high-pressure line type contacts made of high conductivity, corrosion resistant, hard-drawn electrolytic copper strips of proper thickness

	and contact area. Fixed contact should consist of loops of above copper strips suitable for 1250Amps ratings for 33KV Isolators. The hard dawn electrolytic copper strips should be silver plated 25micron thickness and fixed contacts should be backed by powerful phosphor bronze/stainless steel springs of suitable numbers. The main contacts should be preferably of tulip type design. However, the thickness and contact area of the contact should conform to the drawing approved during type test. Moving contact with moving arm should be of hard- drawn electrolytic copper of proper thickness and contact area. These fixed and moving contacts shall be able to carry the rated current continuously and the maximum fault current of 31.5 KA for 33KV for 1 seconds without any appreciable rise in temperature. The Isolator blades shall retain their form and straightness under all conditions of operation including all mechanical stress arising out of operation as well as under rated short circuit condition. Fixed guides shall be provided so that even when the blades are out of alignment by one inch (maximum), closing of the switches, proper seating of the blades in between contacts and adequate pressure to give enough contact surface is ensured. Wherever possible, the blades shall be counter balanced by weights and springs. The contact shall be self-cleaning by the wiping action created by the movements of the blades. The surface of the contacts shall be tendered smooth and silver plated (25 micron). The Isolator shall be self-cleaning type so that when isolators remain closed for long periods in a heavily polluted atmosphere, binding does not occur. No undue wear or scuffing shall be evident during the mechanical endurance tests, contacts and springs shall be designed so that adjustment of contact pressure shall not be necessary throughout the life of the isolator. Each contact or part of contacts shall be independently sprung so that full pressure is maintained on all contact at all times.
26.4	**ARCING HORN AND GRADING HORN** Suitable arcing horn made of tinned electrolytic copper which are required for guiding contacts shall be provided on the fixed and moving contacts of all Isolators. The contacts shall be of 'make before and break after" type.
26.5	**ELECTRICAL INTERLOCK / MECHANICAL INTERLOCK** The disconnecting switches whenever required shall be with an approved type electrical interlock for interlocking with the associated circuit breakers and earth switch. Electrical interlock assembly should be more right in construction and properly mounted to ensure reliable operation. The design should be such that the electrical circuit for the interlocking mechanism will only remain energised during operation of the switches.
26.6	**AUXILIARY SWITCHES** All isolators and earthing switches shall be provided with 110V DC auxiliary switches for their remote position indication on the control board and for electrical locking with other equipment. The auxiliary switch shall be provided with a minimum of six auxiliary contacts- 10 normally open and 10 normally closed and 10 normally open and 10 normally closed for earth switch. Separate auxiliary switches shall be provided for isolating and earth switches. 6 additional NO and NC contact to be provided as spare in each case. The auxiliary switches and auxiliary circuits shall have a continuous current carrying capacity of at least 10 Amps. Auxiliary switches shall not be used as limit switches. Details of make, rating and type of limit switch shall be furnished in the offer.
26.7	**EARTH SWITCH** Line earth switch shall consist of three earthing blades for Isolator which normally rest against the frame when the connected Isolator is in closed position. The earthing blades for three phases shall be mechanically linked to a coupling shaft which shall be capable of being fitted on either side of the Isolator. The earthing blades shall match and be similar to the main switch blades and shall be

	provided at the hinge; with suitable flexible conductors with terminal lugs for connecting to the station ground bus. The earthing blades shall be operated by a separate mechanism but shall be mechanically interlocked with the main switch so that the earthing blades can be closed only when the main switches are in open position and vice-versa. The earthing blades shall be gang operated and all the three blades will operate simultaneously.
26.8	**OPERATING MACHANISM** The operating mechanism shall be simple and shall ensure quick and effective 1000 operation. The design shall be such as to enable one man to operate it with nominal effort. The operating mechanism box shall be made out of aluminum extruded (Aluminum alloy) sections of minimum 3.0 mm thickness. The operating mechanism shall be strong rigid and not subject to rebound. The Isolator blades shall be in positive continuous control throughout the entire cycles of operation. The operating rods and pipes shall be rigid enough to maintain positive control under most adverse conditions and to withstand all torsional and bending stresses arising from operation. Operation of the switches at any speed should not result in improper functioning, in displacement of parts / machines after final adjustment has been made. All holes in cranks, linkages etc. having moving pins shall be drilled and fitted accurately so as to prevent slackness and lost motion. Provision shall be made for padlocking the operating mechanism of disconnecting and earth switches in both open and closed positions. Bearings shall be ball and roller type shall be protected from weather and dust by means of cover and grease retainers. Bearings pressures shall be kept low to ensure long life and care of operation. Each power operated isolator shall be motor driven as well as manually operated and shall be complete with local / remote selector switch and open / close push buttons. The function of all control facilitates operating isolators. Provision shall be made in the control cabinet to disconnect power supply to prevent local / remote power operation. Limit switches for open and close positions of re-isolations and earth switches. All the terminal blocks to be used in the operating mechanism should of stud type of Poly-amide/Mealmine material of make like Elmex (OAT-6 for non-disconnecting type & OAT –6T for disconnecting type) / connectwell (Equivalent).
26.9	**DESIGN, MATERIALS AND WORKMANSHIP** The live parts shall be designed to eliminate sharp points, edges and similar corona producing surfaces. Where this is impracticable, adequate shields to be provided. All ferrous metal parts shall be hot dip galvanized, as per IS 2629.All metal parts shall be of such materials or treated in such a way so as to avoid rust, corrosion and deterioration due to continued exposure to atmosphere and rain. All current carrying parts shall be made from high conductivity electrolytic copper / aluminium. Bolts, screws and pins shall be provided with standard locking device viz. Locknuts, spring washers, keys etc. and when used with current carrying parts, they shall be made of copper silicon or other high conductivity and wear resistant alloys. The switches should not need lubrication of any parts except at very long interval of five year minimum.
26.10	**PROTECTIVE COATINGS** All ferrous parts including bolts, nuts and washers of the switches assembly shall be galvanized to withstand at least six one minute dips in copper sulphate solution of requisite strength (Prece tests) except the threaded portions which should withstand four dips.
26.11	**INSULATORS** Support insulators for all type of isolators shall be of solid core type. The insulator shall be made of homogeneous and vitreous porcelain of high mechanical and dielectric strength. It shall have sufficient mechanical strength to sustain electrical and mechanical loading on account of wind load, short circuit forces etc. Glazing of the porcelains shall be of uniform dark brown color with a

	smooth surface arranged to shed away raise water. The porcelain shall be free from laminations and other flaws or imperfections that might affect the mechanical or dielectric quality. It shall be thoroughly vitrified, tough and impervious to moisture. The porcelain and metal ports shall be assembled in such a manner and with such material that any thermal differential expansion between the metal and porcelain parts throughout the range of temperature specified in this specification shall not loosen the parts or create under internal stresses which may affect the mechanical or electrical strength or rigidity. The assembly shall not have excessive concentration of electrical stresses in any section or across leakage surfaces. The cement used shall not give rise to chemical reaction with metal fittings. The insulator shall be suitable for water washing by rain or artificial means in service condition. Profile of the insulator shall also conform to IEC-815. Insulator shall have a minimum cantilever strength of 600 Kgs for (33KV and 66kV). Caps to be provided on top of the insulator shall be of high-grade cast iron or malleable steel casting. It shall be machine faced and hot dip galvanized. The cap shall have four numbers of tapped holes spaced on a pitch circle diameter of 127mm. The holes shall be suitable for bolts with threads having anti corrosive protection. The effective depth of threads shall not be less than the nominal diameter of the bolt. The cap shall be so designed that it shall be free from visible corona and shall have radio interference level within 500 micro volts. Casing shall be free from blow holes cracks and such other defects.
26.12	**CONTROL CABINET:** The control cabinet of the operating mechanism shall be made out of minimum 3mm thick aluminium alloy sheet. Hinged door shall be provided with pad locking arrangement. Sloping rain hood shall be provided to cover all sides. 15 mm thick neoprene or better type of gaskets shall be provided to ensure degree of protections of at least IP 55 as per IS 2147/IS-3947. The cabinet shall be suitable for mounting on support structure with adjustment for vertical, horizontal and longitudinal alignment. Details of these arrangements shall be furnished along with the offer.
26.13	**MOTOR:** Motors rated 1 Kw and above shall be suitable for operation on 3 phase, 415 V, 50 HZ supply. Motors of lower rating shall be single phase type suitable for 240V, 50HZ system. It shall be totally enclosed type if mounted outside the control cabinet. The motor shall withstand without damage stalled torque for at least 3 times the time lag of the tripping device. The motor shall, in all other respects, conform to the requirement of I.S. 325.
26.14	**GEAR:** The dis-connector / isolator may be required to operate occasionally, with considerably long idle intervals. Special care shall be taken for selection of material for gear and lubrication of gears to meet this requirement. The gear shall be made out of aluminium bronze or any other better material lubricated for life with graphite or better-quality non-drawing and non-hardening type grease. Wherever necessary automatic relieving mechanism shall be provided suitable relay, Device shall be provided to prevent over loading of the motor. Single phase preventer (for 3 phase meter) shall be provided to operate on open circuiting of any phase and shall trip off the motor. Complete details of the devices shall be furnished in the offer.
26.15	**SPACE HEATERS:** Space heaters suitable for 1 phase 240V AC supply shall be provided for each motor operated operating mechanism to prevent condensation and shall be operated by MCB.
26.16	**TERMINAL BLOCK AND WIRINGS** Each operating mechanism shall be provided with 1100V grade stud type terminal block. All auxiliary switches, interlocks and other terminals shall be wired up to terminal block. The terminal block shall have at least 20% extra terminals. All wiring shall be carried out with 1.1KV grade insulated 2.5 sq.mm. copper wires.

26.17

INTERIOR ILLUMINATION:
A holder suitable for a 240 V lamp shall be provided in each of the motor operated mechanism of three poles & shall be door operated type.

26.18

CONTROL AND AUXILIARY SUPPLY:
A 3-phase switch with MCB for phases and link for neutral, shall be provided for power supply and a 2 pole MCB shall be provided for control supply.

26.19

POSITION INDICATOR:
A position indicator to show the isolator is in ON or OFF position to be provided.

26.20

NAME PLATE:
Isolator, earthing switches and their operating devices shall be provided with name plate. The name plate shall be weatherproof and corrosion proof. It shall be mounted in such a position that it shall be visible in the position of normal service and installation. It shall carry the following information duly engraved or punched on it.

A. Isolator Base

Name: AEGCL
Name of manufacturer –
Order No. –
Type Designation –
Manufacturers serial No. –
Rated voltage –
Rated normal current –
Rated short time current (rms) and duration –
Rated short time peak current (KAP)
Weight

B. **Earthing Switch**

Name: AEGCL
Name of manufacturer –
Order No. –
Type Designation –
Manufacturers serial No. –
Rated voltage –
Rated normal current –
Rated short time current (rms) and duration
Rated short time peak current (KAP)
Weight

C. Operating Device

Name – AEGCL
Name of manufacturer –
Order No.
Type Designation –
Reduction gear ratio –
AC motor

i) Rated auxiliary voltage
ii) Starting current
iii) Designation of AC motor as per IS 4722/325
iv) Starting torque at 80% of supply voltage
v) Over travel in degrees after cutting off supply

	Total operating time in seconds i) Close operation – Electrical ii) Open operation – electrical iii) Open operation – manual
26.21	**PAINTING GALVANIZING AND CLIMATE PROOFING:** At interiors and exteriors of enclosures, cabinets and other metal parts (other than made up of aluminium) shall be thoroughly cleaned to remove all rust, scales, corrosion, grease and other adhering foreign matter and the surfaces treated by phosphating (e.g. seven tank phosphating sequence). After such preparation of surfaces, two coats of zinc oxide primer shall be given by suitable stoving and air drying before final painting. Colour of the final paints shall be of shade no. 697 of IS:5. The finally painted cubicle shall present aesthetically pleasing appearance free from any dent or uneven surface. Paint inside the metallic housing shall be of anti-condensation type and the paint on outside surfaces shall be suitable for outdoor installation. All components shall be given adequate treatment of climate proofing as per IS:3202 so as to withstand corrosive and severe service conditions. All metal parts not suitable for painting such as structural steel, pipes, rods, levers, linkages, nuts and bolts used in other than current path etc. shall be hot dip galvanized as per IS –2629. Galvanization test will be carried out during routine test. Complete details of painting, galvanizing and climate proofing of the equipment shall be furnished in the offer.
26.22	**TESTS:** **<u>Type Tests:</u>** Isolators offered, shall be fully type tested as per the relevant standards. The Bidder shall furnish Three sets of the following valid type test reports for their different type of offered Isolators along with the offer. The Purchaser reserves the right to demand repetition of some or all the type tests in the presence of purchaser's representative. For this purpose, the Bidder may quote unit rates for carrying out each type test and this will be taken during bid price evaluation, if required. a) short time withstand & peak withstand current test for Isolator & Earth Switch. b) power frequency (Dry & Wet), Lightening Impulse dry withstand Test c) Mechanical endurance Test d) IP-55 test During type tests the isolator shall be mounted on its own support structure or equivalent support structure and installed with its own operating mechanism to make the type tests representative. Drawing of equivalent support structure and mounting arrangements shall be furnished for Purchaser's approval before conducting the type tests. The type tests shall be conducted on the isolator along with approved insulators and terminal connectors. Mechanical endurance test shall be conducted on the main switch as well as earth switch of one isolator of each type. **<u>Acceptance and Routine Test:</u>** All acceptance and routine test as stipulated in the relevant standards shall be carried out by the supplier in presence of Purchaser's representative. Mechanical operation test (routine test) shall be conducted on isolator (main switch and earth switch) at the supplier's works as well as purchaser's substation site. Immediately after finalization of the programme of type / acceptance, routine testing the supplier shall give sufficient advance intimation (clear 20 days advance intimation), along with shop routine test certificates, valid calibration reports from Govt. approved test house for the equipments, instruments to be used during testing for scrutiny by the purchaser to enable him to depute his representative for witnessing the tests. If there will be any discrepancies in the shop routine test certificates and calibration reports furnished by the firm then after settlement of the

	discrepancies only, purchaser's representative will be deputed for witnessing the tests. Special tests proposed to be conducted (if decided to conduct) as type test on isolators, are given at Annexure- II. These special type test charges shall be quoted along with all other type tests as per relevant IEC standard and these charges shall be included in the total bid price. Test certificates of various items including but not limited to the following shall be furnished at the time of routine tests. a) Chemical analysis of copper along with a copy of excise certificate indicating genuine source of procurement of electrolytic grade copper. b) Bearings c) Fasteners d) Universal / swivel joint coupling e) Insulators f) Motor g) Gears h) Auxillary switch i) Limit switch j) Timer k) Overload / single phase preventer relay l) Interlocking devices m) Terminal block n) Any other item
26.23	**INSPECTION:** i) The Purchaser shall have access at all times to the works and all other places of manufacture, where the disconnectors, earth switches and associated equipment are being manufactured and the supplier shall provide all facilities for unrestricted inspection of the works raw materials manufacture of all the accessories and for conducting necessary tests as detailed herein. ii) The supplier shall keep the purchaser informed in advance of the time of starting of the progress of manufacture of equipment in its various stages so that arrangements could be made for inspection. iii) No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested. iv) The acceptance of any quantity of the equipment shall in no way relieve the supplier of his responsibility for meeting all the requirements of this specification and shall not prevent subsequent rejection if such equipment is later found to be defective.
27.0	**TECHNICAL SPECIFICATIONS FOR CONTROL AND POWER CABLE** This technical specification intends to cover the following: Technical specifications for design, engineering, manufacturing, inspection, testing at manufacturer's works, packaging and delivery by road (properly packed in non-returnable steel drums), 6.35/11 kV (Uo/U) Voltage Grade, 4-Core, 4 Sq. mm Stranded Compacted Circular Shaped Aluminium Conductor of H4 Grade, Shielded with extruded Semi-conducting compound, PVC sheathed, GI Round wire armoured Power and 7-Core, 1.5 Sq. mm Stranded Compacted Circular Shaped Copper Conductor of H4 Grade, Shielded with extruded Semi-conducting compound, PVC sheathed, GI Round wire armoured Control Cables for effectively grounded system. The cable shall confirm to the latest revisions of IS: 7098 For cable list refer Annexure-II (Part. 2).
27.1	The cables shall be per the directions of the site engineers. **TESTS**

	All the tests specified below shall be carried out in accordance with the Indian Standards by the manufacturer in the presence of Purchaser's representative. If the cable fails to pass the test specified, the Purchaser shall have the option to reject it. Shipping release shall be obtained from the Purchaser's representative. The Purchaser, however reserves the right to waive off the inspection. The tests at works shall include electrical, mechanical, and hydraulic tests in accordance with the appropriate clauses of Statutory Regulation, relevant codes, and standards, in addition any test called for by the Purchaser or his representative to ensure that the equipment being supplied fulfils the requirement of the specification. For test not covered by any code or specifically mentioned in this specification, the test procedures are to be agreed with the Purchaser.
28.0	**GUARANTEE** All the cables shall be guaranteed against faulty material, defective design & poor workmanship for a period of 18 months from the date of commissioning. The materials becoming defective during the guarantee period shall be replaced free of cost and the defects arising out of the works shall be rectified free of charge without delay.
28.1	**QUALITY ASSURANCE** To ensure that the supply under the scope of this Contract whether manufactured or performed within the Contractor's works or at his Sub Contractor's premises or at site or at any other place of work are in, accordance with the specifications, the Contractor shall adopt suitable quality assurance programme to control such activities at all points necessary The Quality plan shall be mutually discussed and approved by the Employer. The Contractor shall be required to submit all the Quality Assurance Documents as stipulated in the Quality Plan at the time of Employers inspection of equipment/material. 2.8.2 The Employer or his duly authorized representatives reserves the right to carry out Quality Audit and quality surveillance of the systems and procedures of the Contractors/his vendors Quality Management and Control Activities.
29.0	**Dismantling of exisiting 33kV isolator assembly shall have to be done as per the instructions of site incharge.If required, fabrication/modification of existing mounting structures shall be done for erection of new isolators, for which the additional materials will be arranged departmentally,followed by testing and commissioning of the new isolators.**
30.0	**Contract Agreement:**
30.1	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 15 (fifteen) days from the date of issue of the LOI/Work Order.
30.2	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.
31.0	**Liquidated Damage:**
	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:
31.1	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.
31.2	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.
31.3	Contractual failure: - Refer clause No.27.1 of AEGCL's General Conditions of supply and erection 2009.
32.0	**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.
33.0	**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.
34.0	**Warranty:**
34.1	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.
34.2	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 destination. The supplier will provide warranty for the works executed by them.
34.3	If during the Period Warranty any defect is found, the Purchaser shall give Notice to the Supplier/Manufacture 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.

34.4	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.
34.5	The term period of warranty shall mean the period of 18 months from the date of Taking Over of the Work by AEGCL. A Taking over Certificate (TOC) will be issued by the appropriate authority. The successful bidder should warrant the free replacement of any damaged/malfunctioning switchgear or measuring equipment and its accessories during the warranty period .
35.0	**Safety:**
35.1 35.2	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. **COVID-19 rules must be strictly followed during the working period.**
36.0	**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.
37.0	**Payment terms:**
37.1	No advance/Mobilization advance shall be made in this contract.
37.2	**Progressive payments for erection works**
37.2. 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.
37.2.2	Maximum 4(four) Nos. of progressive erection Invoice/ Bill would be entertained during entire erection work.
37.2.3	The 1st Progressive erection Invoice/Bill would be entertained on completion of 30% of total erection cost of the Project.
37.2.4	Minimum value of 2nd and 3rd invoice should be 20% of the total order value for the foundation, erection, and civil works.
37.2.5	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.
37.3	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
38	**Performance security deposit:**
38.1	The successful bidder shall have to deposit through a **Bank Guarantee** from a Nationalized or scheduled Bank of RBI in AEGCL's standard proforma on non-judicial stamp of appropriate value for an amount equivalent to 10% (ten percent) of the total value of the order as performance security, immediately within 10 (ten) days from the issue of the letter of intent/detailed orders (as the case may be), duly pledged in favour of **AEGCL, Bijulee Bhawan, Paltanbazar, Guwahati-1,** and such security deposit shall be valid up to 30 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, Depota-784154** by the issuing Bank under registered post AD.
38.2	Please note that, if the selected Bidder / Firm fails to furnish the requisite performance security as stated above and signs the contract within the stipulated period, 10 percent security money will be deducted from the total Bill value.
38.3	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.
38.4	No interest shall be payable on such deposits.
39	**Retention Money:**
39.1	In addition to above performance security deposit, retention money will be retained by the Engineer/Purchaser as per Bid Clause33.The amount will be held by the Purchaser (AEGCL) till the work under the contract is completed and the completion certificate is issued.
39.2	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.
39.3	No interest shall be payable on such deposit.
40.0	**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.
41.0	**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.
42.0	**Right to Reject:**
	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 _____

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 _____

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

(i) No of years the Firm/Contractor has been in operation under its present name.
(ii) Details of work executed/being executed by the tenderer in the last three years.
(iii) Testimonials from Clients Company on various works executed for the last three years.
(Details of works executed/under execution in the last three years including other department)

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 BID

PRICE SCHEDULE

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

Sl. No	Item Description	Qty	Unit	Rate(in Rs)	Amount (in Rs)
1.	Supply of 33kV, 25kA, 1250A motorised isolator with earth switch complete with all fittings and accessories including terminal connectors.	3	Set		
2	Supply of 334V, 25kA, 1250A motorised (isolator without earth switch complete with all fitings and accessories including terminal connectors	1	Set		
3	Supply of 4 Core, 4sqmm[armoured)power cable	300	mtr		
4	Supply of 7 Core, 1.5 sqmm(armoured) control cable	300	mtr		
B	F&l on Supply				
1	F&l on Supply of 33kV, 25kA, 1250A motorised isolator with earth switch (complete with all fittings and accessories including terminal connectors	3	Set		
2	F&l on Supply of 33k, 25kA, 1250A motorised isolator without earth switch complete with all fittings and accessries incduding terminal connectors.	1	Set		
3	F&l on Supply of 4 Core, 4 sqmm armoured power cable	300	mtr		
4	F&l on Supply of 7 Core, 1.5 sqmm armoured control cable	300	mtr		
C	Erection, Testing And Commissioning				
1	Dismantling of existing 33KV manually operated isolator assembly(without structure) and associated works	4	Set		
2	Erection, testing and commissioning of 33kv motorised isolator set with/without earth	4	Set		

	switch, including laying of cables and all other associated works				
3	Fabrícation/ moditication of existing mounting structure as may be required for erection of new isolators(additional material, if requlred, will be arranged departmentally)	1	Job		
Total (In Rs)					
Add 18% GST					
Grand Total					

Name of the Bidder: -

Signature of the Bidder/Firm ……..

Full Name ……

Postal Address ……

Phone/Mobile No. ……..

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 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	
	Bank Guarantee /Demand Draft	: Yes/No.
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 clause- 37)	: Yes/No
5)	Date of completion of supply/Erection. (Please specify the date of completion of supply/Erection as per specification)	: Yes/No
6)	'Security and performance guarantee' (Whether agreeable to accept as specified in Clause no-34&35)	: Yes/No
7)	List of orders executed for similar works furnished	: Yes/No
8)	Performance certificate from the Govt/Govt undertaking furnished	: Yes/No
9)	Deviation from the specifications	

	a) Technical	: Yes/No
	b) Commercial	: Yes/No
10)	Information in respect of technical capability is furnished	: Yes/No
11)	Information in respect of financial capability certificate from the Banker is furnished as per Cl. No. 15.3.6 and 15.3.7	: Yes/No
12)	PAN card as per Cl. No. 15.3.2	: Yes/No
13)	GST registration no. as per Cl. No. 15.3.4	: Yes/No
14)	Registered Power of Attorney as per Cl.no. 15.3.5 enclosed.	: Yes/No

Name of the Bidder: -

Signature of the Bidder/Firm ……..

Full Name ……

Postal Address ……

Phone/Mobile No. ……

ANNEXURE-II

GUARANTEED TECHNIICAL AND OTHER PARTIICULARS
(To be filled in by Bidder and shall be furnished with the Technical Bid)

1. <u>33kV Isolator</u>

	Type:	**33 kV**
I	**II**	**III**
1	Main switch	
2	Service	
3	Applicable standard	
4	No. of Phases	
5	Design Ambient temperature	
6	Type of operation	
7	Rated voltage (kV)	
	c) Nominal	
	d) Maximum	
8	Rated current (Amps)	
9	Short time current for 1sec.(kA)	
10	Rated frequency	
11	System earthing	
12	Temperature rise	
13	Lightening Impulse withstand voltage (kVp)	
	(a) Across Isolating distance	
	(b) To earth	
14	1-minute power frequency withstand voltage	
	a) Across Isolating distance	
	b) To earth	
15	Switching Impulse withstand voltage (kVp)	
	a) Across Isolating distance	
	b) To earth	
16	Max. RIV for frequency between 0.5MHz and 2MHz (micro-volt)	
17	Corona Extinction Voltage (kV)	
18	Operating mechanism	
	a) Isolator	
	b) Earth switch	
19	Auxiliary voltage	
	a) Control & Interlock	
	b) Motor voltage	
	c) Heater, lamp & socket	
20	Safe duration of overload	
	150% of rated current	
	120% of rated current	
21	Minimum creepage distance of insulator (mm)	
22	Mounting structure	
23	Operating time	
24	Insulator Data	
	a) Bending Strength (kgf)	
	Type:	
	b) Height (mm)	

	c) Bottom PCD (mm)	
	d) No. of holes & hole dia.	
	e) Top PCD	
	f) No. of holes & hole dia.	
	g) Minimum creepage distance (mm) 31mm/kV	
25	Working clearance (live part to ground) (in mm)	
26	Phase Spacing (mm.)	
27	Minimum clearances (mm.)	
	a) Phase to Phase	
	b) Phase to earth	
	c) Sectional clearance	

2. **Cables**

Sl no	**Description**	**Details**	
		4CX 4 Sqmm ***Power cable(armoured)***	**7CX 1.5 Sqmm** ***Control cable(armoured)***
A	Cores		
1	Nom Area of conductor in sq mm.		
2	Voltage Grade		
B	Conductor		
1	Standard Applicable		
2	Material Copper Grade		
3	Purity		
4	Nominal Cross Sectional Area		
5	Form of conductor/circular shaped		
6	No. of strands		
7	Nominal dia of each strand		
8	Temperature co-efficient of resistance at 20 degrees Celsius		
9	Continuous current rating when laid in air in ambient temp. of 50° C and of maximum conductor temp. of 90° C of XLPE cable		
C	Insulation		
1	Standard Applicable		

2	Material (Mention Type)		
3	XLPE is cured by steam process or Gas process?		
4	Minimum Average Thickness		
5	Tolerance on the smallest of the measured values of thickness of Insulation		
6	Minimum volume resistivity at 27 deg cel		
7	Minimum volume resistivity at 70 deg cel		
8	Colour Scheme for identification of cores		
9	Average Dielectric Strength		
D	Inner Sheath		
1	Standard Applicable		
2	Material for inner sheath		
3	Minimum thickness of inner sheath		
4	Whether extruded		
E	Armour		
1	Standard Applicable		
2	Shape		
3	Size		
4	Material for Armour		
F	Outer Sheath/Overall Covering		
	Standard Applicable		
2	Material (type)		
3	Whether extruded		
4	Minimum average thickness		
5	Whether anti-termite treatment has been given in the outer sheath		
6	Whether flame retardant low smoke compound		

	added in the outer sheath		
G	Electrical Properties		
1	Maximum DC Resistance of conductor at 20 deg Celsius in ohms/km		
2	Maximum DC Resistance of amour at 20 deg Celsius in ohms/km		
3	Maximum Permissible conductor temperature		
	Under continuous full load		
	Under transient conditions		
4	Loss Tangent at normal frequency		
5	Reactance at maximum operating temperature 50 Hz (ohm/km)		
6	Capacitance at maximum operating temperature 50 Hz (ohm/km)		
7	Total Impedance at maximum operating temperature 50 Hz (ohm/km)		
8	Recommended continuous current rating		
	In Ground at 30 deg C Ground Temperature (A)		
	In Trench/Ducts at 40 deg C (A)		
	In Air at 40 deg C ambient Temperature (A)		
9	Short Ckt Current Rating for 1 sec duration (in KA)		
	Conductor		
	Armour		
10	Minimum volume Resistivity of insulation		
	At 27 °C in Ohm cm		

	At Max operating temperature in Ohm-cm		
11	Approximate AC resistance at max. Operating temperature		
	Phase		
	Neutral		
H	Mechanical Data		
1	Overall Dia of the cable		
2	Dia of the cable under the sheath		
3	Diameter under armour		
4	Diameter over the stranded cores		
5	Wight of cable per km.		
6	Drum length		
7	Tolerance on drum length		
8	Total weight of the drum		
9	Dimension of the drum		
10	Recommended minimum installation radius/ bending radius		
11	Maximum safe pulling force		
12	Whether identification as per clause of the specification is being provided		
13	Whether packing has been done as per clause of the specification		