

ASSAM ELECTRICITY GRID CORPORATION LIMITED
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CIN: U40101 AS2003SGC007238
Phone: 0361-2739520/Fax:0361-2739513 [web: www.aegcl.co.in](http://www.aegcl.co.in)



Bidding Document

For

Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3
Sec Single Centre back horizontal mechanically ganged
operated isolator without earth switch and without insulator at
Hailakandi GSS as per specification of existing 132 kV
Isolator of Hailakandi GSS along with Supply of GR Power
make Isolator Pad Clamps for panther suitable for 132 KV
GR Power Isolators at Hailakandi GSS under Panchgram
Sub-station Division

DEPUTY GENERAL MANAGER
SILCHAR T&T CIRCLE
AEGCL, SILCHAR-788026

Tender Cost:	₹1,000.00
EMD:	₹10,400.00

For & on behalf of the **Managing Director, AEGCL, the Deputy General Manager, Silchar T&T Circle, AEGCL, Silchar-26**, 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	Bidding Address
1	Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3 Sec Single Centre back horizontal mechanically ganged operated isolator without earth switch and without insulator at Hailakandi GSS as per specification of existing 132 kV Isolator of Hailakandi GSS along with Supply of GR Power make Isolator Pad Clamps for panther suitable for 132 KV GR Power Isolators at Hailakandi GSS under Panchgram Sub-station Division	5,16,132/-	150 days from the date of issue of Supply order	O/o The DGM, Silchar T&T Circle, AEGCL, Silchar, Srikona, Silchar-26

1.0 Cost of Bidding Document:

Bidder has to pay Non-Refundable tender document cost of **Rs.1,000.00 (Rupees One Thousand)** only in the form of A/C payee Demand draft (Non-refundable) pledged in favour of “**Managing Director, AEGCL, Paltan Bazar, Guwahati-01**” , payable at Guwahati.

2.0 Bidding Address:

Tender papers can be purchased on application in plain paper from the **Deputy General Manager, Silchar T&T Circle, AEGCL, Silchar-26**.

3.0 Key Dates: -

a) Bid Document available in Website	12:00 Hrs of 11-02-2026
b) Bid Submission Start Time & date:	12:00 Hrs of 11-02-2026
c) Bid Submission end time & date:	14:00 Hrs of 04-03-2026
d) Techno-Commercial Bid Opening time:	11:30 Hrs of 05-03-2026

4.0 Bidding Procedure :

- a) All Tenders shall have to be submitted in prescribed forms attached herewith eventually to be drawn up in the rules of AEGCL.
- b) Two different envelopes to be used as follows:-
Envelope-1 (Technical Bid): Bid document signed by the bidder on all pages, Tender fee, Earnest Money, Techno-commercial data of the Bidder, GTP and other mandatory documents must be enclosed.
Envelope-2 (Price Bid): As per format of the Price Bid attach.
- c) All tenders shall have to be submitted under **sealed & signed** covers super-scribing the **Tender Notice No** and **Name of the Work** completely and clearly on the top of the corner.
- d) All tenders shall have to be submitted/drop in the concerned tender box on or before the last date and time of submission of tenders either by post or in person.
- e) If Bidders desire to submit their Bid by post, at their own expenses, it should be posted well in advance so as to ensure that their tenders reach the office of the tendering address on or before the specified date and time of submission of tender. AEGCL will not take any responsibility for loss, damage, tempering or delay of tenders sent by post.

- f) Bidder submitting Bid in person should submit their Bid in the tender box during the working hours on or before the last date and time of submission of tender.
- g) Tender will be rejected if submitted beyond the aforesaid time and date.
- h) AEGCL has the right to cancel the tender at any moment, without assigning any reason thereof. Bidder will not be entitled to claim any expenses and AEGCL will not be responsible for any costs or expenses incurred on the preparation and submission of the Bids.

5.0 Validity of Bids and Bids Prices:

- a) Bids shall remain valid for a 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.
- b) 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.

6.0 Bid Security:

- a) All bids must be accompanied by a bid security amounting to **Rs. 10,400.00** only in the form of **Demand Draft** from any Nationalized Bank payable at Guwahati in favour “**Managing Director, AEGCL, Paltan Bazar, Guwahati-01**”, payable at Guwahati.
- b) Any bid not complying with the terms and conditions then his bid shall be rejected by the Employer as non-responsive.
- c) The earnest money of the successful Bidder shall be returned when the successful Bidder has signed the Contract and furnished the required performance security.
- d) The earnest money of the unsuccessful Bidders shall be returned as promptly as possible when the successful Bidder has signed the Contract.
- e) The earnest money may be forfeited:
 - If a Bidder withdraws its bid during the period of bid validity specified by the Bidder.
 - If the successful Bidder fails to Sign the Contract with in the specified period.
- f) The Bid Security of a JV shall be in the name of the JV that submits the bid.

7.0 Format and Signing of Bid:

- a) The Bidder shall prepare one original copy of the Technical Bid and one original copy of the Price Bid comprising the Bid and clearly mark it —ORIGINAL - TECHNICAL BID and —ORIGINAL - PRICE BID.
In addition, the Bidder shall submit three copies of the bid, in the number specified and clearly mark each of them —COPY. In the event of any discrepancy between the original and the copies, the original shall prevail.
- b) 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.
- c) A bid submitted by a JV shall be signed so as to be legally binding on all partners.
- d) Any interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the bid.

8.0 Eligible Bidders:

- a) 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:
 - All partners shall be jointly and severally liable, and
 - 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.

- b) 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.
- c) 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.
- d) 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. Bidders shall provide such evidence of their continued eligibility satisfactory to the AEGCL, as the Employer shall reasonably request.

9.0 **Financial Capability:**

- a) Bidder will require to submit along with the bid the **audited balance sheets, IT return 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.
- b) **Average Annual Turnover:** Minimum average annual turnover **INR 1,54,839.60** calculated as total certified payments received for contracts in progress or completed, within the last 3 (Three) Years.

10.0 **Work Experience:**

- a) Experience on similar nature of works under contracts in the role of manufacturers, contractor, subcontractor, or management contractor for at least the last 5 (Five) years prior to the bid submission deadline.
- b) The Bidder should have successfully completed similar works within last 5 (Five) Financial years. Documentary evidence such as Work Order, Completion Certificate, etc. should be submitted as per below mentioned criteria:
 - **Three (3) similar** completed works costing not less than **Rs. 2,06,452.80**
 - **Two (2) similar** completed works costing not less than **Rs. 2,58,066.00**
 - **One (1) similar** completed works costing not less than **Rs 4,12,905.60**
- c) The Bidder must have experience of executing work of similar nature previously in AEGCL/APDCL or any other government organization or PSU. The bidder must submit experience and completion certificate for scrutiny by AEGCL. Each of such project/ works should consist of completion certificate.

11.0 **Evaluation Criteria:**

- a) **Evaluation will be done on the basis of Bid Clause No. 8.0 : Eligible Bidders, Cl. No. 9.0 : Financial Capability, Cl. No. 10.0 : Work Experience and in accordance with the Annexure I to be duly filled in, signed and submitted by the bidder.**
- b) Price Bid of only **Responsive and Qualified Techno-Commercial Bidders** will be opened.
- c) **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.

12.0 **Correction of Errors in the Price Bid:**

- a) **Arithmetical Error**, if observed while in Price Bid evaluation, same will only be corrected.
- b) Arithmetic Errors in the Price Bid will be rectified on the following basis:
 - If there is a discrepancy between the unit rate and the total cost that is obtained by multiplying the unit rate and quantity, the unit rate shall prevail and the total cost will

be corrected unless in the opinion of AEGCL there is an obvious misplacement of the decimal point in the unit rate, in which case the total cost as quoted will govern and the unit rate corrected. If there is a discrepancy between the total bid amount and the sum of total costs, the sum of total costs shall prevail and the total bid amount will be corrected.

- The amount stated in the Price Bid will be adjusted by AEGCL in accordance with the above procedure for the correctness of errors and shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited.

c) **Any post bid correction request will NOT BE ENTERTAINED.**

13.0 Bid Evaluation Process for Abnormally Low Bids (ALB):

The following methodology will be practiced for identification and treatment of the Abnormally Low Bids (ALB) in this tender process of AEGCL:

(a) **Identification:** For the Identification of the Abnormally Low Bids, two approaches as applicable shall be adopted :-

(i) **Absolute Approach:** When there are fewer than five substantially responsive bidders and if the bid price is 20% or more below the 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:** -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.

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

(b) In case of an ALB, the tender evaluation committee of the respective tenders shall undertake the following three stage review process which are as below:

- i. Identify ALB as per the steps mentioned in Clause No. (a). (i) and (a). (ii), whichever is applicable.
- ii. 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.
- iii. To decide whether to accept or reject the bid.

(c) Additional Performance Security In case of acceptance of ALB:

- i. 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.
- ii. 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.
- iii. 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.

14.0 Late Bid:

- a) Any bid submitted *after the due date and time* will be rejected without any prejudice.
- b) 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.
- c) Bidding through **EMAIL WILL NOT BE ACCEPTED.**

15.0 Clarification on Bid Documents and Contacting AEGCL:

- a) A prospective Bidder requiring any clarification of the Bidding Document shall contact the AEGCL in writing at the AEGCL's address (**O/o the Deputy General Manager, Silchar T&T Circle, AEGCL, Silchar-788026**) and 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.
- b) The Bidder is advised to visit and examine the site where the work is to be Carried out and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the provision of plant and services. The costs of visiting the site shall be at the Bidder's own expense.
- c) 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.

16.0 Amendment of Bidding Document:

- a) At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- b) 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.
- c) 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.

17.0 Preparation of Bids by the Bidders:

- a) **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.
- b) **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.

18.0 Bid Prices and Discounts:

- a) Bidders shall quote price inclusive of GST and all other applicable taxes. No extra calculation for discounts or other taxes will be done during evaluation.
- b) 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.
- c) Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding document.
- d) 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.

- e) Since the work being “work contract” which is one and individual and which involves no separate contract for the sale of materials, the contractor shall have not be entitled to get any VAT and or any other taxes, levies reimbursed from the AEGCL for the supply of the materials.
- f) 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.
- g) **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.

19.0 Mandatory Documents:

- i) Bidders(s) knowledge from actual personal investigation of the resources of the region or District (S) in which he/they offers the work.
- ii) The Bidder shall furnish copy of their **PAN Card**. In case the bidder is a partnership Firm, the **PAN** card must be in the name of firm.
- iii) In case the bidder is a partnership Firm, the **work experience, solvency and turn over** shall be in the name of **partnership Firm** only.
- iv) **GST registration No.**
- v) **Registered Power of attorney, if any.**
- vi) **IT Return for last three Years.**
- vii) **Audited Balance Sheet for last three years.**
- viii) **Bank Solvency Certificate**
- ix) **GTP of the equipment to be supplied.**
- x) **Manufacturer’s authorization.**
- xi) **Valid Electrical License (132 kV & above)**

20.0 SCOPE OF WORK:-

20.1 Intent of specification:

This section of the specification deals with the technical information & criteria for “**Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3 Sec Single Centre back horizontal mechanically ganged operated isolator without earth switch and without insulator at Hailakandi GSS as per specification of existing 132 kV Isolator of Hailakandi GSS along with Supply of GR Power make Isolator Pad Clamps for panther suitable for 132 KV GR Power Isolators at Hailakandi GSS under Panchgram Sub-station Division**”. The Contractor's proposal shall be based on the use of materials complying fully with the requirements specified herein.

20.2 Scope of Works :-

The various activities under the scope of work shall among other related aspects cover the following:-

- a) **Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3 Sec Single Centre back horizontal mechanically ganged operated isolator without earth switch and without insulator at Hailakandi GSS as per specification of existing 132 kV Isolator of Hailakandi GSS along with Supply of GR Power make Isolator Pad Clamps for panther suitable for 132 KV GR Power Isolators at Hailakandi GSS under Panchgram Sub-station Division**
- b) Loading at manufacturer’s works, transportation and delivery at the substation site, including unloading at destination site.
- c) Freight & Transit Insurance, storage at site and site insurance of all materials at site shall be in the scope of the contractor.
- d) Arrangements of any permits required for transportation and movement of supplied materials. However, AEGCL shall assist as far as practicable in the process.

20.3 Supplier to Inform himself fully:-

- The supplier should ensure that he has examined the specifications and schedules as brought out in this section as well as other sections of the Bidding Document 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.

- The Purchaser shall not be responsible for any misunderstanding or incorrect information obtained by the contractor other than information given in writing by the Purchaser.

20.4 Service Conditions:-

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

Peak ambient day temperature in still air	: 45⁰C
Minimum night temperatures	: 0⁰C
Reference ambient day temperature	: 45⁰C
Maximum Relative Humidity	: 100%
Minimum Relative Humidity	: 10%
Altitude	: Below 1000 M above MSL
Maximum Wind Pressure	: As per IS:802 latest code
Seismic Intensity	: ZONE-V as per IS 1893

20.5 Conformity with Indian Electricity Rules & Other Local Regulations:-

- 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 regulations relating to such works shall be consulted, if necessary, about the rules and regulations that may be applicable.
- 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.

20.6 Standards:-

- The equipment covered under this Bidding Document 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.
- In case of any conflict between the standards and this specification, this specification shall govern.
- Equipment conforming to other International or authoritative Standards which ensure equivalent or better performance than that specified above shall be accepted. In that case relevant extracts of the same shall be forwarded with the bid.

20.7 Engineering Data:-

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

20.8 Drawings and Documents for approval:-

- 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 before procurement or commencement of work.
- All drawings submitted by the Contractor 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.
- Each drawing submitted by the Contractor shall be clearly marked with the name of the Employer, 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.

- **The drawings submitted for approval to the Employer shall be in quadruplicate.** One print of such drawings shall be returned to the Contractor by the Employer marked "approved/approved with corrections". The contractor shall there upon furnish the Employer additional prints as may be required along with one reproducible in original of the drawings after incorporating all corrections.
- The Contractor shall perform the work strictly in accordance with these drawings and no deviation shall be permitted without the written approval of the Employer, if so required.
- All manufacturing, fabrication and erection work under the scope of Contractor prior to the approval of the drawings shall be at the Contractor's risk. The contractor may make any changes in the design which are necessary to conform to the provisions and intent of the contractor and such changes will again be subject to approval by the Employer.
- The approval of the documents and drawings by the Employer shall mean that the Employer is satisfied that:
 - a) The Contractor has completed the part of the Works covered by the subject document (i.e. confirmation of progress of work).
 - b) The Works appear to comply with requirements of Specifications.
- In no case the approval by the Employer of any document does imply compliance with neither all technical requirements nor the absence of errors in such documents. If errors are discovered any time during the validity of the contract, then the Contractor shall be responsible of their consequences.
- For equipment and items in the scope of supply:
 - a) General arrangement drawing with full dimensions.
 - b) Electrical schematic diagram, where applicable.
 - c) Wiring diagram, where applicable.
- All Designs/Drawings/Calculations/Data submitted by the contractor, from time to time shall become the property of the Employer and Employer has the right to use or replicate such designs for future contracts / works without the permission of the Contractor. The Employer has all rights to use/ offer above designs/drawings/data sheets to any other authority without prior Permission of the Contractor.

20.9 Final Drawings and Documents:-

The successful supplier shall require providing following documents and drawings for each bay constructed in printed form:

- a) *Instruction manuals of all equipment in 3 (Three) copies.*
This instruction manual shall generally consist of
 - *Operation Manuals*
 - *Maintenance Manuals and*
 - *Spare Parts Bulletins*
- b) *Copies of routine test reports (in triplicate) of relevant equipment.*
- c) *Final guaranteed and other technical particulars of relevant equipment.*

In addition to the above, the contractor shall provide **5 (Five) sets** of all drawings and documents to Purchaser in printed form for his reference and record.

20.10 Quality Assurance Documents:-

- The contractor shall be required to submit all the quality assurance documents as stipulated in the quality plan at the time of Purchaser's inspection of equipment/material.
- The Purchaser 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.

20.11 Employer's Supervision:-

- a) 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.
- b) 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.

- Interpretation of all the terms and conditions of these Documents and Specifications.
- Review and interpretation of all the Contractors drawings, engineering data etc.
- 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.
- Inspect, accept or reject any equipment, material and work under the Contract, in accordance with the Specifications.
- Issue certificate of acceptance and/or progressive payment and final payment certificate.
- Review and suggest modification and improvement in completion schedules from time to time,
- Supervise the Quality Assurance Programme implementation at all stages of the works.

20.12 Inspection and Inspection Certificate:-

- The Employer, his duly authorized representative and/or outside inspection agency acting on behalf of the Employer shall have, at all reasonable times, access to the premises and works of the Contractor and their sub-contractor(s)/sub-vendors and shall have the right, at the reasonable times, to inspect and examine the materials and workmanship of the product during its manufacture.
- All routine and acceptance tests whether at the premises or works of the Contractor or of any Sub Contractor, the Contractor except where otherwise specified shall carry out such tests free of charge. Items such as labours, materials, electricity, fuel, water, stores apparatus and instruments as may be reasonably demanded by the Employer/inspector or his authorized representative to carry out effectively such tests in accordance with the Contract shall be provided by the Contractor free of charge.
- If desired by the Employer, the Contractor shall also carry out type tests as per applicable Standards for which Employer shall bear the expenses except in cases where such tests have to be carried out. The Contractor is required to quote unit rates of type test charges in a separate Schedule (if such schedule is provided in the Bidding Document). However, these type test charges shall not be taken into account in comparing Price Bid.
- The inspection by Employer and issue of Inspection Certificate thereon shall in no way limit the liabilities and responsibilities of the Contractor in respect of the agreed Quality Assurance Programme forming a part of the Contract.

20.13 Tests:-

- The type, acceptance and routine tests and tests during manufacture to be carried-out on the material and equipment shall mean as follows:
 - a) **Type Tests:** - Type Tests shall mean those tests, which are to be carried out to prove the process of manufacture and general conformity of the material to this Specification. These tests shall be carried out on samples prior to commencement of commercial production against the order. The Bidder shall indicate his schedule for carrying out these tests.
 - b) **Acceptance Tests:** - Acceptance Tests shall mean those tests, which are to be carried out on samples taken from each lot offered for pre-dispatch inspection, for the purposes of acceptance of that lot.
 - c) **Routine Tests:** - Routine Tests shall mean those tests, which are to be carried out on the material to check requirements, which are likely to vary during production.
 - d) **Tests during Manufacture:** - Tests during manufacture shall mean those tests, which are to be carried out during the process of manufacture and end inspection by the Contractor to ensure the desired quality of the end product to be supplied by him.
- The norms and procedure of sampling for these tests will be as per the Quality Assurance Programme to be mutually agreed to by the Contractor and the Employer.
- The standards and norms to which these tests will be carried out are specified in subsequent Sections of this Specification. Where a particular test is a specific requirement of this Specification, the norms and procedure of the test shall be as specified or as mutually agreed to between the Contractor and the Employer in the Quality Assurance Programme.
- For all type and acceptance tests, the acceptance values shall be the values specified in this Specification or guaranteed by the Bidder or applicable Standards, as applicable.

20.15 Guaranteed Technical Particulars:-

- The Guaranteed Technical Particulars of the various items shall be furnished by the Bidders with the Technical Bid in the prescribed Schedules attached in this bidding document. The Bidder shall also furnish any other information's as in their opinion is needed to give full description and details to judge the item(s) offered by them.
- The data furnished in Guaranteed Technical Particulars should be the minimum or maximum value (as per the requirement of the specification) required. A Bidder may guarantee a value more stringent than the specification requirement. However, for testing purpose or from performance point of view, the material shall be considered performed successfully if it achieves the minimum/maximum value required as per the technical specification. No preference whatsoever shall be given to the bidder offering better/more stringent values than those required as per specification except where stated otherwise.

20.16 Materials Handling and Storage:-

- 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.
- 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.
- 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.
- 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 so as to avoid damage of such materials at Site.
- All the materials stored in the open or dusty location must be covered with suitable weather-proof and flameproof covering material wherever applicable.
- The Contractor shall be responsible for making suitable indoor storage facilities, to store all items/materials, which require indoor storage.
- 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.

21: TECHNICAL SPECIFICATION FOR ISOLATORS (AIS)

21.0 TECHNICAL PARTICULARS OF 400 kV, 220 kV, 132 kV & 33 KV ISOLATOR are as follows:

	Type:	400kV	220kV	132kV	66 kV	33 kV
I	II	III	IV	V	VI	VII
1	Mainswitch	Centre break/Pantograph	Horizontal Centre break	Horizontal Centre Break	Horizontal Centre break	Horizontal Double break
2	Service		Outdoor			
3	Applicablestandard		IS :9921 /IEC-62271-102			
4	No. ofPhases		3 phase			
5	DesignAmbienttemperature		50°C			
6	Typeofoperation	ElectricallyGanged	MechanicallyGanged			
7	Rated voltage (kV)	InKV	InKV	InKV	In KV	InKV
	a) Nominal	400	220	132	66	33
	b) Maximum	420	245	145	72.5	36
8	Rated current(Amps)	4000	3150	2000	1250	1250
9	Short timecurrentfor 1sec.(kA)	63	50	40	31.5	31.5
10	Rated frequency		50 HZ +5%			

	Type:	400kV	220kV	132kV	66 kV	33 kV
I	II	III	IV	V	VI	VII
11	System earthing		Effectively earthed			
12	Temperature rise		As per relevant IS/IEC standards			
13	Lightening Impulse withstand voltage (kVp)					
	(a) Across Isolating distance	1425(+240)	1220	750		195
	(b) To earth	1425	1050	650		170
14	1-minute power frequency withstand voltage					
	a) Across Isolating distance	815	605	315		80
	b) To earth	650	460	275		70
15	Switching Impulse withstand voltage (kVp)					
	a) Across Isolating distance	900(+345)	-	-		-
	b) To earth	1050	-	-		-
16	Max. RIV for frequency between 0.5MHz and 2MHz (micro-volt)	1000 at 267kV	1000 at 156kV	500 at 92kV		-
17	Corona Extinction Voltage (kV)	320	-	-		-
18	Operating mechanism					
	a) Isolator	Motor	Motor	Motor	Motor	Motor
	b) Earth switch	Motor	Motor	Motor	Manual	Manual
19	Auxiliary voltage					
	a) Control & Interlock		220V DC 80% to 110%			
	b) Motor voltage		3 Phase 415V AC 50Hz			
	c) Heater, lamp & socket		Single phase 240 V 50HZ			
20	Safe duration of overload					
	150% of rated current		5 minute			
	120% of rated current		30 minute			
21	Minimum creepage distance of insulator (mm)					
22	Mounting structure	Tubular / Lattice	Tubular / Lattice	Tubular / Lattice	Tubular / Lattice	Tubular / Lattice
23	Operating time		Less than 12 secs			
24	Insulator Data					
	a) Bending Strength (kgf)	1000	800	800	As per IS/IEC	600
	b) Height (mm)	3650	2300	1500		508
	c) Bottom PCD (mm)	300	254	184		76
	d) No. of holes & hole dia.	8x18	8x18	4x18		4xM12
	e) Top PCD	127	127	127		76
	f) No. of holes & hole dia.	4xM16	4xM16	4xM16		4xM12
	g) Minimum creepage distance (mm) 31mm/kV	13020	7595	4495	2248	1116
25	Working clearance (live part to ground) (in mm)	8000	5900	4900	As per IS/IEC	4000
26	Phase Spacing (mm.)	6000	4000	3000		1500
27	Minimum clearances (mm.)					
	a) Phase to Phase	4000	2100	1300		320
	b) Phase to earth	3500	2100	1300		320
	c) Sectional clearance	6500	5000	4000		3000

• SCOPE

This specification provides for design, manufacturer, testing at manufacturer's Works and delivery, supervision of erection, commissioning (if required) of outdoor station type 400kV/220KV/132KV/ 33KV, Isolator with/ without earth switches, with electrical/**mechanical** interlock, insulators and complete in all respect with bimetallic connectors arcing horns operating mechanism, auxiliary switches, indicating devices, fixing detail etc. as described hereinafter.

21.1 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.

21.2 TYPE

The 400,220&132 KV Isolators shall be outdoor type with centre break type/Pantograph type as required [Single(SI)/ Double(DI)] Isolators suitable for electrical as well as manual operation and local/ remote operation; but 33KV Isolators (SI or DI) shall be outdoor type with three phase double break center rotating manual as well as motor operated 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:

400kV	220kV	132kV	66kV	33kV
4000A	3150A	2000/1600/1250A	2000/1250A	2500/1600/1250A

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 63/50/40/31.5 KA for 400/220/132/33 KV respectively for 3 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. so that de-energized isolator and earth switch also can be manually operated when the parallel

circuit is energized.

21.3 MAIN CONTACTS

All Isolators shall have heavy duty, self-aligning and high-pressure line type **dust-free jaw** 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 4000 Amps, 3150 Amps, 2000 Amps, and 1250Amps ratings for 400kV, 220 KV, 132KV and 33KV Isolators respectively. 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 63/50/40/31.5 KA for 400/220/132/33KV respectively for **3 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, closing of the switches, proper seating of the blades in between contacts and adequate pressure to give enough contact surface is ensured. The contact shall be self-cleaning by the wiping action created by the movements of the blades.

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.

21.4 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. Aluminium alloy grading ring are to be provided for 220kV and above voltage level.

21.5 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 shall ensure reliable operation. The design should be such that the electrical circuit for the interlocking mechanism **will remain energised as per operation of the isolator with integrated earth switches.**

21.6 AUXILIARY SWITCHES

All isolators and earthing switches shall be provided with 220VDC 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.

21.7 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.

21.8 OPERATING MACHANISM

The operating mechanism shall be simple and shall ensure quick and effective **10000** mechanical 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 aluminium extruded (Aluminium 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 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.

Provision shall be made in the control cabinet to disconnect power supply to prevent local / remote power operation. **Limit switches shall be provided with required number of contacts for isolators and earth switches.**

All the terminal blocks to be used in the operating mechanism should of **Ring type** of Poly-amide/Melamine material of make like Elmex/Connectwell.

21.9 DESIGN, MATERIALS AND WORKMANSHIP

The live parts shall be designed to eliminate sharp points, edges and 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 .

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 **isolators** should not need lubrication of any parts except at very long interval of five year minimum.

21.10 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.

21.11 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, **seismic** forces etc. Glazing of the porcelains shall be of uniform dark brown colour 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. 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 **as specified in table of Clause 10.0** of Casing shall be free from blow holes cracks and such other defects.

21.12 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.

21.13 MOTOR:

Motors rated 0.5 KW and above shall be **provided with** 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. **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.**

21.14 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.

21.15 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.

21.16 TERMINAL BLOCK AND WIRINGS

Each operating mechanism shall be provided with 1100V grade **ring** type terminal block. All auxiliary switches, **spare contact of the contactors**, 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 **PVC** insulated 2.5 sq.mm. copper wires.

21.17 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.

21.18 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.

21.19 POSITION INDICATOR:

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

21.20 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 informations 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-

Manufacturing Standard-

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

21.21 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 **with epoxy paint**. 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.

21.22 TESTS:

Type Tests:

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 AEGCL reserves the right to demand repetition of some or all the type tests in the presence of AEGCL'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), Lightning Impulse dry withstand Test
- c) Mechanical endurance Test
- d) IP-55 test
- e) **Seismic test**

f) Temperature Rise 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.

Acceptance and Routine Test:

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 **(NABL)** test house for the equipment, instruments to be used during testing for scrutiny by the AEGCL 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

21.23 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.

21.24 QUALITY ASSURANCE PLAN:

The Bidder shall invariably furnish following information along with his offer, failing which his offer shall be liable for rejection.

- (i) Names of sub suppliers for raw materials, list of standards according to which the raw materials are tested, list of tests normally carried out on raw materials in presence of Supplier's representative, copies of test certificate
- (ii) Information and copies of test certificates as in (i) and (ii) above in respect of bought out accessories.
- (iii) List of manufacturing facilities available
- (iv) Level of automation achieved and lists of areas where manual processing still exists.
- (v) List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.
- (vi) List of testing equipment with calibration certificates from Govt. approved **(NABL)** test house available with supplier for final testing equipment and test plant limitation if any, vis-à-vis the type, special acceptance and routine test specified in the relevant standards. These limitations shall be very clearly brought out in the specified test requirements.
- (vii) QAP shall include acceptance criteria mentioning clause no. of applicable standard against each parameter.

The supplier shall within 30 days of placement of order, submit following information to the purchaser.

- i) List of raw material as well as bought out accessories and the names of sub-suppliers selected from the lists furnished along with offer.
- ii) Type test certificates of the raw material and both bought out accessories.
- iii) Quality Assurance Plan (QAP) withhold points for purchaser's inspection.

The supplier shall submit the routine test certificates of bought out accessories and raw material viz. Copper, aluminum conductors, lubricating material, gear material etc. at the time of routine testing of the fully assembled isolator.

21.25 DOCUMENTATION:

All drawings shall conform to relevant international standards organization (ISO).. All dimensions and data shall be in S.I. Units.

List of Drawings and Documents

The Bidder shall furnish **four** sets of following drawings / documents along with his offer.

- a) General outline and assembly drawings of the dis-connector operating mechanism, structure, insulator and terminal connector.
- b) Sectional views and descriptive details of items such as moving blades, contacts, arms contact pressure, contact support bearing housing of bearings, balancing of heights, phase coupling pipes, base plate, operating shaft, guides, swivel joint operating mechanism and its components etc.
- c) Loading diagram
- d) Drawings with structure for the purpose of type tests.
- e) Name plate.
- f) Schematic drawing.
- g) Type test reports.
- h) Test reports, literature, pamphlets of the bought-out items and raw material.
- i) Deviation sheet/compliance sheet if applicable

Six sets of the type test report, duly approved by the Purchaser shall be submitted by the supplier for distribution, before commencement of supply Adequate copies of acceptance and routine test certificates, duly approved by the Purchaser shall accompany the dispatched consignment.

The manufacturing of the equipment shall be strictly in accordance with the approved drawings and no deviation shall be permitted without the written approval of the purchaser. All manufacturing and fabrication work in connection with the equipment prior to the approval of the drawing shall be at the supplier risk.

The supplier shall within 2 weeks of placement of order submit four sets of final versions of all the above said drawings for AEGCL's approval. The purchaser shall communicate his comments / approval on the drawings to the supplier. The supplier shall, if necessary, modify the drawings and resubmit four copies of the modified drawings for AEGCL's approval within two weeks from the date of comments.

21.26 INSTRUCTION MANUALS:

Fifteen copies of the erection, operation and maintenance manuals in English to be supplied for each type of disconnector one month prior to dispatch of the equipment. The manual shall be bound volumes and shall contain all drawings and information required for erection, operation and maintenance of the disconnector including but not limited to the following particulars.

- (a) Marked erection prints identifying the component parts of the disconnector as shipped with assembly drawings.
- (b) Detailed dimensions and description of all auxiliaries.
- (c) Detailed views of the insulator stacks, metalics, operating mechanism, structure, interlocks, spare parts etc.

21.27 PACKING AND FORWARDING:

The equipment shall be packed in crates suitable for vertical / horizontal transport, as the case may be and suitable to withstand handling during transport and outdoor storage during transit. The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols.

Wherever necessary, proper arrangement for lifting, such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by supplier without any extra cost.

Each consignment shall be accompanied by a detailed packing list containing the following information:

- (a) Name of the consignee.
- (b) Details of consignment.
- (c) Destination.
- (d) Total weight of consignment.
- (e) Handling and unpacking instructions.
- (f) Bill of material indicating contents of each package.

The supplier shall ensure that the bill of material is approved by the purchaser before dispatch.

21.28 SUPERVISION OF ERECTION TESTING AND COMMISSIONING (ET&C):

Purchaser proposes to utilize the services of the supplier for supervision of testing and commissioning of the equipment being supplied by him, if it is required. For this purpose, the supplier should make available the services of trained personnel (Engineers) who shall correct in the field, any errors or omissions in order to make the equipment and material properly perform in accordance with the intent of this specification. The Engineer shall also instruct the plant operators in the operation and maintenance of the commissioned equipment. The supplier shall be responsible for any damage to the equipment on commissioning the same, if such damage results for the faulty or improper ET&C. Purchaser shall provide adequate number of skilled / semi-skilled workers as well as ordinary tools and equipment and cranes required for equipment erection, at his own expenses. Apart from the above, the Purchaser shall not be responsible for providing any other facilities to the supplier. Special tools if required for erection and commissioning shall be arranged by the supplier at his cost and on commissioning these shall be supplied to the purchaser free of cost for future use.

APPENDIX – I

(Isolators)

LIST OF SPECIAL TESTS TO BE CARRIED OUT IF DECIDED BY THE PURCHASER

Sl. No.	Name of the Test	Standard to which it conforms.
1.	Test for visible Corona and Radio interference voltage (RIV) on disconnectors and terminal	NEMA Pub No. 107-1964 ISRI Pub No. 1-1972
2.	Tests on insulators	IS-2544 IEC. 168
3.	Tests on terminal connectors	IS:5561
4.	Tests on galvanized components	IS:2633
5.	Stalled torque test on motor operating mechanism	At 110% of supply voltage

22.0 SITE VISIT:-

The interested bidders are advised to visit the site and examine the site of works and its surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid. The costs of visiting the Site shall be at the bidder's own expense.

23.0 Contract Agreement:-

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**.

24.0 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:

- a) 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.

- b) 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.

25.0 Warranty:-

- a) The contractor warrants that all 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. The term period of warranty shall mean the period of **18 months** from the date of the materials are received at site in good and acceptable condition. If during the period of warranty, any defect is found, the Contractor shall rectify all defects in design, materials and workmanship that may develop under normal use of the equipment upon written notice from the Purchaser who shall indicate in what respects the equipment is faulty. The rectification / free replacement must be carried out within a reasonable time period and at free of cost.
- b) In the event of any emergency, where in the judgment of AEGCL, delay would cause serious loss or damages, repairs or adjustment may be made by the engineer or a third party chosen by the engineer without advance notice to the contractor and the cost of such work shall be paid by the contractor. In the event such action is taken by the engineer, the contractor will be notified promptly and he shall assist wherever possible in making necessary corrections. This shall not relieve the contractor of his liabilities under the terms and conditions of the contract.
- c) If it becomes necessary for the contractor to replace or renew any defective portions of the works, the provision of this clause shall apply to portion of the works so replaced or renewed until the expiry of twelve (12) months from the date of such replacement or renewal.
- d) The repaired or new parts will be furnished and erected free of cost by the contractor. If any repair is carried out on his behalf at the site, the contractor shall bear the cost of such repairs.
- e) The acceptance of the equipment by the Employer shall in no way relieve the contractor of his obligation under this clause.
- f) In the case of those defective parts, which are not repairable at site but are essential for the commercial operation of the equipment, the contractor and the engineer shall mutually agree to a programme of replacement or renewal, which will minimize interruption to the maximum extent in the operation of the equipment.

26.0 Payment terms:-

- **No advance payment** shall be made in this contract.
- No claim for interest shall be entertained by AEGCL.
- The price is firm and no price variation shall be applicable.
- First & Final bill for the supply will be entertained only after **100%** completion of the work.
- Payment will be made by **DGM, Silchar (T&T) Circle, AEGCL, Srikona, Silchar-26**. The Bidder / Firm will have to be submitted the following Net Banking details.
 - Banker's Name & Branch
 - Account No
 - Banker's address
 - Banker's IFSC Code

27.0 Performance Security Deposit:-

- a) 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 "**Managing Director, AEGCL, Paltan Bazar, Guwahati-01**", payable at **Guwahati**, and such security deposit shall be **valid up to 30 (Thirty) days** beyond the **warranty period of 18 (Eighteen) months**. The **Bank Guarantee (BG)** should be submitted to the **O/o the Deputy General Manager, Silchar T&T Circle, AEGCL, Silchar-788026** by the successful Bidder.
- b) Please note that, if the selected Bidder / Firm fail to furnish the requisite performance security in the form of **Bank Guarantee**, an amount equivalent to **10%** of the Contract Price shall be retained as Security Deposits which shall be retained up to **18 (Eighteen) months** from the date of Supply.
- c) 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.
- d) No interest shall be payable on such deposits.

28.0 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.

29.0 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 **Cachar District**.

30.0 Insurance :

- a) The "Supplier" shall, have, unless, otherwise specified by the Purchaser, insure the materials through their underwrites at their cost and shall keep it insured against any loss/ damaged/ pilferage in transit, destruction or damage by fire/ flood, without exposure to vagaries of weather or through riot, civil commotion, war or rebellion, for the full value of the materials until the materials are received at the purchaser's destination store.
- b) The "Supplier" shall be responsible for safe arrival at destination, unloading and receipt of the materials by the consignee. The Purchaser will discharge consignee's responsibilities only and shall not be responsible for any damage/ loss/ pilferage/ non-delivery by the carriers.
- c) In case of any loss/ damage/ pilferage/ non-delivery/ short delivery by carriers etc.; the Supplier shall replace free of cost missing / damaged / lost materials within **30(thirty) days** from the receipt of report thereof from the consignee(s) without waiting for settlement of their claims with their carriers / under-writers. Normally, such reports from the consignee(s) to the supplier shall be initiated within a period of 30(thirty) days from the date of receipt of each consignment by him /them.
- d) If it is considered necessary that the damage equipment either in part or in full to be sent back to the manufacturer's works for repair, the manufacturers/ suppliers will furnish the Bank Guarantee for the full value of equipment needing repairs and such Bank Guarantee shall remain valid till such time, the equipment are repaired and returned to the consignee in good condition. The to and fro freight, handling and insurance charges in such cases will be borne by the Supplier.
- e) Unless, otherwise mutually agreed upon, in case of failure by the Supplier to replenish /make good of the loss /damage /short supplied quantities, within the stipulated period, the Purchaser reserves the right to forfeit the security deposit and/ or adjust any outstanding payment to the "Supplier" with the Purchaser or take any other appropriate action.

31.0 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.

Appendix-1

Letter of Technical Bid

[Bidder's Letter head]

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:
- (iv) 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 another 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

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

Name of the Bidder:

NIT No. AEGCL/STTC/Tech-12/2025-26/27 Dated: 10-02-2026

Name of the work: Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3 Sec Single Centre back horizontal mechanically ganged operated isolator without earth switch and without insulator at Hailakandi GSS as per specification of existing 132 kV Isolator of Hailakandi GSS along with Supply of GR Power make Isolator Pad Clamps for panther suitable for 132 KV GR Power Isolators at Hailakandi GSS under Panchgram Sub-station Division.

Sl. No.	Item description	Unit	Quantity	Rate Per Qty (in Rs.)	F&I per Qty (in Rs.)	Total (Rs.)
1	Supply of GR Power make 145 KV, 1250 Amps 40 KA for 3 Sec Single Centre back horizontal mechanically ganged operated isolator without earth switch and without insulator at Hailakandi GSS as per specification of existing 132 kV Isolator of Hailakandi GSS	Set	1			
2	Supply of GR Power make Isolator Pad Clamps for panther suitable for 132 KV GR Power Isolators at Hailakandi GSS	Nos	12			
Total=						
Add GST@18% =						
Grand Total =						

Rupees in words

Name of the Bidder: -

Signature of the Bidder/Firm

Full Name

Postal Address

Phone/Mobile No.

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
3)	Nature of price offered	
	i) ‘FIRM’ Price	: Yes/No
4)	Terms of payment (Whether agreeable to accept payment as specified in clause- 26.0)	: Yes/No
5)	Date of completion of supply (Please specify the date of completion of supply as per specification)	: Yes/No
6)	‘Security and performance guarantee’ (Whether agreeable to accept as specified in Clause no- 27.0)	: 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	: Yes/No
13)	PAN card as per Cl. No. 19.0 (ii)	: Yes/No
14)	GST registration no. as per Cl. No. 19.0 (iv)	: Yes/No
15)	Registered Power of Attorney as per Cl.no. 19.0 (v) enclosed.	: Yes/No

Name of the Bidder: -

Signature of the Bidder/Firm

Full Name

Postal Address

Phone/Mobile No.