

# ASSAM ELECTRICITY GRID CORPORATION LIMITED

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

CIN: U40101 AS2003SGC007238

Phone: 0361-2739520/Fax: 0361-2739513 [web: www.aegcl.co.in](http://www.aegcl.co.in)



Bidding Document

For

**Supply and Erection of 1 (One) no. new 132 kV SF6 CB  
against HV side of 16 MVA Transformer-I with  
dismantling of the existing CB and associated works at  
132 kV Hailakandi GSS, AEGCL.**

DEPUTY GENERAL MANAGER  
SILCHAR T&T CIRCLE  
AEGCL, SILCHAR-788015

<b>Tender Cost: ₹ 1,000.00</b>
<b>EMD: ₹ 16,300.00</b>

For & on behalf of the **Managing Director, AEGCL, the Deputy General Manager, Silchar T&T Circle, AEGCL, Silchar**, 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 and Erection of 1 (One) no. new 132 kV SF6 CB against HV side of 16 MVA Transformer-I with dismantling of the existing CB and associated works at 132 kV Hailakandi GSS, AEGCL	8,14,188/-	150 days from the date of issue of Supply order	O/o The DGM, Silchar T&T Circle, AEGCL, Silchar, Meherpur, Silchar-15

**1.0      Cost of Bidding Document:**

Bidder has to pay Non-Refundable tender document cost of **Rs.1000.00 (Rupees One Thousand) only in the form of A/C payee Demand draft (Non-refundable) pledged in favour of “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**.

**3.0      Key Dates: -**

- |  |                          |
|--|--------------------------|
| a) Bid Document available in Website:  | 11:00 hrs. of 12.01.2024 |
| b) Bid Submission Start Time & date:   | 11:00 hrs. of 12.01.2024 |
| c) Bid Submission end time & date:     | 14:00 hrs. of 01.02.2024 |
| d) Techno-Commercial Bid Opening time: | 11:30 hrs. of 02.02.2024 |

**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:** 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
- 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 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:**

- 5.1 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.
- 5.2 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.

## **6.0 Bid Security:**

- 6.1 All bids must be accompanied by a bid security amounting to **Rs. 16,300.00 (Rupees Sixteen Thousand and Three Hundred)** only in the form of **Demand Draft** from any Nationalized Bank payable at **Guwahati** in favour “**Managing Director, AEGCL, Paltan Bazar, Guwahati-01**”.
- 6.2 Any bid not complying with the terms and conditions then his bid shall be rejected by the Employer as non-responsive.
- 6.3 The earnest money of the successful Bidder shall be returned when the successful Bidder has signed the Contract and furnished the required performance security.
- 6.4 The earnest money of the unsuccessful Bidders shall be returned as promptly as possible when the successful Bidder has signed the Contract.
- 6.5 The earnest money 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 Sign the Contract with in the specified period.
- 6.6 **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:**

- 7.1 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.
- 7.2 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.
- 7.3 A bid submitted by a JV shall be signed so as to be legally binding on all partners.
- 7.4 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:**

- 8.1 A Bidder may be a private entity or a government-owned entity or any combination of such entities with the intent to enter into an agreement supported by a letter of intent or under an existing agreement in the form of a joint venture, consortium, or association (JV). In the case of a JV:  
a) all partners shall be jointly and severally liable, and  
b) the JV shall nominate a Representative who shall have the authority to conduct all business for and on behalf of any and all the partners of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution.
- 8.2 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.
- 8.3 AEGCL considers a **conflict of interest** to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or

constitute a prohibited practice under Anticorruption Policy of Government of India and Government Of Assam. In pursuance Anticorruption Policy's requirement that Employer as well as bidders, suppliers, and contractors observe the highest standard of ethics. AEGCL will take appropriate actions if it determines that a conflict of interest has flawed the integrity of any procurement process. Consequently, all Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to:

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

8.4 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.

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

## **9.0 Financial Capability:**

9.1 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.

9.2 **Average Annual Turnover:** Minimum average annual turnover **INR 2,44,256.40** calculated as total certified payments received for contracts in progress or completed, within the last 3 (Three) Years.

## **10.0 Work Experience:**

10.1 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:

- (a) **Three (3) similar** completed works costing not less than **Rs.3,25,675.20**
- (b) **Two (2) similar** completed works costing not less than **Rs. 4,07,094.00**
- (c) **One (1) similar** completed works costing not less than **Rs. 6,51,350.40**

10.2 The Bidder must have experience of executing work of similar nature previously. The bidder must submit experience and completion certificate for scrutiny by AEGCL.

## **11.0 Evaluation Criteria:**

11.1 **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.**

11.2 Price Bid of only **Responsive and Qualified Techno-Commercial Bidders** will be opened.

11.3 **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:**

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

12.2 Arithmetic Errors in the Price Bid will be rectified on the following basis:

- (a) 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.

- (b) 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.

12.3 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:**

14.1 Any bid submitted *after the due date and time* will be rejected without any prejudice.

14.2 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.

14.3 Bidding through **EMAIL WILL NOT BE ACCEPTED.**

### 15.0 **Clarification on Bid Documents and Contacting AEGCL:**

15.1 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-788015**) 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.

15.2 The Bidder is advised to visit and examine the site where the work is to be Carried out and its

surroundings and obtain for itself on its own responsibility all information that may be necessary for preparing the bid and entering into a contract for the provision of plant and services. The costs of visiting the site shall be at the Bidder's own expense.

- 15.3 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.

## **16.0 Amendment of Bidding Document:**

- 16.1 At any time prior to the deadline for submission of bids, the Employer may amend the Bidding Document by issuing addenda.
- 16.2 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.
- 16.3 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.

## **17.0 Preparation of Bids by the Bidders:**

- 17.1 **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.
- 17.2 **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.

## **18.0 Bid Prices and Discounts:**

- 18.1 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.
- 18.2 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.
- 18.3 Bidders are required to quote the price for the commercial, contractual and technical obligations outlined in the bidding document.
- 18.4 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.
- 18.5 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.
- 18.6 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.
- 18.7 **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 (133 KV & above)

## 20.0 **TECHNICAL REQUIREMENTS**

### 20.1 **Intent of specification**

This section of the specification deals with the technical information & criteria for **“Supply and Erection of 1 (One) no. new 132 kV SF6 CB against HV side of 16 MVA Transformer-I with dismantling of the existing CB and associated works at 132 kV Hailakandi GSS, AEGCL”**. The Contractor's proposal shall be based on the use of materials complying fully with the requirements specified herein.

### 20.2 **Scope of Works :-**

- a) The scope of work involves **“Supply and Erection of 1 (One) no. new 132 kV SF6 CB against HV side of 16 MVA Transformer-I with dismantling of the existing CB and associated works at 132 kV Hailakandi GSS, AEGCL”**.
- b) Freight and Transit insurance, storage at site and site insurance of all materials at site shall be in the scope of the contractor.

### 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:

<b>Peak ambient day temperature in still air</b>	<b>: 45<sup>0</sup>C</b>
<b>Minimum night temperatures</b>	<b>: 0<sup>0</sup>C</b>
<b>Reference ambient day temperature</b>	<b>: 45<sup>0</sup>C</b>
<b>Maximum Relative Humidity</b>	<b>: 100%</b>
<b>Minimum Relative Humidity</b>	<b>: 10%</b>
<b>Altitude</b>	<b>: Below 1000 M above MSL</b>
<b>Maximum Wind Pressure</b>	<b>: As per IS:802 latest code</b>
<b>Seismic Intensity</b>	<b>: ZONE-V as per IS 1893</b>

### 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:-**

- The supplier shall submit all drawings and documents of all equipment to be supplied include drawings of foundation, steel structure and any other drawings that may be required for successful completion of the project and get it approved by the Purchaser.
- In addition, the following sub clauses shall also apply in respect of Contract Drawings.
- All drawings submitted by the Supplier including those submitted at the time of Bid shall be with sufficient detail to indicate the type, size, arrangement, dimensions, material description, bill of materials, weight of each component break-up for packing and shipment, fixing arrangement required, the dimensions required for installation and any other information specifically requested in these specifications.
- Each drawing submitted by the Supplier shall be clearly marked with the name of the Purchaser, the specification title, the specification number and the name of the project. All titles, noting, markings and writings on the drawing shall be in English. All the dimensions should be to the scale and in S.I. units.
- The drawing submitted for approval to the Purchaser shall be in quadruplicate. One print of such drawings shall be returned to the supplier by the Purchaser marked “approved/approved with corrections”. The Supplier shall there upon furnish the Purchaser additional prints as may be required along with one reproducible in original of the drawings after incorporating all corrections.

#### **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, Inspection & Testing:-**

To ensure that the supply of manufactured equipment(s) and services under the scope of this contract whether manufactured or performed within the contractor’s works or at his subcontractor’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. Such programme shall be outlined by the contractor and shall be finally accepted by the Purchaser after discussions before award of contract. A quality assurance programme of the contractor shall generally cover but not limited to the following:

- His organization structure for the management and implementation of the proposed quality assurance programme.
- Documentation control system.
- Qualification data for contractor’s key personnel
- The procedure for purchase of materials, parts components and selection of subcontractor’s services including vendor analysis, source inspection, incoming raw material inspection, verification of material purchases, etc.
- System for shop manufacturing including process controls and fabrication and assembly controls.
- Control of non-conforming items and system for corrective action
- Control of calibration and testing of measuring and testing equipment
- Inspection and test procedure for manufacture
- System for indication and appraisal of inspection status



- System for quality audits
- System for authorizing release of manufactured product to the Purchaser
- System of maintenance of records
- System for handling storage and delivery
- A quality plan detailing out the specific quality control procedure adopted for controlling the quality characteristics relevant to each item of supply. The quality plan shall be mutually discussed and approved by the Purchaser after incorporating necessary corrections by the contractor as may be required.

#### **20.11 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.

#### **20.12 Employer's Supervision:-**

- 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.
- The manufacturing of the product shall be carried out in accordance with the specifications. The scope of the duties of the Employer, pursuant to the contract, will include but not be limited to the following.
  - a) Interpretation of all the terms and conditions of these Documents and Specifications.
  - b) Review and interpretation of all the Contractors drawings, engineering data etc.
  - c) Witness or authorize his representative to witness tests at the manufacturer's works or at site, or at any place where work is performed under the contract.
  - d) Inspect, accept or reject any equipment, material and work under the Contract, in accordance with the Specifications.
  - e) Issue certificate of acceptance and/or progressive payment and final payment certificate.
  - f) Review and suggest modification and improvement in completion schedules from time to time,
  - g) Supervise the Quality Assurance Programme implementation at all stages of the works.

#### **20.13 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.

#### **20.14 Classification of 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 Type Test Reports:-**

- Materials, which have never been tested for critical performance, shall not be accepted. In such cases, a promise or agreement by a bidder to have the equipment tested after award of a contract is not acceptable.
- All Bids must be accompanied by the Type Test Certificates of materials offered. Such type test certificates shall be acceptable only if:
  - i) Tests are conducted in an independent testing laboratory with NABL accreditation/CPRI,
  - ii) Tests are conducted in manufacturer's own laboratory.
 In this case
  - (a) The laboratory must have NABL accreditation; and
  - (b) Tests have been witnessed by technically qualified representatives of earlier clients or purchaser.
- Test reports to be acceptable must be related directly to the equipment offered i.e. it is fully identical in design, rating and construction with the equipment for which the type test certificates have been submitted. Test reports for higher class (by capacity/voltage etc.) of equipment are acceptable with commitment to perform the type tests free of any charge on the particular equipment after the award of contract.
- Type Test Reports older than five (5) years on the date of Technical bid opening shall not be accepted.

#### **20.16 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.

#### **20.17 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.

## **21.0 SPECIFICATION:-**

### **21.1 TECHNICAL SPECIFICATION OF 132 KV SF6 CIRCUIT BREAKER:-**

#### **21.1.1 SCOPE:-**

- The intention of this Section of the Specification is to cover design, manufacture, testing at manufacturer's works of Circuit Breakers with all fittings and accessories including mounting structures as applicable.
- Loading at manufacturer's works, transportation and delivery at respective substation sites, including unloading at destination sites.
- Erection, Testing and Commissioning of Circuit Breakers.

#### **21.1.2 GENERAL REQUIREMENTS**

- The circuit breaker shall be of three phase unit (gang operated) (or) three identical single phase units (as said in data sheet), outdoor, single pressure puffer type. The operating mechanism shall be electrically and mechanically trip/free with anti-pumping facility suitable for remote electrical closing, tripping as well as local Operation facility as specified. The CBs are meant for installation with Transformers HV side.
- The circuit breaker shall be so designed to withstand the effects of temperature, wind load, short circuit conditions and other adverse conditions.
- The circuit breaker shall be capable of switching transformer-magnetizing currents and shall be restrike – free.
- All similar parts, particularly removable ones, shall be interchangeable with one another.
- All cable ferrules, lugs, tags, etc. required for cabling from equipment control cabinet/operating mechanism to the central control cabinet of the breaker shall be supplied loose as per approved schematics.
- The SF6 breaker shall be designed to ensure that condensation of moisture is controlled by proper selection of organic insulating materials having low moisture absorbing characteristics.
- The support structure of circuit breaker shall be hot dip galvanised. Sufficient galvanising thickness shall be achieved with 615 gm/m<sup>2</sup>. All other parts shall be painted as per painting specification enclosed separately.

#### **21.1.3 OPERATING MECHANISM**

- A power spring operated mechanism for closing and tripping shall be provided in the breaker control cabinet. This device shall be so interlocked that while it is under maintenance, the breaker cannot be operated from remote. A slow acting, manually operated device shall be provided for inspection and maintenance purposes.
- Circuit breaker operating mechanism shall be capable of storing energy for at least two complete closing and tripping operations.
- Each mechanism shall have an operation counter.
- The operating mechanism shall be mounted and enclosed in a weather proof, vermin-proof, sheet steel cabinet conforming to IP: 55 degree of protection. Sheet steel thickness shall be as specified in data sheet. The cabinet shall also house relays, control and auxiliary equipment of each breaker and provision for terminating all control, alarm and auxiliary circuits. It shall be provided with hinged doors with provision for locking and removable gland plates to be drilled at site. Inspection window shall be provided for observation of the instruments without opening the cabinet. It shall be mounted so as to provide convenient access from ground level.
- The cabinet shall be fitted with a thermostatically controlled anti-condensation heater, a 15A, 1 phase, 5 pin socket outlet with switch and a cubicle illuminating lamp suitable for operation on 240 V AC 50Hz supply.
- Circuit breakers shall feature high repeatability of absolute closing time over a wide range of parameters (ambient temperature, pneumatic pressure, control voltages, etc).
- Main poles shall operate simultaneously. There shall be no objectionable rebound and the mechanism shall not require any critical adjustment. It shall be strong, rigid, positive and fast in operation.
- Disagreement circuit shall be provided which shall detect pole position discrepancy.
- The design of the circuit breaker shall be such that contacts will not close automatically upon loss of gas/ air pressure.

- Closing release shall be capable of operating within the range of the rated voltage as specified in the data sheet. Shunt trip shall operate satisfactorily under all operating conditions of the circuit breaker up to the rated breaking capacity of the circuit breaker within the range of the rated voltages specified in the Data sheet.
- Working parts of the mechanism shall be of corrosion resisting material. Bearings which require grease shall be equipped with pressure type grease fittings. Bearing pin, bolts, nuts and other parts shall be adequately pinned or locked to prevent loosening or changing adjustment with repeated operation of the breaker.
- All controls, gauges, relays, valves, hard drawn copper piping and all other accessories as necessary shall be provided including the following:
  - Low pressure alarm and lock out relay with adjustable pressure setting suitable for operation on DC system.
  - A no-volt relay for remote indication of power failure for compressor motor/ Spring Charge motor.
- As long as power is available to the motor, continuous sequence of closing and opening operations shall be possible.
- After failure of power supply to the motor, at least one open-close-open operation of the circuit breaker shall be possible.
- Motor rating shall be such that it requires only about 30 seconds for full charging of the closing spring.
- Closing action of the circuit breaker shall compress the opening spring ready for tripping.
- During closing, springs are discharged and after closing of breaker, springs shall automatically be charged for the next operation. Facility for manual charging of closing springs shall be provided. Mechanical interlocks shall be provided in the operating mechanism to prevent discharging of closing springs when the breaker is already in the closed position.

#### **21.1.4 OPERATING MECHANISM CONTROL**

- The breaker shall normally be operated by remote electrical control. Two electrically independent trip circuit including two trip coils per pole shall be provided. However, provision shall be made for local electrical control. For this purpose a local/remote selector switch, close and trip control switch/push button shall be provided in the breaker central control cabinet.
- The two way Local/Remote switch shall have minimum 4 (four) pair of contacts and wiring shall be made available to monitor local/remote status from local SCADA/SAS.
- The trip coils shall be suitable for trip circuit supervision during both open and close position of the breaker. Necessary terminals shall be provided in the central control cabinet of the circuit breaker by the CONTRACTOR.
- The auxiliary switch of the breaker shall be positively driven by the breaker operating rod.
- A conveniently located manual tripping lever or button shall also be provided for local tripping of the breaker and simultaneously opening the reclosing circuit. A local manual closing device which can be easily operated by one man standing on the ground shall also be provided for maintenance purpose. Direction of motion of handle shall be clearly marked.
- Necessary platform with Ladder shall be provided for easy access to the Operating Box thereby easing out local operation/maintenance.
- **When the spring get fully charged either through motor or hand cranking, the spring charging motor and the hand cranking device should get disengaged mechanically from the charged spring and this should not be depended upon only the limit switch.**

#### **21.1.5 SF6 GAS SYSTEM**

- SF6 gas shall serve as an arc-quenching medium during opening/closing operation and as an insulating medium between open contacts of the circuit breaker.
- The circuit breaker shall be single pressure type. The design and construction of the circuit breaker shall be such that there is a minimum possibility of gas leakage and entry of moisture. There should not be any condensation of SF6 gas on the internal insulating surfaces of the circuit breaker.
- All gasketed surfaces shall be smooth, straight and reinforced, if necessary, to minimize distortion and to make a tight seal, the operating rod connecting the operating mechanism to the arc chamber (SF6 media) shall have adequate seals. The SF6 gas leakage should not exceed 1% per year.
- In the interrupter assembly there shall be an absorbing product box to minimize the effect of SF6 decomposition products and moisture. The material used in the construction of the circuit breakers shall be such as fully compatible with SF6 gas decomposition products.
- The dial type SF6 density monitor shall be adequately temperature compensated to model the pressure changes due to variations in ambient temperature within the body of circuit breaker as a whole. The density monitor shall have graduated scale and shall meet the following requirements:
- It shall be possible to dismantle the density monitor for checking/replacement without draining the SF6 gas by providing suitable interlocked non return valve coupling.

### **21.1.6 BUSHINGS AND INSULATORS**

- Bushings and Insulators shall be of Porcelain, Solid core type.
- Bushings shall be manufactured and tested in accordance with IS: 2099 & IEC- 60137, while Hollow column insulators shall be manufactured and tested in accordance with IEC-62155/IS: 5621.
- The support insulators shall be manufactured and tested as per IS: 2544/IEC-60168 and IEC-60273. The insulators shall also conform to IEC-60815 as applicable.
- Porcelain used for the manufacture of bushings and insulators shall be homogeneous, free from defects, cavities and other flaws or imperfections that might affect the mechanical or dielectric quality and shall be thoroughly vitrified, tough and impervious to moisture.
- Glazing of the porcelain shall be of uniform brown colour, free from blisters, burns and other similar defects. Bushings shall be designed to have sufficient mechanical strength and rigidity for the conditions under which they will be used. All bushings of identical ratings shall be interchangeable.
- Puncture strength of bushings shall be greater than the dry flashover value. When operating at normal voltage, there shall be no electric discharge between the conductors and bushing which would cause corrosion or injury to conductors, insulators or supports by the formation of substances produced by chemical action. No radio interference shall be caused by the bushings when operating at the normal rated voltage.
- Bushings shall satisfactorily withstand the insulation level specified in data sheet.

### **21.1.7 FIXED AND MOVING CONTACTS**

- Main contacts shall have ample area and contact pressure for carrying the rated current and the short time rated current of the breaker without excessive temperature rise which may cause pitting or welding. Contacts shall be adjustable to allow for wear, easily replaceable and shall have minimum moving parts and adjustments to accomplish these results. Main contacts shall be the first to open and the last to close so that there will be little contact burning and wear out.
- Arcing contacts, if provided, shall be the first to close and the last to open and shall be easily accessible for inspection and replacement. Tips of arcing and main contacts shall be silver faced.
- If multi-break interrupters are used, they shall be so designed and augmented that a fairly uniform voltage distribution is developed across them.

### **21.1.8 INTERLOCKS**

- Key release mechanical interlocks shall be incorporated in the operating mechanism for interlocking with the associated isolators, so that operation of the circuit breaker is dependent on a "key-trapped" situation. In addition, electrical interlocks with associated isolators shall be provided.

### **21.1.9 ADDITIONAL DUTY REQUIREMENTS**

- Circuit breakers shall be capable of clearing short line faults with the same impedance behind the bus corresponding to the rated fault current.
- Circuit breakers shall be capable of breaking 25% of rated fault current at twice rated voltage under out of phase conditions.
- The Bid shall highlight the design features provided to effectively deal with:
  - a) Breaking of inductive currents and capacitive currents.
  - b) Charging of long lines and cables.
  - c) Clearing developing faults within the full rating of the breaker.
  - d) Opening on phase opposition.

### **21.1.10 ACCESSORIES**

#### **a) Gas Pressure Detector**

The circuit breaker shall be provided with gas pressure monitor with temperature compensation for initiating alarm and locking the operating mechanism in the event of abnormality.

**Gas pressure monitor shall be provided for each pole individually.**

#### **b) Position Indicator:-**

Each pole of the circuit breaker shall be provided with a position indicator

#### **c) Terminals:-**

Each circuit breaker shall be provided with suitable terminal pads of high conductivity aluminium alloy for connecting to the line.

**d) Auxiliary Switches:-**

Each circuit breaker shall be equipped with auxiliary switches with sufficient number of contacts for control, indication and interlocking purposes. Ten normally open and ten normally closed contacts shall be provided as spares. All contacts shall be rated for the DC voltage specified in data sheet.

**e) Terminal Blocks:-**

All accessories and control devices shall be completely wired. All wirings which are connected to external circuit shall be terminated on terminal blocks installed in the control cabinet. The terminal blocks provided shall have twenty (20) percent spare terminals.

- Operating mechanism housing shall be supplied with all required accessories including the following:
  - a) Padlocks and duplicate keys.
  - b) Space heaters equipped with automatic thermostatic control.
  - c) Local/remote changeover switch.
  - d) Manually operated tripping push button/lever (mechanical) conveniently located to trip all three phases simultaneously.
  - e) Control switches to cut off control power supplies.
  - f) Fuses as required.
  - g) Two earthing terminals.
  - h) Auxiliary relays required for satisfactory operation.
  - i) Motor contactor with thermal release
  - j) Provision for mechanical interlock with isolator.
  - k) Readable wiring diagram shall be pasted inside the front cover of the operating mechanism box with indelible ink.

#### **21.1.11 SUPPORT STRUCTURES**

- The Circuit Breakers shall be suitable for mounting on steel structures.
- The support structure shall be of steel hot dip galvanized type. The height of support structure shall be designed to keep the bottom most live part and bottom of insulators of circuit breakers at minimum clearance from the plinth as specified in data sheet.
- All necessary galvanized bolts, nuts and washers to complete the erection shall be furnished including the embedded anchor bolts for securing the supporting structure to the concrete foundations.

#### **21.1.12 NAME PLATES**

- All equipment shall have non-corrosive name plates fix at a suitable position indelibly mark with full particular there on in accordance with the standard adapted.

#### **21.1.13 EARTHING**

- Two earthing pads shall be provided on each supporting structure. Each control cabinet or terminal box mounted on the supporting structure shall also be connected to an earthing pad. Separately mounted control cabinets shall be provided with two earthing pads adjacent to the base of the cabinet. The earthing connection shall be bolted type and suitable for receiving 65mm x 12mm MS strip.

#### **21.1.14 TERMINAL CONNECTORS**

- The equipment shall be supplied with required number of terminal connectors of approved type suitable for ACSR conductors. The type of terminal connector, size of connector, material, and type of installation shall be approved by the Purchaser, as per installation requirement while approving the equipment drawings.

#### **21.1.15 TESTS**

- All routine tests shall be carried out in accordance with relevant IS.
- All routine/acceptance tests shall be witnessed by the Purchaser/his authorized representative. The tests shall include the following:

**a) Routine/Acceptance Tests (all units)**

- i) Mechanical Operation tests
- ii) Power frequency voltage withstand test (dry)
- iii) Tests on auxiliary & control circuits

iv) Measurement of resistance of the main circuit.

**b) Type Tests:**

The bidder shall furnish type test certificates and results for the following tests along with the bid for breaker of identical design.

- i) Breaking and making capacity test
- ii) Short-time current test
- iii) Temperature rise tests
- iv) Lightning Impulse voltage test

**c) Special Tests:**

The operating mechanism box shall be tested for paint film thickness and the galvanization test for structure shall be conducted in one of the unit of each type.

**d) Test Certificates**

Copies of routine/acceptance test certificates shall be produced with the endorsement of the inspecting authority to the Purchaser before effecting dispatch. The test report shall contain the following information.

- i) Complete identification data, including serial No. of the breaker.
- ii) Method of application, where applied, duration and interpretation of results in each test.

**21.1.16 PRE-COMMISSIONING TESTS**

Contractor shall carry out following tests as pre-commissioning tests. Contractor shall also perform any additional test based on specialties of the items as per the field instructions of the equipment Supplier or Employer without any extra cost to the Employer. The Contractor shall arrange all instruments required for conducting these tests along with calibration certificates and shall furnish the list of instruments to the Employer for approval.

- (a) Insulation resistance of each pole.
- (b) Check adjustments, if any suggested by manufacturer.
- (c) Breaker closing and opening time.
- (d) Slow and Power closing operation and opening.
- (e) Trip free and anti-pumping operation.
- (f) Minimum pick-up voltage of coils.
- (g) Dynamic Contact resistance measurement.
- (h) Functional checking of control circuits interlocks, tripping through protective relays and auto reclose operation.
- (i) Insulation resistance of control circuits, motor etc.
- (j) Resistance of closing and tripping coils.
- (k) SF6 gas leakage check.
- (l) Dew Point Measurement
- (m) Verification of pressure switches and gas density monitor.
- (n) Checking of mechanical 'CLOSE' interlock, wherever applicable.
- (o) Testing of grading capacitor.
- (p) Resistance measurement of main circuit.
- (q) Checking of operating mechanism.
- (r) Check for annunciations in control room.

**21.1.17 SPECIAL TOOLS AND TACKLES**

The Bidder shall furnish a list of any special tools and tackles required for maintenance and operation purposes with recommended quantities for each substation.



### 21.1.18 TECHNICAL DATA SHEET FOR 132 kV CIRCUIT BREAKER

<b><u>Sl. No.</u></b>	<b><u>Particulars</u></b>	<b><u>Unit</u></b>	<b><u>Data for 132 kV CB</u></b>
<u>1</u>	Type		Sf6
<u>2</u>	No of poles		3 (3 Phase Ganged Unit)
<u>3</u>	Service		Outdoor
<u>4</u>	Rated System Voltage	kV	132
<u>5</u>	Highest System Voltage	kV	145
<u>6</u>	System earthing		Solidly earthed system
<u>7</u>	Rated Voltage of Breaker	kV	145
<u>8</u>	Rated Continuous Current	Amps	1250
<u>9</u>	Rated Frequency	Hz	50
<u>10</u>	Rated Short Circuit breaking current (I) – 3 sec - symmetrical	kA	31.5/40
<u>11</u>	Rated Short Circuit making current	kA <sub>p</sub>	100/79
<u>12</u>	Duty cycle		0-0.3 Sec-CO-3Min –CO
<u>13</u>	First pole to clear factor		1.3
<u>14</u>	<b><u>Operating time :-</u></b>		
	a) Opening Time	ms	Not exceeding 30 ms
	b) Closing Time	ms	Not exceeding 70 ms
<u>15</u>	<b><u>Insulation level :-</u></b>		
	a) Power Frequency with Stand Voltage	kV(rms)	275
	b) Impulse withstand Voltage	kV <sub>p</sub>	650
<u>16</u>	Minimum clearance between phases	mm	1300
<u>17</u>	Minimum clearance between phase to earth	mm	1300
<u>18</u>	Minimum Ground clearance (from bottommost live part to plinth level)	mm	4600
<u>19</u>	Minimum clearance from bottom Of Support insulator to plinth level	mm	2500
<u>20</u>	i. Minimum Creepage Distance (Total)	mm	3635
	ii. Minimum Creepage Distance (Protected)	mm	1813
<u>21</u>	Arcing horn		
<u>22</u>	<b><u>Operating mechanism:</u></b>		
	a) Type		Spring Charged
	b) Rating of Drive Motor	V	Universal Motor/ 1 Phase 50 Hz 230V AC
	c) Rated voltage of Shunt trip coil & operating range	V. DC	110 V [50% - 110%]
	d) Rated voltage of Closing coil & operating range	V.DC	110 V [80% - 110%]
	e) No. of trip coils	No.	2 per CB
	f) No. of closing coils	No.	1 per CB
	g) No of spare auxiliary contacts & contact rating	No. AMPS	10 N/O+10 N/C (per CB) 10A at 110V DC
	h) Minimum thickness of sheet steel for control cabinet	mm	3
	i) Enclosure Protection		IP55
<u>23</u>	Reclosing		Three Phase Auto Reclosing
<u>24</u>	Support structure (Painted / Galvanized)		Hot Dip Galvanized
<u>25</u>	All other parts (Painted / Galvanized)		Synthetic enamel shade 631 of IS5(125 microns)
<u>26</u>	Minimum size of control wiring (Copper)	Sq. mm	2.5



22.0     **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:

- 22.1 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.

- 22.2 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.

23.0     **Warranty:**

- 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.
- The Supplier/Manufacturer further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in the country of final destination. The supplier will provide warranty for the works executed by them.
- 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.
- 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.
- The term period of warranty shall mean the period of **18 (Eighteen) months from the date of commissioning of the work**. The successful bidder should warrant the free replacement of any damaged/malfunctioning equipment and its accessories during the warranty period.

24.0     **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, Meherpur, Silchar**. 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

25.0     **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**.

26.0     **Performance security deposit:**

- 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-788015** by the successful Bidder.

- 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. .
- 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.
- No interest shall be payable on such deposits.

## **27.0      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.

## **28.0      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 **Hailakandi District**.

## **29.0      Insurance :**

- 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.
- 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.
- 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.
- If it is considered necessary that the damaged 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.
- 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.

## **30.0      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](http://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.

**Full Name of the Bidder/Firm:** -.....

**Signature of the Bidder/Firm** .....

**Postal Address** .....

**Phone/Mobile No.** .....

**E-mail Id:** - .....

**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-12/2023-24/10                      **Dated:** 11.01.2024

**Name of the work:** Supply and Erection of 1 (One) no. new 132 kV SF6 CB against HV side of 16 MVA Transformer-I with dismantling of the existing CB and associated works at 132 kV Hailakandi GSS, AEGCL.

Sl. No.	Item Description	Measuring Unit	Quantity	Unit Price in ₹	Total Price in ₹
1	132 kV Gang Operated SF6 Circuit Breaker with mounting structures and terminal connectors etc. as applicable as per Specification	No.	1		
2	Dismantling of One (1) No. existing 132 kV CB against HV side of Transformer-I Bay with structures (Including all necessary associated works)	No.	1		
3	Erection of 01 (One) No. of New 132 kV CB against HV side of Bay with structures (Including all necessary associated works)	No.	1		
4	Fabrication of equipment structure (With departmental Supply):  CB for 132 kV Level	Per Job	1		
5	Dragging of the dismantled 132 kV CB to a suitable site within the sub-station (Weight of the CB= 1.5 MT, Distance= 70 m so Quantity = 1.5 MT X 70 m = 105 MTm)	Per MT Per Meter	105		
	Total Amount				
	Add GST				
	Grand Total				

**Rupees in words** .....

**Full Name of the Bidder/Firm:** - .....

**Signature of the Bidder/Firm:-** .....

**Postal Address:** - .....

**Phone/Mobile No.:-** .....

**E-mail Id:** - .....

**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 <b>clause-33.0</b> )	: 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 <b>Clause no-34.0</b> )	: 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 <b>Cl. No.19.0 (ii)</b>	: Yes/No
14)	GST registration no. as <b>per Cl. No. 19.0 (iv)</b>	: Yes/No
15)	Registered Power of Attorney as per Cl. no. <b>19.0 (v)</b> enclosed.	: Yes/No

**Full Name of the Bidder/Firm: -**.....

**Signature of the Bidder/Firm** .....

**Postal Address** .....

**Phone/ Mobile No.** .....

**E-mail Id:-** .....

## **ANNEXURE – II**

### **GUARANTEED AND OTHER TECHNICAL PARTICULARS**

*(To be filled in by Bidder and shall be furnished with the Technical Bid)*

<u><b>Sl. No.</b></u>	<u><b>Particulars</b></u>	<u><b>Unit</b></u>	<u><b>Data for 132 kV CB</b></u>
<u>1</u>	Type		
<u>2</u>	No of poles		
<u>3</u>	Service		
<u>4</u>	Rated System Voltage	kV	
<u>5</u>	Highest System Voltage	kV	
<u>6</u>	System earthing		
<u>7</u>	Rated Voltage of Breaker	kV	
<u>8</u>	Rated Continuous Current	Amps	
<u>9</u>	Rated Frequency	Hz	
<u>10</u>	Rated Short Circuit breaking current (I) – 3 sec - symmetrical	kA	
<u>11</u>	Rated Short Circuit making current	kA <sub>p</sub>	
<u>12</u>	Duty cycle		
<u>13</u>	First pole to clear factor		
<u>14</u>	<u><b>Operating time :-</b></u>		
	c) Opening Time	ms	
	d) Closing Time	ms	
<u>15</u>	<u><b>Insulation level :-</b></u>		
	c) Power Frequency with Stand Voltage	kV(rms)	
	d) Impulse withstand Voltage	kV <sub>p</sub>	
<u>16</u>	Minimum clearance between phases	mm	
<u>17</u>	Minimum clearance between phase to earth	mm	
<u>18</u>	Minimum Ground clearance (from bottommost live part to plinth level)	mm	
<u>19</u>	Minimum clearance from bottom Of Support insulator to plinth level	mm	
<u>20</u>	iii. Minimum Creepage Distance (Total)	mm	
	iv. Minimum Creepage Distance (Protected)	mm	
<u>21</u>	Arcing horn		
<u>22</u>	<u><b>Operating mechanism:</b></u>		
	j) Type		
	k) Rating of Drive Motor	V	
	l) Rated voltage of Shunt trip coil & operating range	V. DC	
	m) Rated voltage of Closing coil & operating range	V.DC	
	n) No. of trip coils	No.	
	o) No. of closing coils	No.	
	p) No of spare auxiliary contacts & contact rating	No. AMPS	
	q) Minimum thickness of sheet steel for control cabinet	mm	
	r) Enclosure Protection		
<u>23</u>	Reclosing		
<u>24</u>	Support structure (Painted / Galvanized)		
<u>25</u>	All other parts (Painted / Galvanized)		
<u>26</u>	Minimum size of control wiring (Copper)	Sq. mm	