

**BIDDING DOCUMENT**

FOR

**Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
Transmission line from Nazira GSS gantry to Loc. No. 115**

# ASSAM ELECTRICITY GRID CORPORATION LIMITED



**Fund: O&M HQ UAR**

**BID IDENTIFICATION NO:  
AEGCL/MD/CGM(UAR)/132KV NZR-TEOK/Insulators/2026/BID**

**Tender Fee: Rs. 1500.00**

## SECTION 1

### INSTRUCTION TO BIDDERS

**Corporate Office,**  
**Assam Electricity Grid Corporation Limited, Bijulee Bhawan,**  
**Paltan Bazar, Guwahati-781001**  
PHONE: 0361-2739520 FAX NO.0361-2739513  
Web: [www.aegcl.co.in](http://www.aegcl.co.in) Email: [managing.director@aegcl.co.in](mailto:managing.director@aegcl.co.in)

#### 1.1.0 INTRODUCTION:

The Chief General Manager (O&M), UAR on behalf of Assam Electricity Grid Corporation Ltd (AEGCL), hereinafter referred to as AEGCL or Purchaser invites single stage two envelope e-bids for the following work from eligible manufacturers/firms/companies / contractors. Joint venture is allowed for this bid.

**a) Name of work:** **Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115**

#### 1.2.0 INTENT OF THE TENDER ENQUIRY:

The intent of the Tender Enquiry is to invite proposals from the prospective and relevantly experienced and financially sound contractor(s) /firms to carry out the works as specified in this bidding document.

#### 1.3.0 SCOPE OF WORK:

The major scopes of work are as follows: -

- a) Design and supply of all equipment/materials as per BoQ and bid specification.
- b) Replacement of disc insulators as per BoQ and bid specification.
- c) Storage of dismantled materials and accessories to AEGCL store including transportation to store and material handling.
- d) Freight and Transit Insurance, storage at site and site insurance of all material at site shall be in the scope of the contractor.
- e) Any permits required for supply of materials shall be arranged by the contractor. However, AEGCL shall assist the contractor in arranging permits if any to the extent possible.

#### 1.4.0 TIME SCHEDULE:

The successful bidder shall have to complete the works within **7 (Seven) months** from the date of signing of contract agreement.

#### 1.5.0 ESTIMATE:

**Rs. 69,13,797.00 (Rupees Sixty-Nine Lakh Thirteen Thousand Seven Hundred and Ninety-Seven) Only including GST.**

#### 1.6.0 ELIGIBILITY CRITERIA:

##### 1.6.1. EXPERIENCE

Experience having completed similar works during the last 7 years, as on the last date of bid submission, should be either of the following:

- i. **Three similar completed works** each costing not less than the amount equal to **40% of the estimated amount**.

or

- ii. **Two similar completed works** each costing not less than the amount equal to **50% of the estimated amount**.

or

- iii. **One similar completed work** costing not less than the amount equal to **80% of the estimated amount**.

Note: "Similar work" is defined as work of construction/repairing/shifting/height raising of Transmission line.

- iv. If the nature of work and value differs from the above stated conditions, it will not be considered while evaluation of technical qualification.
- v. The bidder must have valid electrical license of voltage class 132KV and above
- vi. **The bidder must supply insulators from reputed manufacturers. The bidder must submit Manufacturer Authorization, GTP & drawings and Type Test Report of the offered product. Performance certificate establishing satisfactory performance of the offered insulator for a period not less than 5 years must be submitted along with the bid.**

Bidders must compulsorily submit work order and work competition certificate issued from competent authority satisfying the above-mentioned work experience criteria for technical qualification. Moreover, AEGCL reserves the right to scrutinize any work order/work competition certificate submitted by the bidders with issuing authority and if any abnormalities are observed in the same, their bids will be rejected.

Bidder must fill form **EXP-I** and submit supporting documents (Copy of work orders and completion certificates) to establish his experience. Performance certificate from competent authority showing satisfactory performance for a period not less than one year is to be submitted.

**Participation as Joint Venture/Consortium is allowed for this bid. In case bidder is participating as JV, experience of all partners combined should meet the eligibility criteria (Experience) under clause 1.6.1.**

#### **1.6.2. FINANCIALS:**

- i. As a minimum, a Bidder's net worth calculated as the difference between total assets and total liabilities should be positive. As supporting document, bidder should submit audited balance sheets or other financial statements acceptable to the Purchaser, for last 3 (three) financial years to demonstrate the current soundness of the Bidders financial position and its prospective long-term profitability. Apart from audited balance sheet, bidder shall submit duly filled and signed **Form 'FIN-1'** given in Section 2. Using the 'Form LIT – 1' (Section 2, Bidding Form), bidder shall list all Pending Litigation. All pending litigation shall be treated as resolved against the Bidder and so shall in total not represent more than 50% percent of the Bidder's net worth.

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- ii. Bidder must have minimum **Average Annual Turnover (AAT) of Rs. 21,00,000.00 (Rupees Twenty-One Lakh only)**. AAT shall be calculated by averaging total certified payments received for contracts in progress or completed, of the last 3 (three) financial years. The bidder shall furnish, along with its bid, audited balance sheets and duly filled up Form 'FIN-2' in support of this Clause.
- iii. Bidder must demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:
  - (a) the cash-flow requirement, **Rs. 10,00,000.00 (Rupees Eight Lakh) only** for this work and
  - (b) the overall cash flow requirements for this contract and its current works commitment.
  - (c) The cash flow must be furnished in the prescribed format of ICAI (Institute of chartered accountant of India).

Bidder must submit duly filled and signed **Form FIN-3 & FIN-4** of section 2 in support of this clause.

**Joint Venture/Consortium is allowed for this bid. In case bidder is participating as JV, all partners combined should meet the eligibility criteria (Financial) under clause 1.6.2.**

**1.6.3. TYPE TEST REPORT:**

The offered products must be type tested at CPRI or NABL accredited test laboratory for critical performance at the time of bid submission. Bidder must submit full type test reports for the offered product along with the techno-commercial bid.

**1.7.0 SITE VISIT:**

The bidders are advised to visit and examine the sites 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. The location of work is along the 132KV Nazira-Teok Transmission Line.

**1.8.0 QUANTUM OF WORK:**

The quantum of work is stated in the PRICE SCHEDULE at the end of section 2 – bidding forms.

**1.9.0 QUERY ON THE BIDDING DOCUMENT:**

Prospective bidder may submit queries, if felt necessary, requesting clarification of any bid clause. Such queries must be submitted in the e-tendering portal latest by the **Tender clarification end date and time** mentioned in the Bid Data Sheet. Purchaser shall clarify to the extent felt necessary or issue corrigendum for any amendment required in the bidding document. Such corrigendum/clarification shall be made available in the e-tendering portal and official website of AEGCL, [www.aegcl.co.in](http://www.aegcl.co.in). Any query submitted outside the e-tender portal viz. email, or in physical letters, shall not be entertained.

**1.10.0 CLARIFICATION OF BIDS**

To assist in the examination, evaluation, and comparison of the Technical and Price Bids, and qualification of the Bidders, the Purchaser may, at its discretion, ask any Bidder for a clarification of its bid. Any clarification submitted by a Bidder that is not in response to a request by the Purchaser shall not be considered. The

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Purchaser's request for clarification and the response shall be in writing. No change in the substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the bids. If a Bidder does not provide clarifications of its bid by the date and time set in the Purchaser's request for clarification, its bid may be rejected.

#### 1.11.0 DEADLINE FOR SUBMISSION OF BID

Bids shall be received ONLINE only on or before the date and time indicated in the Bid Data Sheet. The Purchaser may, at its discretion, extend the deadline for the submission of bids by amending the Bidding Document, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended.

#### 1.12.0 SUBMISSION OF BID:

The bidder shall submit the techno commercial & price bid through e-tendering portal <https://assamtenders.gov.in>. All documents as required by this bidding document shall be scanned and uploaded in the portal. Price schedule should be submitted in the format provided in the online portal. Bidder must go through the document checklist provided in this bidding document and submit all required document. Bidders are also requested to submit the information in the format provided in this bidding document where applicable.

In addition to the online bid submission, (i) **Duly filled and signed tender submission form** and (ii) **Authorization letter of bid signatory** must be submitted in a sealed envelope superscribed with the name of bidder, full address, IFB reference, name of work etc. at the office of the Managing Director, Assam Electricity Grid Corporation Ltd, Bijulee Bhawan, Paltan Bazar Guwahati-781001 **one hour prior to bid submission end date and time. In case these documents are not received, the bid shall be summarily rejected.**

#### 1.13.0 BID VALIDITY

The validity of bid shall be for **180(One Hundred Eighty) days** from the date of bid submission end date.

#### 1.14.0 OPENING OF TECHNO-COMMERCIAL BIDS

The Purchaser shall conduct the opening of Technical Bids through online process at the address, date and time specified in the BDS. Bidders at their discretion may attend the techno-commercial bid opening.

Price bid of those bidders shall only be opened whose techno-commercial bids are found to be responsive to the requirement of the bidding document.

#### 1.15.0 EARNEST MONEY DEPOSIT (EMD):

The bid must be accompanied with earnest money as mentioned in the **Bid Data Sheet** against the works to be deposited through online mode only in Assam e-tender portal. The EMD should be submitted along with Techno-Commercial bid. The earnest money will be released to the unsuccessful bidders on finalization of the tenders. The EMD to the successful bidder will be released on submission of Security Deposit after execution of the contract agreement.

#### 1.16.0 PRICE BASIS:

Cost quoted by the bidder shall be inclusive of all scope of work as specified in this bidding document including any related services that is implicit to carry out the work successfully. Price will be firm and no price variation will be allowed within the completion period given in the work order.

#### 1.17.0 DEVIATIONS, RESERVATIONS, AND OMISSIONS:

During the evaluation of bids, the following definitions apply:

- a) "Deviation" is a departure from the requirements specified in the Bidding Document;
- b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and
- c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.

#### 1.18.0 PRELIMINARY EXAMINATION OF TECHNICAL BIDS:

The Purchaser shall examine the Techno-commercial Bid to confirm that all documents and technical documentation requested in this bidding document have been provided, and to determine the completeness of each document submitted. If any of these documents or information is missing, **the Bid may be rejected**. The Purchaser shall confirm that the following documents and information have been provided in the Technical Bid. If any of these documents or information is missing, the offer **shall be rejected**.

- a) **Letter of Technical Bid;**
- b) **Written confirmation of authorization to commit the Bidder (i.e., Notarized Power of Attorney)**
- c) **Notarized JV agreement, if bidder is a JV. However, the bidder is required to submit registered JV agreement once the contract is awarded to them.**

**Bidder should submit hard copies of the documents mentioned above in (a), (b) and (c) in a physical envelope prior to deadline for technical bid submission. Techno-commercial bids shall be summarily rejected if these four documents are not submitted in hard copy deadline for technical bid submission.**

#### 1.19.0 RESPONSIVENESS OF TECHNO-COMMERCIAL BID:

The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself. A substantially responsive Techno-commercial Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that,

- a) If accepted, would:
  - (i). Affect in any substantial way the scope, quality, or performance of the plant and services specified in the Contract; or
  - (ii). Limit in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the proposed Contract; or
- b) If rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids.

The Purchaser shall examine the Techno-commercial Proposal, to confirm that the requirement of the bidding document have been met without any material deviation or reservation.

If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission.

#### 1.20.0 EVALUATION OF PRICE BIDS:

The Purchaser shall use the criteria and methodologies listed in this Clause. No other evaluation criteria or methodologies shall be used.

To evaluate a Price Bid, the Purchaser shall consider the following:

- a) The bid price excluding taxes as quoted in the Price Schedules;
- b) Price adjustment for correction of arithmetical errors.
- c) The following methodology will be practiced for identification and treatment of the Abnormally Low Bids (ALB) in this tender process of AEGCL:

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- i. Absolute Approach is to be considered when there is fewer than five substantially responsive bidders and if the bid price is 20% or more below AEGCL's cost estimate then AEGCL's tender evaluation committee should clarify the Bid price with the bidder to determine whether the Bid is Abnormally low.
  - ii. Relative approach is to be considered when there are at least 5(five) nos. of substantially responsive bids and the lowest bid price is 20% or more below AEGCL's cost estimate. In this approach, first the Average bid price is determined and then by deducting the standard deviation from the Average bid price, potentially ALB may be determined.
- d)** In case of an ALB, the tender evaluation committee/appropriate authority of the respective tenders shall undertake the following three stage review process which is as below:
- i. To identify ALB as per the steps mentioned in SI no. 1.20.a.(i) and 1.20.b.(ii) Whichever is applicable.
  - ii. To seek and analyze 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.
  - iv. On acceptance of the bid, whether Additional Performance Security is to imposed on the bidder supplemented by adequate justification.
- e)** In case of acceptance of ALB with Additional Performance Security:
- I. If any abnormally low bid is accepted under point 1.20.d.(iii) 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.

**1.21.0 AWARD CRITERIA:**

Purchaser shall in general award the contract to the lowest substantially responsive bidder. However, the purchaser reserves the right to not award contract to the lowest substantially responsive bidder without thereby incurring any liability to Bidders.

**1.22.0 PURCHASER'S RIGHT TO ACCEPT ANY BID, AND TO REJECT ANY OR ALL BIDS:**

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to Bidders. In case of annulment, all bids submitted and specifically, bid securities, shall be promptly returned to the Bidders.

**1.23.0 NOTIFICATION OF AWARD:**

Prior to the expiration of the period of bid validity, the Purchaser shall notify the successful Bidder, in writing, that its bid has been partially or fully accepted quoting acceptance of the bid. The notification letter (hereinafter called the "Notification of Award") shall specify the sum that the Purchaser will pay the Contractor (hereinafter called "Contract Price") in consideration of the execution and completion of the services. Until a formal contract is prepared and executed, the notification of award shall constitute a binding Contract.

**1.24.0 PERFORMANCE SECURITY:**

**Within 15 (five) days** of receipt of the Notification of Award from AEGCL, the successful bidder shall furnish to AEGCL a performance security in an amount of **10 (Ten) percent** of the Contract Price in accordance with the Conditions of Contract. The form of performance security provided in Section 3 of the bidding documents may be used or some other form acceptable to AEGCL. The performance guarantee BG shall be valid through 60 days beyond the warranty period.

**1.25.0 SIGNING OF CONTRACT AGREEMENT:**

Within **15 (Fifteen) days** of receipt of the Notification of Award, the successful Bidder shall be required to sign the Contract Agreement with AEGCL using for that purpose, the contract form provided with this bidding document failing which AEGCL at its discretion may cancel the award.

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**Annexure to SECTION 1  
BID DATA SHEET**

<b>Name of Work</b>	Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115
<b>Location of Work</b>	132KV Nazira-Teok Transmission Line
<b>NIT No.</b>	AEGCL/MD/ CGM(UAR)/132KV NZR-Teok/Insulators/2026/05 Dated:30/05//2026
<b>Bid Identification No.</b>	AEGCL/MD/CGM(UAR)/132KV NZR-Teok/Insulators/2026/BID
<b>Estimate (In Indian Rupees)</b>	<b>69,13,797.00</b> (Rupees Sixty-Nine Lakh Thirteen Thousand Seven Hundred and Ninety-Seven) Only including GST
<b>Earnest Money Deposit (EMD)</b>	Rs. <b>1,40,000.00</b> (Rupees One Lakh Forty Thousand) Only
<b>Purchaser's Address for correspondence</b>	<b>The Chief General Manager(O&amp;M), UAR AEGCL 1<sup>st</sup> Floor, Bijulee Bhawan, Paltanbazar Guwahati (Assam) 781001</b>  Telephone: +91 361 2739520 Facsimile number: +91 361 2739513 Electronic mail address: <a href="mailto:cgmom.uar@aeqcl.co.in">cgmom.uar@aeqcl.co.in</a>
<b>Pre-bid date</b>	Shall be notified, if any, in due course.
<b>Bid submission mode</b>	E-tenders shall be accepted through online portal <a href="https://assamtenders.gov.in">https://assamtenders.gov.in</a> only)
<b>Address for bid opening</b>	<b>The Chief General Manager(O&amp;M), UAR, AEGCL Floor/Room number: First Floor Street Address: Bijulee Bhawan, Paltanbazar City: Guwahati (Assam) PIN Code: 781001 Country: India</b>
<b>Key dates</b>	<b>Tender publishing date: 12:00 Hrs. 02.06.2026 Tender submission start date: 12:00 Hrs. 11.06.2026 Tender clarification end date: 12:00 Hrs. 11.06.2026 Tender submission end date and time: 12:00 Hrs. 22.06.2026 Techno-commercial bid opening date: 14:00 Hrs. 23.06.2026</b>

**SECTION -2 BIDDING FORMS**

(This Section contains the forms which are to be completed by the Bidder and submitted as part of his Bid)

**Form – 1: Document checklist**

SL. No.	Document to be submitted	Submitted (Yes/No)	Name of uploaded pdf
1.	Letter of Technical Bid (Form-2)		
2.	JV agreement/Deed of consortium( <b>applicable only if bidder is participating as a JV/consortium</b> )		
3.	Notarized Power of attorney for the person signing the tender		
4.	EMD		
5.	Manufacturer's authorization		
6.	Bidders company/firm registration certificate/certificate of incorporation		
7.	GST registration		
8.	Electrical license for working on 132 KV (or above)		
9.	Filled up Form ELI-1		
10.	Filled up Form LIT		
11.	Filled up Form FIN-1		
12.	Filled up Form FIN-2		
13.	Filled up Form FIN-3		
14.	Filled up Form FIN-4		
15.	Audited Balance sheet for last three years		
16.	Bank solvency certificate/other supporting document		
17.	Filled up Form EXP-1		
18.	Order/Contract copies establishing past experience		
19.	Completion certificate of work executed		
20.	Type test reports/Undertaking for insulator and hardware fittings		
21.	Completion schedule bar chart		
22.	Additional documents if any		

**Note:** Bidders are requested to submit all required documents in e-tender portal and **physical copies of i) Letter of technical bid, ii) Power of Attorney(notarized) for bid signatory to Tender inviting authority and iii)JV agreement, if bidder is a JV.**

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(In bidders letterhead)

**Form-2**  
**Letter of technical bid**

Date:

To

The Chief General Manager (O&M), UAR  
AEGCL, 1<sup>st</sup> Floor, Bijulee Bhawan,  
Paltan Bazar, Guwahati-01

Bid Identification No: **AEGL/MD/CGM(UAR)/132KV NZR-Teok/Insulators/2026/BID**

Sir,

I/We the undersigned, declare that, we, [insert name of the bidder] having registered office at [insert address of the registered office] having experience in construction/stringing of EHV transmission line, have read the bid document and do not have any reservation to any of the clause therein. We offer to execute the work of:

**“Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115”**

in conformity with the bid specification. Our Bid shall be valid for a period of **180(One Hundred Eighty)** days from the date fixed for the bid submission deadline and it shall remain binding upon us at any time before the expiration of that period.

Common Seal and Signature of the authorized person:

Name:

Designation:

**Form – 3**

**Format for Bank Guarantee (Earnest money deposit)  
(EMD to be paid in online mode only)**

**Form 4**  
**Manufacturer's Authorization**  
**(To be submitted in Manufacturer's Letterhead)**

**Bid No – AEGCL/MD/CGM(UAR)/132KV NZR-Teok/Insulators/2026/BID**

To

The Chief General Manager (O&M), UAR  
AEGCL, 1<sup>st</sup> Floor, Bijulee Bhawan,  
Paltan Bazar, Guwahati-01

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

1. \_\_\_\_\_
2. \_\_\_\_\_

We hereby extend our full guarantee and warranty in accordance with **Clause 5.11.0** of the Special Conditions of Contract, for the above specified Goods supporting the Supply of specified Goods and fulfilling the Related Services by the Bidder against this Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations.

Further, we also hereby declare that we and *[insert: name of the Bidder]* have entered into a formal relationship in which, during the duration of the Contract (**including related services and warranty / defects liability**) we, the Manufacturer or Producer, will make our technical and engineering staff fully available to the technical and engineering staff of the successful Bidder to assist that Bidder, on a reasonable and best effort basis, in the performance of all its obligations to the Purchaser under the Contract.

For and on behalf of the Manufacturer

Common Seal and Signature of the authorised person:

Name:

Designation:

**NOTE:**

This MA should be signed by a person having either of the following-

- 1) Valid Power of attorney
- 2) Authorised by Managing Director
- 3) Member of Board of Directors

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**Form-ELI-1**  
**Bidder's information Sheet**

Sl. No.	Particulars	Bidders response
1	Bidder's name and registered address	
2	Bidder's authorized representative, designation and contacts	
3	GST registration no.	
4	Bid validity	180(One Hundred Eighty) Days

(Signature and common seal)

Name:

Designation:

Date:

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**Form – LIT**  
**Pending Litigation**

<b>Year</b>	<b>Matter in Dispute</b>	<b>Value of Pending Claim in Rupees</b>	<b>Value of Pending Claim as a Percentage of Net Worth</b>

(Signature and common seal)

Name:

Designation:

Date:

**Form FIN – 1**  
**Financial Situation**

**Information from Balance Sheet**

<b>Financial Data for Previous 3 Years [Rupees]</b>	<b>Year 1 [Mention Financial Year]</b>	<b>Year 2 [Mention Financial Year]</b>	<b>Year 3 [Mention Financial Year]</b>
<b>Total Assets</b>			
<b>Total Liabilities</b>			
<b>Net Worth</b>			
<b>Current Assets</b>			
<b>Current Liabilities</b>			

**Information from Income Statement**

<b>Total Revenues</b>			
<b>Profits Before Taxes</b>			
<b>Profits After Taxes</b>			

Note: To be supported by audited financial documents

(Signature and common seal)

Name:

Designation:

Date:

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**Form FIN – 2**  
**Average Annual Turnover**

<b>Annual Turnover Data for the Last 3 Years</b>	
<b>Year</b>	<b>Amount (Rupees)</b>
<b>Average Annual Turnover</b>	

The information supplied should be the Annual Turnover of the Bidder in terms of the amounts billed to clients for each year for contracts in progress or completed.

(Signature and common seal)

Name:

Designation:

Date:

**Form FIN – 3**  
**Financial Resources**

Specify proposed sources of financing, such as liquid assets, unencumbered real assets, lines of credit, and other financial means, net of current commitments, available to meet the total cash flow demands of the subject contract or contracts with necessary supporting documents.

<b>Financial Resources</b>		
<b>No.</b>	<b>Source of financing</b>	<b>Amount (Rupees)</b>
1		
2		
3		

(Signature and common seal)

Name:

Designation:

Date:

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**Form FIN- 4**

**Current Contract Commitments**

Bidders should provide information on their current commitments on all contracts that have been awarded, or for which a letter of intent or acceptance has been received, or for contracts approaching completion, but for which an unqualified, full completion certificate has yet to be issued.

<b>No.</b>	<b>Contract No., Customer and name of work</b>	<b>Contract value(Rs.)</b>	<b>Estimated Completion Date</b>	<b>Value of Outstanding Work (Rs.)</b>
1				
2				
3				
4				
5				

(Signature and common seal)

Name:

Designation:

Date:

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**Form – EXP-1**  
**EXPERIENCE**

Each Bidder must fill in this form

<b>Sl. No.</b>	<b>Customer name</b>	<b>Contract No. and date</b>	<b>Work order value</b>	<b>Brief description of work</b>	<b>Completion date</b>

Note: Order/contract copies are to be submitted as supporting document. Performance/completion certificate to be submitted wherever applicable. Performance / Completion certificate of recently completed / commissioned works will also be considered. Performance certificate from competent authority showing satisfactory performance for a period not less than one year is to be submitted.

(Signature and common seal)

Name:

Designation:

Date:

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
Transmission line from Nazira GSS gantry to Loc. No. 115

<b>PRICE SCHEDULE-1(A)</b>						
Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115 (Supply schedule)						
<b>(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only )</b>						
NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1	Supply of Disc Insulator strings and associated hardware fittings					
1.1	10 Normal Disc Single Tension String (90KN each disc)	330.00	Sets		0.00	INR Zero Only
<b>Total in Figures</b>					<b>0.00</b>	INR Zero Only
Quoted Rate in Words	<b>INR Zero Only</b>					

<b>PRICE SCHEDULE-1(B)</b>						
Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115 (F&I schedule)						
<b>(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only )</b>						
NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1	Supply of Disc Insulator strings and associated hardware fittings					

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
Transmission line from Nazira GSS gantry to Loc. No. 115

1.1	10 Normal Disc Single Tension String (90KN each disc)	330.00	Sets		0.00	INR Zero Only
<b>Total in Figures</b>					<b>0.00</b>	INR Zero Only
<b>Quoted Rate in Words</b>	<b>INR Zero Only</b>					

<b>PRICE SCHEDULE-1(C)</b>						
Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115						
(Erection schedule)						
(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only )						
NUMBE R #	TEXT #	NUMBE R #	TEXT #	NUMBE R #	NUMBE R #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder in Rs. P	TOTAL AMOUNT Without Taxes in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1	Replacement of disc insulator strings (Tension) for 132KV Nazira-Teok SC Transmission Line with all associated works	330.00	Sets		0.00	INR Zero Only
2	Head loading of tower material for marshy and paddy field areas (beyond 10 meters) Weight of 1 set Porcelain Insulator string= 40 Kgs (approx.) Head loading distance per string =15m (approx.) No. of Insulator strings= 330 Nos. Total Quantity = 40x15x30 =198000 Kg-m i.e., 198 MT-m	198	MT-m		0.00	INR Zero Only
<b>Total in Figures</b>					<b>0.00</b>	INR Zero Only
<b>Quoted Rate in Words</b>	<b>INR Zero Only</b>					

**Note:**

- 1) Price quoted should be without GST.
- 2) The price schedules presented here is for reference only. Bidders must submit the price using the price schedule available in e-tendering portal. **These are not to be submitted in the techno-commercial envelope.**
- 3) If any item is not specifically mentioned in the price schedule but required to complete the job successfully, same shall be deemed to be included in any of the items of the price schedule.

**Section - 3**  
**Purchaser's Requirements**

**3.1.0 SCOPE**

The brief description of scope covered under this Bidding Document is furnished below. Bidders must read the bid document particularly the bid specifications thoroughly to understand the scope of work.

- a) Design and supply of all equipment/materials as per BoQ and bid specification.
- b) Replacement of disc insulators as per BoQ and bid specification.
- c) Storage of dismantled materials and accessories to AEGCL store including transportation to store and material handling.
- d) Freight and Transit Insurance, storage at site and site insurance of all material at site shall be in the scope of the contractor.
- e) Any permits required for supply of materials shall be arranged by the contractor. However, AEGCL shall assist the contractor in arranging permits if any to the extent possible.

**3.2.0 SERVICE CONDITIONS**

Bidder should note the following climatic and other conditions prevailing in the location of work:

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

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## 4.1.0 Chapter 1: SPECIFICATION FOR DESIGN AND FABRICATION OF SUBSTATION STEEL STRUCTURES

### 4.1.1 SCOPE

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

### 4.1.2 MATERIALS

#### 4.1.2.1 Structural Steel

The structures shall be of structural steel conforming to any of the grade, as appropriate, of IS 2062 (latest edition) Steel conforming IS 8500 may also be used.

Medium and high strength structural steels with known properties conforming to any other national or international standards may also be used.

#### 4.1.2.2 Bolts

Bolts used shall conform to IS12427 or bolts of property class 4.6 conforming to IS 6639 may also be used.

High strength bolts, if used (only with steel conforming to IS 8500) shall conform to property class 8.8 of IS 3757.

Foundation Bolts shall conform to IS 5624.

Step bolts shall conform to IS 10238

#### 4.1.2.3 Nuts

Nuts shall conform to IS 1363 (Part 3). The mechanical properties shall conform to property class 4 or 5 as the case may be as specified in IS 1367 (Part 6) except that the proof stress for nuts of property class 5 shall be as given in IS 12427.

Nuts to be used with high strength bolts shall conform to IS 6623.

#### 4.1.2.4 Washers

Washers shall conform to IS 2016. Heavy washers shall conform to IS 6610. Spring washers shall conform to type B of IS 3663

Washers to be used with high strength bolts and nuts shall conform to IS 6649.

#### 4.1.2.5 Galvanisation

Structural members, plain and heavy washers shall be galvanized in accordance with the provisions of IS 4759.

Spring washers shall be hot dip galvanized as per service grade 4 of IS 4759 or IS 1537.

#### 4.1.2.6 Other Materials

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

### 4.1.3 DESIGN PARAMETERS

4.1.3.1 Switchyard structures such as columns, beams and equipment mounting structures shall be designed as per actual site requirement. The drawings are to be submitted for approval prior to supply/execution.

**Note: Structures with earth peak shall assume to have four earth wires for design purpose in normal condition.**

#### 4.1.3.2 Spans

Following Spans shall be considered in design of all structures as applicable: -

a). Line gantries (structures to terminate lines):

(i) For 33 KV Switchyard: □50 Meter, wind & weight span.

b). All other Structures

(i) For 33 KV Switchyard: □20 Meter, wind & weight span.

### 4.1.4 Deviation Angle

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
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The design of line gantries shall only be checked for a maximum deviation angle of 300 from normal at center of gantries to Dead End Tower.

#### 4.1.5 Conductors and Shield Wires

a) The Conductor shall conform to IS: 398 (latest edition) except where otherwise specified herein.

The details of the ACSR Moose, ACSR Zebra and ACSR Panther conductors are tabulated below:

	DESCRIPTION	ACSR 'MOOSE'	ACSR 'ZEBRA'	ACSR 'PANTHER'
1	Code name	MOOSE	ZEBRA	PANTHER
2	Number of strands & size	Al: 54/ 3.53 mm	Al: 54/ 3.18 mm	Al: 30/ 3.00 mm
		St: 7/ 3.53 mm	St: 7/ 3.18 mm	St: 7/ 3.00 mm
3	Overall diameter	35.05 MM	28.62 mm	21.00 mm
4	Breaking load	136.38 KN	130.32 kN	130.32 kN
5	Weight of conductor	2004 Kg/KM	1621 kg / km	974 kg / km
6	Co-efficient Of Linear Expansion	23x10-6 /OC	19.35x10-6 /OC	19.35x10-6 /OC
7	Number of strand			
	Steel centre	1	1	1
	1st Steel Layer	6	6	6
	1st Aluminium Layer	12	12	12
	2nd Aluminium Layer	18	18	18
	3rd Aluminium Layer	24	24	-
8	Sectional area of Aluminium	528.50 mm <sup>2</sup>	428.90 mm <sup>2</sup>	212.10 mm <sup>2</sup>
9	Total sectional area	597.00 mm <sup>2</sup>	484.50 mm <sup>2</sup>	261.50 mm <sup>2</sup>
10	Calculated d.c. resistance at 20 C	0.05552 ohm/km	0.06869 ohm/km	0.1400 ohm/km
11	Ultimate tensile strength	161.2 kN	130.32 kN	89.67

b) For protection against direct lightning G.I. wires of size 7/3.66 mm conforming to IS 2241 shall be considered for all switch yards.

#### 4.1.6 DESIGN DRAWINGS

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

4.1.6.2 The structural drawings, Bill of materials and shop fabrication drawings for all the structures shall be submitted in four copies and will be finally approved by the Purchaser.

The fabrication shall be taken up from the approved shop drawings.

The overall responsibility of fabricating structure members correctly lies with the Supplier only and the Supplier shall ensure that all the members can be fitted while erecting without any undue strain on them.

#### 4.1.7 ACCESSORIES

##### 4.1.7.1 Step Bolts

Each column/tower shall be provided with step bolts conforming to IS: 10238 of not less than 16mm diameter and 175mm long spaced not more than 450mm apart and extending from 2.5 meters above the ground level to the top. Each step bolt shall be provided with two nuts on one end to fasten the bolt securely to the tower and button head at the other end to prevent the feet from slipping away. The step bolts shall be capable of withstanding a vertical load not less than 1.5 KN.

##### 4.1.7.2 Insulator Strings and Conductor Clamps Attachments

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
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- a) Single suspension and tension insulator string assemblies shall be used for stringing busbars. For the attachment of Suspension Insulator string, a suitable strain plate of sufficient thickness for transferring the load to the tower body shall be provided. To achieve requisite clearances, if the design calls for providing extra D-shackles, link plate etc. before connecting the insulator string the same shall be supplied by the Supplier.
- b) At tension points strain plates of suitable dimensions placed on the beams, shall be provided for taking the hooks or D-shackles of the tension insulator strings. To achieve requisite clearances, if the design calls for providing extra D-shackles, link plate etc. before connecting the insulator string the same shall be supplied by the Supplier.

#### 4.1.7.3 Earth wire Clamps Attachment

##### i. Suspension Clamp

The detailed drawing shall be submitted by the Supplier for Purchaser's approval. The Supplier shall also supply U- bolts, D-shackles wherever required.

##### a) Tension Clamps

Earth-wire peaks of tension towers shall be provided with suitable plates to accommodate the shackle of tension clamps. The Supplier shall also supply the U-bolts wherever required and take Purchaser's approval for details of the attachments before the mass fabrication.

#### 4.1.8 FABRICATION

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

- a. Except where hereinafter modified, details of fabrication shall conform to IS: 802 (Part-II) or the relevant international standards.
- b. The tower structures shall be accurately fabricated to connect together easily at site without any undue strain on the bolts.
- c. No angle member shall have the two leg flanges brought together by closing the angle.
- d. The diameter of the hole shall be equal to the diameter of bolt plus 1.5mm.
- e. The structure shall be designed so that all parts shall be accessible for inspection and cleaning. Drain holes shall be provided at all points where pockets of depression are likely to hold water.
- f. All identical parts shall be made strictly inter-changeable. All steel sections before any work are done on them shall be carefully levelled, straightened and made true to detailed drawings by methods which will not injure the materials so that when assembled, the adjacent matching surfaces are in close contact throughout. No rough edges shall be permitted in the entire structure.
- g. Minimum Thickness of Tower Members shall be as follows: -

ITEM	Minimum thickness (in mm)
Leg members & main chords of beams in compression	5
Other members	4

#### 4.1.9 Drilling and Punching

- 4.1.9.1 Before any cutting work is started, all steel sections shall be carefully strengthened and trued by pressure and not by hammering. They shall again be trued after being punched and drilled.
- 4.1.9.2 Holes for bolts shall be drilled or punched with a jig but drilled holes shall be preferred. The punching may be adopted for thickness up to 16mm. Tolerances regarding punch holes are as follows:

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
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- a) Holes must be perfectly circular and no tolerances in this respect are permissible.
- b) The maximum allowable difference in diameter of the holes on the two sides of plates or angle is 0.8mm. I.e. the allowable taper in a punched holes should not exceed 0.8 mm on diameter.
- c) Holes must be square with the plates or angles and have their walls parallel.

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

#### **4.1.10 Erection mark**

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

#### **4.1.11 GALVANIZING AND PAINTING**

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

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

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

#### **4.1.12 EARTHING**

4.1.12.1 To keep provision in the structures for earthing, holes shall be drilled on two diagonal opposite legs of the towers/columns/mounting structures. The holes shall be suitable for bolting 65 mm X 12 mm GI strips and shall be such that the lower hole is about 350 mm above the ground level, clear of the concrete muffing, for connecting the earthing strip.

#### **4.1.13 TEST AND TEST CERTIFICATE**

4.1.13.1 Each consignment ready for transportation shall be offered to ASEB for inspection before dispatch giving a minimum time of not less than 30 days. Samples of fabricated structure materials shall be subjected to following tests: -

- a) Steel: The structural steel shall conform to IS 226 and IS 8500, BS 4360-1068 or ISO / R 630 other such authoritative international standards. Manufacturer's test certificate shall be submitted for all used steel.
- b) Galvanising: The galvanising shall be as per IS 2633 or BS 729 other such authoritative international standards. Zinc coating over the galvanised surfaces shall not be less than 610 gm per square meter.
- c) Bolts and nuts: Manufacturer's test certificate as per standard practice shall be submitted.

#### **4.1.14 TEST AT SUPPLIER'S PREMISES**

4.1.14.1 The Supplier shall fabricate one specimen structure of each type as soon as possible after placement of order and before starting the bulk fabrication of the structures ordered. It shall be assembled on a foundation as nearly similar as practicable to site and tested with suitable test loads as per specified broken wire condition, multiplied by the corresponding factor of safety to ensure that the design and fabrication complies with the requirements. Each structure shall be capable of withstanding the above-mentioned tests without any injury or any permanent deflection

Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C  
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at any part. If any member is found to be weak or damaged the design should be suitably modified and the tower re-tested.

4.1.14.2 After the first lot of the structures manufactured, the members forming one structure of each type shall be selected at random from the lots of similar member and assembled in exactly the same manner as to be done at site. The structure then shall be set on foundation as nearly similar as practicable to site and tested with equivalent test load for which the structure has been designed.

4.1.14.3 No structure or any member thereof, which failed the test shall be supplied.

**TECHNICAL SPECIFICATION OF DISC INSULATORS FOR SUBSTATION AND TRANSMISSION  
LINE WORKS**

**4.2.1 SCOPE.**

4.2.1.1 This specification provides for design, manufacture, engineering, inspection and testing before dispatch, packing and delivery at site, testing and commissioning for manufacturers of disc Insulators as per technical requirements furnished in this specification.

These insulators are to be used in suspension and tension insulator strings for the suspension and anchoring of the conductors on EHV transmission line towers.

4.2.1.2 Following are the list of documents constituting this package.

(i) Technical specification.

(ii) Technical data sheet.

(iii) Drawings of insulators

4.2.1.3 All the above volumes along with amendments there of shall be read and interpreted together. However, in case of a contradiction between the "Technical Specification" and any other volume, the provisions of this volume will prevail.

4.2.1.4 The insulators shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of offer and purchaser shall have the power to reject any work or material which in his judgment, is not in full accordance therewith.

**4.2.2 STANDARDS:**

4.2.2.1 Except as modified in this specification, the disc/porcelain long rod insulators shall conform to the following Indian Standards, which also includes latest revisions and amendments if any. Equivalent International and Internally recognized standards to which some of these standards generally correspond are also listed below.

Sl. No.	Indian Standard	Title.	International Standard.
1.	IS: 206	Method for Chemical Analysis of Slab Zinc.	
2.	IS: 209	Specification for Zinc.	BS: 3436
3.	IS: 731	Porcelain insulators for overhead power lines with a normal voltage greater than 1000V	BS: 137(I&II); IEC 60274 IEC 60383
4.	IS: 2071 Part-(I)	Method of High Voltage Testing.	
	Part-(II)		
	Part-(III)		
5.	IS: 2121 (Part-I)	Specification of Conductors and Earth wire Accessories for Overhead Power lines. Armour Rods, Binding wires and tapes for conductor.	
6.	IS: 2486	Specification for Insulator fittings for overhead power lines with a nominal voltage greater than 1000V.	
	Part – I	General Requirement and Tests.	BS: 3288
	Part – II	Dimensional Requirements.	IEC: 60120
	Part – III	Locking devices.	IEC: 60372
7.	IS: 2629	Recommended practice for Hot Dip Galvanisation for iron and steel.	

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8.	IS: 2633	Testing for Uniformity of Coating of Zinc coated articles.	
9.	IS: 3138	Hexagonal Bolts & Nuts.	ISO/R 947 & ISO/R 272
10.	IS: 3188	Dimensions for Disc Insulators.	IEC: 60305
11.	IS: 4218	Metric Screw Threads	ISO/R 68-1969 R 26-1963, R 262-1969 & R965-1969
12.	IS: 6745	Determination of weight of zinc coating on zinc coated iron and steel articles.	
13.	IS: 8263	Methods of RIV Test of HV insulators.	IEC 60437 NEMA Publication No.107/1964 CISPR
14.	IS: 8269	Methods for switching impulse Test on HV insulators.	IEC: 60506
15.		Thermal mechanical performance test and mechanical performance test on string insulator units.	IEC: 60575
16	IEC	Ceramic Long Rod Insulators	IEC: 60433

4.2.2.2 The standards mentioned above are available from

Reference.	Name & Address:
BS	British Standards, British Standards Institution, 101, Pentonville Road, N- 19 ND,U.K
IEC / CISPR	International Electro technical commission Electro Technique International. 1, Rue de verembe Geneva SWITZERLAND.
IS	Bureau of Indian Standards, Manak Bhavan, 9 Bahadurshah Zafar Marg, New Delhi-110001,
ISO	International Organisation for Standardization. Danish Board of Standardization Dansk Standardizing Sraat Aurehoegvej-12 DK-2900 Hellestrup DENMARK.

**4.2.3 PRINCIPAL PARAMETERS.**

**4.2.3.1 DETAILS OF DISC INSULATORS:**

4.3.3.1 The Insulator strings shall consist of standard discs for use in three phases. 50 Hz effectively earthed 33/132/220 KV transmission system of AEGCL in a moderately polluted atmosphere. The discs shall be cap and pin, ball and socket type. Radio interference data and have characteristics as shown in Table-I and all ferrous parts shall be hot dip galvanized as per the latest edition of IS 2629. The zinc to be used for making sleeves shall be 99.95 % pure.

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4.2.3.2 The size of disc insulator, minimum creepage distance the number to be used in different type of strings, their electromechanical strength and mechanical strength of insulator string along with hardware shall be as follows:

**PRINCIPAL PARAMETERS OF THE DISC INSULATORS:-**

Sl. No.	Type of String.	Size of disc. Insulator (mm)	Minimum creepage distance of each disc (mm),	No. of standard discs 132 KV /220 KV/400kV	Electro-mechanical strength of insulator string fittings (KN)
1.	Single suspension	255 x 145	320	1x9/1x14 /-	70 KN/90 KN Normal Disc Insulator
2.	Double suspension.	-do-	-do-	2x9/2x14 /-	70 KN/90 KN Normal Disc Insulator
3.	Single Tension	305 X 170	475	1x10/1x15/1x25	90 KN Normal Disc insulator
4.	Double Tension	305 X 170	475	2x10/2x15/2x25	90 KN Normal Disc insulator

**4.2.4.0 SPECIFICATION DRAWINGS:**

4.2.4.1: The Specification in respect of the disc insulators are described, the specification is for information and guidance of the bidder only. The drawings to be furnished by the supplier shall be as per his own design and manufacture and in line with the specification.

**4.2.4.2 Porcelain glaze:**

The finished porcelain shall be glazed in brown colour. The glaze shall cover all exposed parts of the insulator and shall have a good lusture, smooth surface and good performance under the extreme weather conditions of a tropical climate. It shall not crack or chip by ageing under the normal service conditions. The glaze shall have the same coefficient of expansion as of the porcelain body throughout the working temperature range.

**4.2.5 METAL PARTS:**

**4.2.5.1 Cap and Ball Pins:**

Ball pins shall be made with drop forged steel caps with malleable cast iron. They shall be in one single piece and duly hot dip galvanized. They shall not contain parts or pieces joined together welded, shrink fitted or by any other process from more than one piece of materials. The pins shall be of high tensile steel, drop forged and heat-treated. The caps shall be cast with good quality black heart malleable cast iron and annealed. Galvanizing shall be by the hot dip process with a heavy coating of zinc of very high purity. The bidder shall specify the grade composition and mechanical properties of steel used for caps and pins. The cap and pin shall be of such design that it will not yield or distort under the specified mechanical load in such a manner as to change the relative spacing of the insulators or add other stresses to the shells. The insulator caps shall be of the socket type provided with nonferrous metal or stainless-steel cotter pins and shall provide positive locking of the coupling.

**4.2.5.2 Security Clips:**

The security clips shall be made of phosphor bronze or of stainless steel.

**4.2.6 FILLER MATERIAL:**

Cement to be used, as a filler material be quick setting, fast curing Portland cement. It shall not cause fracture by expansion or loosening by contraction. Cement shall not react chemically with metal parts in contact with it and its thickness shall be as small and as uniform as possible.

**4.2.7 MATERIALS DESIGN AND WORKMANSHIP:**

#### **4.2.7.1 GENERAL:**

(I) All raw materials to be used in the manufacture of these insulators shall be subject to strict raw material quality control and to stage testing/ quality control during manufacturing stage to ensure the quality of the final end product. Manufacturing shall conform to the best engineering practices adopted in the field of extra high voltage transmission. Bidders shall therefore offer insulators as are guaranteed by them for satisfactory performance on Transmission lines.

(II) The design, manufacturing process and material control at various stages be such as to give maximum working load, highest mobility, best resistance to corrosion, good finish elimination of sharp edges and corners to limit corona and radio interference voltages.

#### **4.2.7.2 INSULATOR SHELL:**

The design of the insulator shells shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration. Shells with cracks shall be eliminated by temperature cycle test followed by mallet test. Shells shall be dried under controlled conditions of humidity and temperature.

#### **4.2.7.3 METAL PARTS:**

i) The pin and cap shall be designed to transmit the mechanical stress to the shell by compression and develop uniform mechanical strength in the insulator. The cap shall be circular with the inner and outer surfaces concentric and of such design that it will not yield or distort under loaded conditions. The head portion of the pinball shall be suitably designed so that when the insulator is under tension the stresses are uniformly distributed over the pinhole portion of the shell. The pinball shall move freely in the cap socket either during assembly of a string or during erection of a string or when a string is placed in position.

ii) Metal caps shall be free from cracks, seams, shrinks, air holes, blowholes and rough edges. All metal surfaces shall be perfectly smooth with no projecting part or irregularities, which may cause corona. All load bearing surfaces shall be smooth and uniform so as to distribute the loading stress uniformly. Pins shall not show any microscopically visible cracks, inclusions and voids.

#### **4.2.7.4 GALVANIZING:**

All ferrous parts, shall be hot dip galvanized in accordance with IS: 2629. The zinc to be used for galvanizing shall conform to grade Zn 99.95 as per IS: 209. The zinc coating shall be uniform, smoothly adherent, reasonably light, continuous and free from impurities such as flux, ash, rust stains, bulky white deposits and blisters. Before ball fittings are galvanized, all die flashing on the shank and on the bearing surface of the ball shall be carefully removed without reducing the designed dimensional requirements.

#### **4.2.7.5 CEMENTING:**

The insulator design shall. Be such that the insulating medium shall not directly engaged with hard metal. The surface of porcelain and coated with resilient paint to offset the effect of difference in thermal expansions of these materials. High quality Portland cement shall be used for cementing the porcelain to the cap & pin.

#### **4.2.7.6 SECURITY CLIPS (LOCKING DEVICES)**

The security clips to be used as locking device for ball and socket coupling shall be „R” shaped hump type to provide for positive locking of the coupling as per IS: 2486 (Part-IV). The legs of the security clips shall allow for spreading after installation to prevent complete withdrawal from the socket. The locking device shall resilient corrosion resistant and of sufficient mechanical strength. There shall be no possibility of the locking device to be displaced or be capable of rotation, which placed in position, and under no circumstances shall it allow separation of insulator units and fittings. „W” type security clips are also acceptable. The hole for the security clip shall be counter sunk and the clip shall be of such design that the eye of the clip may be engaged by a hot line clip puller to provide for disengagement under energized conditions. The force required for pulling the clip into its unlocked positions shall not be less than 50 N (5 kg.) or more than 500 N (50 kgs.).

#### **4.2.7.7 MARKING:**

Each insulator shall have the rated combined mechanical and electrical strength marked clearly on the porcelain surface. Each insulator shall also bear symbols identifying the manufacturer, month, and year of manufacture. Marking on porcelain shall be printed, not impressed, and shall be applied before firing

#### **4.2.7.8 BALL AND SOCKET DESIGNATION:**

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The dimensions of the ball and sockets for 70 and 90 KN insulator strings shall be of 16 mm and for 120 KN and 160 KN insulator strings shall be of 20 mm designation in accordance with the standard dimensions stated in IS: 2486 (Part-II).

**4.2.7.9-DIMENSIONAL TOLERANCE OF INSULATOR DISCS:**

It shall be ensured that the dimensions of the disc insulators are within the limits specified below:

Sl. No.	Diameter of Disc (mm)	Standard in Mm	Maximum	Minimum
1.	70 KN/90 KN & 120 KN	<b>255/255 &amp; 280</b>	As per IS	As per IS
2.	160 KN	305	As per IS	As per IS
(b)				
Sl. No.	Ball to Ball spacing Between Discs (mm)	Standard in Mm	Maximum	Minimum
1.	70 KN/90 KN/120 KN	<b>145</b>	As per IS	As per IS
2.	160 KN	170	As per IS	As per IS

NOTE: Tolerance as per relevant IS (Latest edition).

**(4.2.7.10) GUARANTEED TECHNICAL PARTICULARS FOR NORMAL DISC INSULATORS**

Sl. No.	DESCRIPTION	70 KN	90 KN	120KN	160 KN
1.	Manufacturer's name & address				
2	Type of Insulator	Ball & Socket	Ball & socket	Ball & socket	Ball & socket
3	Size of ball & socket	16B	16B	20	20
4	Dimensions				
(a)	Disc diameter	255	255	280	305
(b)	Unit spacing	145	145	145	170
(c)	Creepage distance of the single insulator-mm	320	320	430	475
5	Electro-mechanical strength of single insulator-kN	70	90	120	160
6	Materials of shell	Porcelain	Porcelain	Porcelain	Porcelain
7	<b>Electrical value</b>				
7.1	Power frequency Withstand Voltage Disc				
	(a) Dry-kV (rms)	75	75	85	90
	(b) Wet-kV (rms)	40	40	50	50
7.2	Power frequency Flashover Voltage Disc				
	(a) Dry-kV (rms)	80	80	90	95

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	(b) Wet-kV (rms)	45	45	55	55
7.3	Impulse Withstand Voltage Disc				
	1.2/50 micro second				
	(a) Positive – kV(Peak)	125	125	130	135
	(b) Negative – kV(Peak)	125	125	130	135
7.4	Impulse Flashover Voltage Disc				
	1.2/50 micro second				
	(a) Positive – kV(Peak)	135	135	140	145
	(b) Negative – kV(Peak)	130	130	135	140

**4.2.7.11 INTERCHANGEABILITY:**

The insulators inclusive of the ball and socket fittings shall be of standard design suitable for use with hardware fittings of any make conforming to relevant Indian Standards.

**4.2.7.12 CORONA AND RIV PERFORMANCE:**

All surfaces shall be even, smooth, without cuts, abrasions or projections. No part shall be subject to excessive localized pressure. The metal parts and porcelain shall not produce any noise-generating corona under all operating conditions

**4.2.7.13 SUITABILITY FOR LIVE LINE MAINTENANCE:**

The insulator shall be compatible for use with hot line or live line maintenance techniques so that usual hot line operation can be carried out with easy speed and safety.

**4.2.7.14 FREEDOM FROM DEFECTS:**

Insulators shall have none of the following defects:

- 1) Ball pin shake.
- 2) Cementing defects near the pin like small blow holes, small hair cracks lumps etc.
- 3) Sand fall defects on the surface of the insulator.

**4.2.8 INSULATOR STRINGS:**

**4.2.8.1 TYPE AND RATING:**

The insulator strings shall be formed with standard discs described in this specification for use on 3 phases 132/220 KV 50 Hz effectively earthed systems in an atmosphere with pollution level as indicated in project synopsis. Suspension insulator strings for use with suspension/tangent towers are to be fitted with discs 70/90 KN EMS rating while tension insulator strings for use with Anchor/ Tension towers are to be fitted with discs of 120 KN / 160 KN EMS level rating.

**4.2.8.2 STRING SIZE:**

The sizes of the disc insulator, the number to be used in different types of strings, their electro-mechanical strength and minimum nominal creep age distance shall be as given in clause 45.3.1.2.

**4.2.8.3 STRING CHARACTERISTICS**

4.2.8.3.1 The characteristics of the complete string shall be as follows:

Sl. No.	Description.	Suspension.		Tension.	
		132KV	220kV	132KV	220KV
I	Switching surge withstand voltage (dry& wet) KV Peak	-	-	-	-
II	Lighting impulse withstand voltage (dry) KV Peak.	650	1050	650	1050
III	Power frequency withstand voltage (wet) KV r.m.s.	275	460	275	460

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IV.	Corona extinction voltage level KV rms	-	176	-	176
V	Max. RIV for comp. Etc. strong including corona rings at 156 KV (rms). ... hours clamps etc. at 1.1. times maximum knee to ground voltage (micro volts).	-	500	-	500
VI.	Mechanical failing load for each string (kgf)	6500	11500	11500	15500
VII.	No deformation load for each string (kgf)	-	7705	-	10385
VIII	Max. voltage across any disc.	13%	13%	13%	13%

4.2.8.3.2 Insulator units after assembly shall be concentric and coaxial within limits as permitted by Indian Standards.

4.2.8.3.3 The strings design shall be such that when units are coupled together there shall be contact between the shell of one unit and metal of the adjacent unit.

**Section - 4**  
**General Conditions of Supply and Erection of AEGCL**

*This Section 'General Conditions of Supply and Erection of AEGCL' supplementary to Section -5 'Special Conditions of Contract' of this document and **can be downloaded from [www.aegcl.co.in](http://www.aegcl.co.in)**.  
Whenever there is a conflict, the provisions in SCC or the other Sections of this bid document shall prevail over those in the 'General Conditions of Supply and Erection of AEGCL'.*

**Section - 5**  
**Special Conditions of Contract**

**5.1.0 DEFINITION OF TERMS**

“Contract” means the Contract Agreement entered into between the Purchaser and the Contractor, together with the Contract Documents referred to therein; they shall constitute the Contract, and the term “the Contract” shall in all such documents be construed accordingly.

“Contract Documents” means the documents listed in Article 1.1 (Contract Document) of the Contract Agreement (including any amendments thereto).

“Contract Price” means the price payable to the Contractor as specified in the Agreement, subject to such additions and adjustments thereto or deductions therefrom, as may be made pursuant to the Contract.

“Day” means calendar day

“Year” means 365 days.

“Month” means calendar month.

“Party” means the “Purchaser” or the “Contractor”, as the context requires.

“Purchaser” means the Assam Electricity Grid Corporation Limited (in short AEGCL) and its assignees.

The “Contractor” shall mean the tenderer / bidder whose tender/ bid has been accepted by the “Purchaser” and shall include the bidder’s legal representatives, successors and assignees.

“Goods” means all of the commodities, raw material, machinery and equipment, and/or other materials that the Contractor is required to supply to the Purchaser under the Contract.

“Delivery” means the transfer of the Goods from the Contractor to the Purchaser in accordance with the terms and conditions set forth in the Contract.

“Completion” means the fulfilment of the Related Services by the Contractor in accordance with the terms and conditions set forth in the Contract.

“Related Services” means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Contractor under the Contract.

The “Specification” shall mean the “Purchaser’s Requirements”.

“Contractor” means the natural person, a company/firm, or a combination of these, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Contractor.

**5.2.0 CONTRACT DOCUMENTS**

- 5.2.1. Subject to Article 1.2 (Order of Precedence) of the Contract Agreement, all documents forming part of the Contract (and all parts thereof) are intended to be correlative, complementary and mutually explanatory. The Contract shall be read as a whole.

**5.3.0 LEGAL JURISDITCTION**

- 5.3.1. For any litigation arising out of the contract which cannot be resolve through mutual agreement or through Arbitration the Hon’ble Gauhati High Court will have sole jurisdiction of all settlement.

**5.4.0 LANGUAGE**

- 5.4.1. The ruling language of the Contract shall be English.

**5.5.0 SCOPE OF WORK**

- 5.5.1. The Goods and Related Services to be supplied shall be as specified in section 3- Purchaser’s requirement and quantity as stated in Schedule No. 1 of Section -2, Bidding Forms.

- 5.5.2. **Unless otherwise stipulated in expressly limited in the *Purchaser's Requirements*, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.**

#### **5.6.0 DELIVERY SCHEDULE**

- 5.6.1. Contract completion period shall be counted from contract commencement date. Completion of the work shall be within **7 (Seven) months** from Contract commencement.
- 5.6.2. The Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Article 3 of the Contract Agreement (Contract Forms) or within such extended time to which the Contractor shall be entitled under SCC **Clause 5.16.0** hereof.

#### **5.7.0 CONTRACT PRICE**

- 5.7.1. The Contract Price shall be as specified in **Article 2 (Contract Price)** of the Contract Agreement.
- 5.7.2. Unless an escalation clause is provided for in the **Article 2 (Contract Price)**, the Contract Price shall be a firm shall not subject to any alteration, except in the event of a Change in the scope or changes in applicable tax rates or as otherwise provided in the Contract.

#### **5.8.0 TERMS OF PAYMENT**

- 5.8.1. The contract price shall be paid as specified in subsequent sub-clauses, if not provided in Contract Forms, Section-6.

##### **A. Progressive payments for supply items including F&I within the country:**

1. Within 60 (sixty) days from the date of submission of the invoice against supply, not more than 60% (sixty percent) payment of the total supply invoice value would be made, on receipt and acceptance of materials in full and good conditions. However, GST amount on invoice would be paid 100% or as per Govt. Rules.
2. Maximum 10 (ten) Nos. of progressive supply invoice would be entertained.
3. Remaining 40% (forty percent) retention amount would be released subject to fulfilment of the following conditions –
  - (a) 50% of balance supply amount would be paid on completion of 50% of the total erection works of the project.
  - (b) Remaining 50% of the supply amount would be paid on completion of 100% erection, testing and commissioning activities of the project, which should be certified by the Project Manager.

##### **B. Progressive payments for erection works:**

1. Within 60 (sixty) days from the date of submission of invoice against foundation, erection & civil works, not more than 80% (eighty percent) of the total verified invoice would be made. However, GST amount on invoice would be paid 100% or as per Govt. Rules.
2. Maximum 8 (eight) Nos. of progressive erection invoice/ bill would be entertained during entire erection work.
3. The 1<sup>st</sup> progressive erection invoice/ bill would be entertained on completion of 30% of total erection cost of the project.
4. Maximum 6 (six) Nos. of additional progressive erection invoice/ bill would be entertained. Minimum value of each invoice should be 10% of the total ordered value for foundation, erection and civil work.
5. Remaining 20% of the erection value would be paid on successful completion of 100% erection, testing and commissioning activities of the project, which should be certified by the Project Manager.

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- 5.8.2. Documents required along with invoice: Following documents need to be submitted along with invoice – Payment of invoice would be entertained subject to submission of the following documents with the invoice –
- (a) Unconditional acceptance of the Letter of Award and signed Contract Agreement, by the contractor for supply.
  - (b) Detailed Supply Plan /Project Execution Plan/ PERT chart approved by AEGCL.
  - (c) Documentary evidence of dispatch (R/R or receipt of L/R)-(for Supply only.)
  - (d) Contractor's detailed invoice & packing list identifying contents of each shipment/supply. -(for Supply only.)
  - (e) Copy of certificate in respect of payments of State/ Central taxes, duties, levies, etc. have been made against supply of equipment/ materials through contractors/ sub-vendors under the contract, if applicable.
  - (f) Certified copy of Insurance Policy/ Insurance Certificate.
  - (g) Manufacturer's/ Contractor's Guarantee Certificate of Quality.
  - (h) Material Dispatch Clearance Certificate (MDCC)/ Dispatch Instructions (DI) for dispatch of materials from the manufacturer's works. MDCC/DI shall be issued by authorised Officer of the AEGCL. -(for Supply only.)
  - (i) Manufacturer's/ Supplier's copy of challan.-(for Supply only.)
  - (j) Copy of testing/ inspection of equipment/ material clearance certificate issued by AEGCL. -(for Supply only.)
  - (k) Copy of Goods Receipt Sheet (GRS)/ Materials Received Voucher (MRV)/ Materials Handing Over Voucher (MHOV). - (for Supply only.)
  - (l) Joint Measurement Sheet. - (for erection only.)
  - (m) Labour Licence, Insurance, etc. - (for erection only.)
- 5.8.3. Payments would be made subject to fulfilment of the following conditions -
- (i) Advance copy of invoices in duplicate with documents/ information as stated under clause (a) to (m), Whichever is applicable, are to be furnished sufficiently in advance.
  - (ii) Any demurrage charges on account of late intimation and/or delivery of documents by the Bank is to be borne by the supplier.
  - (iii) The supplier should intimate the dispatch of each and every consignment to the Purchaser and the Consignee.
  - (iv) All Bank charges are to be borne by the supplier.
  - (v) Payment through Bank for supply of equipment/ materials, dispatched by Rail would be allowed if required, however the equipment/ materials have to reach at destination/ project site in full and good condition and additional expenditure in any form for this is to be borne by the supplier. A prior approval from appropriate authority of the AEGCL is to be taken in this respect.
  - (vi) Payment through Bank for supply of equipment/ materials, dispatched by road transport would be allowed if required, provided that, the transport agency is approved by the Banking Association and prior approval thereof is given by the AEGCL's appropriate authority.

5.8.4. ADVANCE PAYMENT

No advance payment is applicable for this contract.

**5.9.0 PERFORMANCE SECURITY DEPOSIT**

5.9.1. The successful bidder shall have to deposit to the extent of **10% (Ten percent) of the Contract price** as performance security (Bank Guarantee), within fifteen (15) days of receipt of notification of award, duly pledged in favor of the Managing Director, AEGCL and such security deposits shall be valid up to 60(sixty) days beyond the warranty period as per **clause 5.11.3**.

5.9.2. If the Contractor fails or neglects to observe, perform any of his obligations under the contract, it will be

lawful for the "Purchaser" to forfeit either in full or in part at his absolute discretion, the security deposit furnished by the Contractor.

5.9.3. No interest shall be payable on such deposits.

#### **5.10.0 RETENTION MONEY**

5.10.1. Deduction shall be as per payment terms clause no. 5.8.2.

5.10.2. No interest shall be payable on such deductions/retentions.

#### **5.11.0 WARRANTY**

5.11.1. The Contractor/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.

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

5.11.3. The warranty shall remain valid for **24 (Twenty-Four) months** from the date of successful commissioning after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the Purchaser's Requirement. Bidder may at its discretion offer extra warranty which shall be evaluated in the mark based evaluation system

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

5.11.5. If having been notified, the Contractor/Manufacturer fails to remedy the defect within a period of 15 (fifteen) days, the Purchaser may, following notice to the Contractor/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 Contractor or may be deducted by the Purchaser from any amount due the Contractor or claimed under the Performance Security.

#### **5.12.0 QUANTITY VARIATION**

5.12.1. "Purchaser" shall have the right to increase/decrease the ordered quantity by 35% within 50 days of the period of completion and the same shall be carried out at the same rates /prices and terms and conditions stipulated in the contract except in regard to completion schedule, which shall be mutually agreed upon in case of enhancement of the ordered quantity.

#### **5.13.0 INSPECTION AND TESTING**

5.13.1. The Contractor shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections 3, Purchaser's Requirements.

5.13.2. The inspections and tests shall generally be conducted on the premises of the Contractor/Manufacturer. Subject to Sub-Clause 5.13.3, The Contractor shall furnish, all reasonable facilities and assistance, including access to drawings/process chart and production data to the inspectors at no charge to the Purchaser.

5.13.3. The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in SCC Sub-Clause 5.13.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

5.13.4. Whenever the Contractor is ready to carry out any such test and/or inspection, the Contractor shall give a reasonable advance notice (not less than 21 days) of such test and/or inspection and of the place and time thereof to the Purchaser. The Contractor shall obtain from any relevant third party or manufacturer any

necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

- 5.13.5. The Contractor/manufacture shall provide the Purchaser with a certified report of the results of any such test and/or inspection.
- 5.13.6. The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Contractor shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to SCC Sub-Clause 5.13.4
- 5.13.7. If it is agreed between the Purchaser and the Contractor that the Purchaser shall not attend the test and/or inspection, then the Contractor may proceed with the test and/or inspection, and should provide the Purchaser with a certified report of the results thereof.
- 5.13.8. The Contractor agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to SCC Sub-Clause 5.13.5 & 5.13.7, shall release the Contractor from any warranties or other obligations under the Contract.

#### **5.14.0 INSURANCE**

- 5.14.1. The "Contractor" 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.
- 5.14.2. The "Contractor" 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.
- 5.14.3. In case of any loss/ damage/ pilferage/ non-delivery/ short delivery by carriers etc.; the Contractor 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 Contractor shall be initiated within a period of 30(thirty) days from the date of receipt of each consignment by him /them.
- 5.14.4. 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/ Contractors 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 Contractor.
- 5.14.5. Unless, otherwise mutually agreed upon, in case of failure by the Contractor 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 "Contractor" with the Purchaser or take any other appropriate action.

#### **5.15.0 FORCE MAJEURE**

- 5.15.1. "Force Majeure" shall mean any event beyond the reasonable control of the Purchaser or of the Contractor, as the case may be, and which is unavoidable notwithstanding the reasonable care of the party affected, and shall include, without limitation, the following:
- (a) war, hostilities or warlike operations whether a state of war be declared or not, invasion, act of foreign enemy and civil war
  - (b) rebellion, revolution, insurrection, mutiny, usurpation of civil or military government, conspiracy, riot, civil commotion and terrorist acts
  - (c) confiscation, nationalization, mobilization, commandeering or requisition by or under the order of any

- government or de jure or de facto authority or ruler or any other act or failure to act of any local state or national government authority
- (d) strike, sabotage, lockout, embargo, import restriction, port congestion, lack of usual means of public transportation and communication, industrial dispute, shipwreck, shortage or restriction of power supply, epidemics, quarantine and plague
  - (e) earthquake, landslide, volcanic activity, fire, flood or inundation, tidal wave, typhoon or cyclone, hurricane, storm, lightning, or other inclement weather condition, nuclear and pressure waves or other natural or physical disaster
  - (f) shortage of labor, materials or utilities where caused by circumstances that are themselves Force Majeure.
- 5.15.2. If either party is prevented, hindered or delayed from or in performing any of its obligations under the Contract by an event of Force Majeure, then it shall notify the other in writing of the occurrence of such event and the circumstances thereof within fourteen (14) days after the occurrence of such event.
- 5.15.3. The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended in accordance with **SCC Clause 5.16.0**.

#### **5.16.0 EXTENSION OF TIME FOR COMPLETION**

- 5.16.1. The Time(s) for Completion specified in the Article 3 of the Contract Agreement (Contract Forms) shall be extended if the Contractor is delayed or impeded in the performance of any of its obligations under the Contract by reason of any of the following:
- (a) any Change in the scope of works by the Purchaser; which justifies extension of completion time as provided in **SCC Clause 5.12.0**; and
  - (b) any occurrence of Force Majeure as provided in **SCC Clause 5.15.0**.
- 5.16.2. Except where otherwise specifically provided in the Contract, the Contractor shall submit to the Purchaser's Representative a notice of a claim for an extension of the Time for Completion, together with particulars of the event or circumstance justifying such extension as soon as reasonably practicable after the commencement of such event or circumstance. As soon as reasonably practicable after receipt of such notice and supporting particulars of the claim, the Purchaser and the Contractor shall agree upon the period of such extension. In the event that the Contractor does not accept the Purchaser's estimate of a fair and reasonable time extension, the Contractor shall be entitled to refer the matter to a Dispute Board, pursuant to **SCC Sub-Clause 5.19.0**.

#### **5.17.0 LIQUIDATED DAMAGE**

- 5.17.1. The Contractor guarantees that it shall attain Completion of the Works within the Time for Completion specified in the Contract Agreement pursuant to **SCC Sub-Clause 5.6.2**, or within such extended time to which the Contractor shall be entitled under **SCC Clause 5.16.0** hereof.
- 5.17.2. If the Contractor fails to attain Completion of the Works within the Time for Completion or any extension thereof under **SCC Clause 5.16.0**, the Contractor shall pay to the Purchaser liquidated damages at the rate of **1% (one percent)** of the total Contract Price per week or part thereof delay. The aggregate amount of such liquidated damages shall in no event exceed **10% (ten percent)** of the total contract price. 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.
- 5.17.3. Once the aggregated "Liquidated damage" reaches 10% of the total contract price, the Purchaser may consider following actions:
- (a) Procure the undelivered material/ equipment and/or complete the balance works from elsewhere giving notice to the Contractor and to recover any extra expenditure incurred thereby for having to

- procure these materials and works at higher price, at the risk and responsibility of the Contractor; or
- (b) Cancel the contract wholly or in part and to complete the works at the full risk and cost of the Contractor and forfeit the security deposit.
  - (c) Declare it as a "Contractual Failure" and act in accordance with **SCC Clause 5.18.0**.

#### **5.18.0 CONTRACTUAL FAILURE**

5.18.1. In the event of contractual failure of any respect on the part of the Contractor, the Purchaser shall be entitled to operate security deposit or any deposit or any payment due to Contractor irrespective of whether his default relates to the particular orders or not towards the Purchaser's claim for damages arising out of the failure. In addition, the Purchaser may black-list or bans the "Contractor" or pending enquiry, suspend him or take any other steps considered suitable.

#### **5.19.0 ARBITRATION**

- 5.19.1. If at any time, any question, dispute or difference whatsoever shall arise between the Purchaser and the Contractor in relation to or in connection with this contract, either party may, by written notice, refer the matter to the adjudication of a Sole Arbitrator to be appointed by mutual agreement of both parties in accordance with the Arbitration and Conciliation Act, 1996 and its amendments. The arbitration proceedings shall be held at Guwahati, or at any other place as may be decided by the Purchase.
- 5.19.2. The decision of the Sole Arbitrator shall be final and binding on both parties and the expenses of the arbitration shall be paid as may be determined by the Arbitrator. However, any dispute arising out of this contract will first be discussed and settled bilaterally between Purchaser and the Contractor.

**Section 6 - Contract Forms**

**This Section contains the format for Notification of Award, the Contract Agreement and Appendices to the Contract Agreement which, once completed, will form the Contract along with the Section 4 and Section 5. The Bidder should note that this Section shall be completed fully at the time of Contract signing.**

[AEGCL's letter head]

**Notification of Award**

[ date ]

To: [ Name and address of the Contractor ]

This is to notify you that your Bid dated [date] for execution of the [ name of the work] against [Bid identification number] for the Contract Price in the aggregate of Rupees [ amounts in numbers and words ] (as per Price Schedule-1), as corrected and modified in accordance with the Instructions to Bidders is hereby accepted, and it is decided to award on you the (' \_\_\_Name of work\_\_\_') covering inter-alia supply of all equipment and services specified in bidding document.

You are requested to furnish the Performance Security within fifteen (15) days in accordance with the Conditions of Contract, using for that purpose one of the Performance Security Forms included in Section 6 (Contract Forms) of the Bidding Document.

[ Authorized Signature ]

[ Name and Title of Signatory ]

Assam Electricity Grid Corporation Limited

Attachment: 1) Price schedule (with arithmetic correction if any)  
2) Draft Contract agreement

STAMP(Rs. 100, Non Judicial)

**1. Contract Agreement**

(Supply and related services Contract)

THIS AGREEMENT made the \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_,  
BETWEEN

**Assam Electricity Grid Corporation Limited (herein after referred to as AEGCL)**, a corporation incorporated under the laws of Company Act, 1956 and having its registered office at First Floor, Bijuli Bhawan, Paltanbazar, Guwahati-781001, Assam and [**name of Contractor**], a firm/company incorporated under the laws of Company Act, 1956 and having its principal place of business at [**address of Contractor**] (hereinafter called "the Contractor"). [**in case of JV insert name and address of the Lead Partner as well as other Partners**]

WHEREAS AEGCL desires to engage the Contractor to the 'Ex-works Supply Contract' (also referred to as the 'First Contract') covering inter-alia supply of all equipment and materials for the complete execution of "**Replacement of tension disc insulator strings at the tension towers of 132KV Nazira-Teok S/C Transmission line from Nazira GSS gantry to Loc. No. 115**" as detailed in the Contract Document ("the Facilities"), and the Contractor has agreed to such engagement upon and subject to the terms and conditions hereinafter appearing.

NOW IT IS HEREBY AGREED as follows:

**Article 1**

**Contract Documents**

1.1 **Contract Documents** (Reference SCC Clause 5.2.0)

The following documents shall constitute the Contract between the Purchaser and the Contractor, and each shall be read and construed as an integral part of the Contract:

- (a) This Contract Agreement and the Appendices hereto
- (b) Letter of Price Bid and Price Schedules submitted by the Contractor
- (c) Letter of Technical Bid and Technical Proposal submitted by the Contractor
- (d) Special Conditions of Contract
- (e) General Conditions of Supply and Erection.
- (f) Specification (Purchaser's Requirements)
- (g) Drawings (Purchaser's Requirements)
- (h) Other completed Bidding Forms submitted with the Letters of Technical and Price Bids
- (i) Guaranteed and other Technical Particulars (as submitted with the Bid).
- (j) Any other documents shall be added here

1.2 **Order of Precedence** (Reference SCC Clause 5.2.0)

In the event of any ambiguity or conflict between the Contract Documents listed above, the order of precedence shall be the order in which the Contract Documents are listed in Article 1.1 (Contract Documents) above.

1.3 **Definitions** (Reference SCC Clause 5.1.0)

Capitalized words and phrases used herein shall have the same meanings as are ascribed to them in the SCC.

**Article 2  
Contract Price and  
Terms of Payment**

- 2.1 **Contract Price** (Reference SCC Clause 5.7.0)  
The Purchaser hereby agrees to pay to the Contractor the Contract Price in consideration of the performance by the Contractor of its obligations hereunder. The Contract Price shall [ . . . **amounts in rupees in words** . . . ], [ . . . **amounts in figures** . . . ] as specified in Price Schedule No. 3 (Grand Summary).  
**The Contract Price is fixed.**
- 2.2 **Terms of Payment** (Reference SCC Clause 5.8.0)  
The terms and procedures of payment according to which the Purchaser will pay the Contractor are given in the Appendix (Terms and Procedures of Payment) hereto.

**Article 3  
Commencement Date  
and Completion Time**

- 3.1 **Commencement Date** (Reference SCC Clause 5.6.1)  
The Commencement Date upon which the period until the Time for Completion of the Works shall be counted from is the date when this Contract Document is signed.
- 3.2 **Completion Time** (Reference SCC Clause 5.6.2)  
The whole works under the scope of this Contract shall be completed within **7(Seven)** months from Contract Commencement Date with following schedule:

**Article 4. Appendices**

- 4.1 The Appendices listed in the attached List of Appendices shall be deemed to form an integral part of this Contract Agreement.
- 4.2 Reference in the Contract to any Appendix shall mean the Appendices attached hereto, and the Contract shall be read and construed accordingly.

IN WITNESS WHEREOF the Purchaser and the Contractor have caused this Agreement to be duly executed by their duly authorized representatives the day and year first above written.

Signed by, for and on behalf of the Purchaser

Signed by, for and on behalf of the Contractor

[ **Signature** ]

[ **Signature** ]

[ **Title** ]

[ **Title** ]

in the presence of

in the presence of

[ **Signature** ]

[**Signature** ]

[ **Title** ]

[**Title** ]

## APPENDICES

- Appendix 1 - Special Conditions of Contract
- Appendix 2 - Completion schedule (bar chart)
- Appendix 3 - Performance Security.
- Appendix 4 - Price Schedule.
- Appendix 5 - Guaranteed Technical Particulars  
(Other documents if required shall be added here)

**Appendix 3 - Form of Performance Security  
Bank Guarantee**

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

**Bank's Name:**  
**Address of Issuing Branch or Office:**  
**Email id and phone no for correspondence:**

**Beneficiary: Managing Director, AEGCL**  
**Name and Address of Purchaser**

**Bid Security No.:**

WHEREAS \_\_\_\_\_ [name and address of Contractor] (hereinafter called "the Contractor") has undertaken, in pursuance of LoA No. \_\_\_\_\_ dated \_\_\_\_\_ to execute \_\_\_\_\_ [name of Contract and brief description of Works] (hereinafter called "the Contract");

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

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

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

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

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

BG expiry date:  
BG clam date:

**Bank's seal and authorized signature(s)**

**NOTE**

1. *All italicized text is for use in preparing this form and shall be deleted from the final document. An amount is to be inserted by the Guarantor, representing the percentage of the Contract Price specified in the Contract.*
2. *This guarantee shall be valid upto 30 days beyond the Warranty Period as per the Contract.*
3. *For BG amount equal to or more than 50,000.00, BG should be signed by two bank officers to be valid.*

4. ***Address of the banker with email and phone number for correspondence with banker should be clearly mentioned. Any correspondence related to the BG with the banker shall be made to the address mentioned in the BG.***