

# ASSAM ELECTRICITY GRID CORPORATION LIMITED

Regd. Office: 1st Floor, Bijulee Bhawan, Paltan Bazar, Guwahati – 781001

CIN: U40101AS2003SGC007238

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**BID IDENTIFICATION NO: AEGCL/DGM/LAC/TT/TLS-69/2024/727 ; Dated: 02-07-2024**

Bidding Document  
For

**Augmentation of 132kV Bus at 132/33 kV Baghjap GSS for providing power to the upcoming TATA plant at the premises of HPC, Jagiroad.**

**DEPUTY GENERAL MANAGER,  
LOWER ASSAM T&T CIRCLE, AEGCL  
NARENGI, GUWAHATI-26.**

**SECTION - 1**  
**INSTRUCTION TO BIDDER**

**1.1.0 SCOPE OF BID :-**

1.1.1. The **Deputy General Manager, Lower Assam, T&T Circle, AEGCL** on behalf of **Assam Electricity Grid Corporation Ltd**, hereinafter referred to as AEGCL or Purchaser invites sealed tenders in prescribed form, from reputed firms/ contractors/ manufacturers with sound technical and financial capabilities for the following work. A single-stage two envelope procedure (**Techno-Commercial and Price Bid**) will be adopted for this tender.

- a) **NAME OF WORK :- Augmentation of 132kV Bus at 132/33 kV Baghjap GSS for providing power to the upcoming TATA plant at the premises of HPC, Jagiroad.**
- b) **ESTIMATED VALUE FOR THE WORK :- Rs. 6,71,198.00 (Rupees Six Lakh Seventy One Thousand One Hundred and Ninety Eight) only including taxes and F&I.**
- c) **Fund: AEGCL Own source subject to recoupment from Deposit fund of AIDC/ TATA**
- d) **Key Dates: Refer to NIT.**
- e) **Bidding address :-**  
O/o The Deputy General Manager  
Lower Assam, T&T Circle, AEGCL,  
Narengi, Guwahati-26  
  
[e-mail: [dgmmtc.guwahati@aeqcl.co.in](mailto:dgmmtc.guwahati@aeqcl.co.in)]
- f) Bidders may obtain further information from the office of the Deputy General Manager, Lower Assam T&T Circle, AEGCL, Narengi, Guwahati - 781026, Assam.
- g) **Cost of Bidding :-** The bidder shall bear all costs associated with the preparation and submission of its bid and AEGCL will in no case be responsible or liable for those costs. **The cost of the tender paper is Rs. 500/- (Rupees Five Hundred) only to be pledged in favour of "AEGCL, Guwahati" (in the form of A/C payee DD/Bankers Cheque).**

**1.2.0 BIDDING PROCEDURE :-**

Two envelope bidding procedure will be adopted. Bidders are to submit two sealed envelopes simultaneously, one containing the technical & Commercial proposal, Part-I (Technical & Commercial Bid) and the other containing the price proposal Part-II (Price Bid), enclosed together in one sealed envelope. Initially, only the Part-I bids shall be opened. Part-I proposals submitted by bidders, which do not conform to the specified requirement, may be rejected as deficient bids. The Part-II (Price Bid) proposals of technically qualified bidders will be opened at a date and time, which will be informed to all the qualified bidders of Part-I.

**1.3.0 SCOPE OF WORK :-**

1.3.1 The brief description of the scope of work covered under this bidding document is furnished below:

- a) Design, manufacture, supply of various materials such as ACSR Zebra conductor, 90KN and 70 KN Disc insulators and insulator assembly, clamps at 132kV Baghjap GSS as per bid specification and price schedule.
- b) Erection, testing and commissioning\_of ACSR Zebra conductor, 90KN and 70 KN Disc insulators and insulator assembly for 132kV Bus augmentation at 132kV Baghjap GSS as per bid specification and price schedule.
- c) Loading at manufacturer's works, transportation and delivery at the substation site, including unloading at destination site.
- d) Freight & Transit Insurance, storage at site and site insurance of all materials at site shall be in the scope of the contractor.
- e) Arrangements of any permits required for transportation and movement of supplied materials. However, AEGCL shall assist as far as practicable in the process.

1.3.2 The Bill of Quantities for indicative purposes is furnished in Price Schedules.

1.3.3 The bidder on its own responsibility may visit and examine the Site of Works and its surroundings and obtain information that may be necessary for preparing the bid. Any permits or licenses that may be required to execute the works should also be obtained by the contractor.

1.3.4 **The items mentioned in these Annexure shall only be used while quoting the bid prices. Any other items not specifically mentioned in the specification but which are required for installation, testing, commissioning and satisfactory operation of**

**the equipment as per Indian Standards/IE Rules/IE Act and concerned authority regulations are deemed to be included in the scope of the specification and no deviation in this regard shall be accepted.**

1.3.5 **No modifications/additions/ deletions shall be made by the bidder to the items and quantities given in these schedules.**

1.3.6 The successful bidder will be expected to complete the works within **45 days from the date of drawing approval and subject to availability of shutdown.** Bidders should note that time is the essence of this bid.

#### **1.4.0 ELIGIBILITY CRITERIA OF THE BIDDER:**

1.4.1 A Bidder may be a private entity or a government-owned entity or any combination of such entity with the intent to enter into an agreement supported by a letter of intent or under an existing agreement in the form of a joint venture, consortium or association.

1.4.2 In case of a **Joint Venture (JV)** :-

When the bidder is a Joint Venture (JV) of two or more firms as partners, all partners shall be jointly and severally liable. The JV shall legally authorize one of the partners as the lead partner for the purpose of submitting the bid, incur liabilities; receive payments and instructions on behalf of the others. A copy of the notarized JV agreement, executed on non-Judicial stamp paper, shall be submitted with the bid. However, in case of successful bid, the agreement shall be signed by all the partners, so as to be legally binding on all the partners. All the partners of the Joint Venture shall be jointly and severally liable for the execution of the contract in accordance with the contract terms

1.4.3 A Bidder shall have Indian nationality. A Bidder shall be deemed to have the nationality of a country if the Bidder is a national or is constituted, incorporated, or registered and operates in conformity with the provisions of the laws of Republic Of India.

1.4.4 AEGCL considers a **conflict of interest** to be a situation in which a party has interests that could improperly influence that party's performance of official duties or responsibilities, contractual obligations, or compliance with applicable laws and regulations, and that such conflict of interest may contribute to or constitute a prohibited practice under Anticorruption Policy of Government of India and Government Of Assam. In pursuance Anticorruption Policy's requirement that Employer as well as bidders, suppliers, and contractors observe the highest standard of ethics. AEGCL will take appropriate actions if it determines that a conflict of interest has flawed the integrity of any procurement process.

1.4.5 A firm that is under a declaration of ineligibility by the AEGCL or any Government Entity or PSU at the date of the deadline for bid submission or thereafter i.e. on or before contract signing date shall be disqualified. Bidders shall provide such evidence of their continued eligibility satisfactory to the AEGCL, as the Employer shall reasonably request.

#### **1.5.0 FINANCIAL CAPABILITY**

1.5.1 Bidder will require to submit along with the bid the audited balance sheets and other legal financial statements acceptable to AEGCL, for the last 3 (three) years to demonstrate the current soundness of the Bidders financial position and its prospective long term profitability. As a minimum, an Applicant's net worth calculated as the difference between total assets and total liabilities should be positive. Wherever necessary the Employer may make enquiries with Bidder's bankers.

1.5.2 Average Annual Turnover : Minimum average annual turnover INR 3,35,600.00 calculated as total certified payments received for contracts in progress or completed, within the last 3 (Three) Years.

1.5.3 Financial Resources: Bidder needs to demonstrate access to, or availability of, financial resources such as liquid assets, unencumbered real assets, lines of credit, and other financial means, other than any contractual advance payments to meet:

- (1) the cash-flow requirement of atleast 70% of the work value and
- (2) the overall cash flow requirements for this contract and its current works commitment.

1.5.4 Bidder must keep GST liabilities up to date and non-payment of GST liabilities and non-filing of relevant GST return more than 3 (three) months shall be reckoned as GST defaulter and this may be considered a cause for disqualification of a bidder and the bid may be rejected.

1.5.5 The Contractor must furnish their Bank Solvency Certificate to show the bidder's financial position indicating the amount by concerned authority in necessary format as per their banks

#### **1.6.0 EQUIPMENT CAPABILITIES**

1.6.1 The bidder should have assured access to supply of equipment as per bid and shall demonstrate that he or his supplier has capable of, manufacture & supply of such material. Bidders are required to demonstrate that based on known commitments the materials will be available for use in the proposed contract.

1.6.2 **Bidder may be manufacturer of the offered products or a firm/company having authorisation from a manufacturer. In case the bidder is not a manufacturer of the offered products, bidder must submit manufacturer's authorisation using for that**

**purpose Form-MA provided in Section-3 Bidding forms.** Offered product's manufacturer must have least Five years of experience in design, manufacture and supply of the items mentioned in this bid. The offered product's manufacturer must have supplied such equipment which are in successful operation for atleast three years. Bidder shall submit copy of orders and performance certificates to establish its eligibility.

**1.7.0 EXPERIENCE:**

**1.7.1** Experience in similar nature of works under contracts in the role of manufacturers, contractor, subcontractor, or management contractor for at least the last 7 (seven) years prior to the bid submission deadline.

**1.7.2** Participation as manufacturer/ contractor Experience having successfully completed similar works during last 7 years ending last day of the month previous to the one in which applications are invited should be either of the following:

- (a) Three (3) similar completed works costing not less than 40% of total estimated cost.
- (b) Two (2) similar completed works costing not less than 50% of total estimated cost.
- (c) One (1) similar completed works costing not less than 80% of total estimated cost.

**1.7.3** The Bidder must have experience of executing work of similar nature previously in any Govt. organization/ PSU. The bidder must submit experience and completion certificate for scrutiny by AEGCL. Each of such project/ works should consist of completion certificate.

**1.8.0 LITIGATION HISTORY**

Bidders shall submit details of all litigation, arbitration or other claims, whether pending, threatened or resolved in the last five years, with the exception of immaterial claims with a cumulative impact of not more than 10% of their total assets. The Employer may disqualify bidders in the event that the total amount of pending or threatened litigation or other claims represent more than 50% of their total assets.

**1.9.0 DOCUMENTS COMPRISING THE BID**

**1.9.1** The bid submitted by the bidder shall comprise two envelopes submitted simultaneously, one containing only the technical proposal and the other the price proposal.

**1.9.2 The Technical Bid submitted by bidders shall contain the following:**

- a) Bid Submission Sheet
- b) Documentary evidence to establish that the Bidder meet the qualifying requirements in accordance with Clause 1.5.0.
- c) Documents to be furnished as per Clause 1.9.3
- d) The Bid Guarantee (Bid Security) in accordance with Clause 1.20.0 & its sub-clauses of this Section.
- e) All Bidding Schedules properly filled up including Price Bid Schedules.
- f) All other information and documents such as Guaranteed and Technical Particulars, type test reports, drawings, technical leaflets etc, as required in the Technical Specification

**1.9.3 To establish its eligibility and qualifications to perform the contract, the bidder shall provide along with the above-mentioned documents the following additional documents (mandatory) on qualifying requirements such as:**

- a) *Copies of original documents defining the constitution or legal status, place of registration, and principal place of business, written power of attorney of the signatory of the Bid to commit the Bidder.*
- b) *Copies of valid Trade License issued by competent authority in the State of Assam or in the State where the bidder's business is registered.*
- c) *Copies of valid Electrical License for working in 132kV and above Grid Substations issued by competent authority in the State of Assam or in the State where the bidder's business is registered*
- d) *Copies of valid Labour License issued by competent authority in the State of Assam or in the State where the bidder's business is registered*
- e) *Copies of PAN, GST Registration Certificate as per Goods & Services Tax laws.*
- f) *Total monetary value of similar work performed by the bidder in each of the last three years.*
- g) *Experience in works of a similar nature and volume for each of the last three years, and details of works under way or contractually committed in AEGCL or any other Govt. entity/PSU who may be contacted for further information on those contracts.*

- h) *Qualifications and experience of key site management and technical personnel proposed for the Contract.*
- i) *Reports on the financial standing of the Bidder, such as profit and loss statements and audited annual accounts certified by CA of the company for the last three years including IT return duly acknowledged by the tax department for the last three years.*
- j) *Evidence of adequacy of working capital for this contract (access to line (s) of credit and availability of other financial resources).*
- k) *Information regarding any litigation, current or during the last five years, in which the Bidder is involved, the parties concerned, and disputed amount.*

1.9.2 Even though the bidders meet the above qualifying criteria, they are subject to be disqualified if they have made misleading or false representations in the forms, statements and attachments submitted in proof of the qualification requirements.

1.9.3 Notwithstanding anything stated herein above, AEGCL reserves the right to assess the capacity and capability of the bidder to execute the work, should the circumstance warrant such assessment in the overall interest of AEGCL.

**1.10.0 DOCUMENTS ESTABLISHING CONFORMITY OF THE GOODS AND SERVICES**

1.10.1 The documentary evidence of the conformity of the goods and services to the Bidding Document may be in the form of literature, drawings and data, and shall furnish:

- a) A detailed description of the essential technical and performance characteristics of the goods and services, including the functional guarantees of the Goods, in response to the Specification;
- b) A commentary on the Purchaser's Specification and adequate evidence demonstrating the substantial responsiveness of the plant and services to those specifications. Bidders shall note that standards for workmanship, materials and equipment designated by the Purchaser in the Bidding Document are intended to be descriptive (establishing standards of quality and performance) only and not restrictive. The Bidder may substitute alternative standards, brand names and/or catalog numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions are substantially equivalent or superior to the standards designated in the Specification.

**1.11.0 SITE VISIT**

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

**1.12.0 CLARIFICATION ON BIDDING DOCUMENTS :-**

1.12.1 A prospective bidder requiring any clarification of the bidding documents may notify AEGCL in writing at the following address-  
**Deputy General Manager, Lower Assam T&T Circle, AEGCL, Narengi, Guwahati-26**

AEGCL will respond to any request for clarification which it receives earlier than 7 (**seven**) days prior to the deadline for submission of bids.

1.12.2 Verbal clarification and information given by AEGCL or its employee(s) or representative (s) shall not in any way be binding on AEGCL.

**1.13.0 AMENDMENT OF BIDDING DOCUMENTS**

1.13.1 At any time prior to the deadline for submission of bids, the AEGCL may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the bidding documents by issuing addenda.

1.13.2 Any addendum thus issued shall be part of the bidding documents pursuant to Sub-Clause, and shall be communicated in writing or by fax to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum by fax to AEGCL.

**1.14.0 LANGUAGE OF BID**

1.14.1 The bid, and all correspondence and documents related to the bid, exchanged between the bidder and AEGCL shall be written in the English language. Supporting documents and printed literature furnished by the bidder shall also be in English language.

**1.15.0 BID FORM AND PRICE SCHEDULES**

1.15.1 The Bidder shall complete the Bid Form and the appropriate Price Schedules furnished in the bidding documents in the manner and detail indicated therein.

### **1.16.0 BID PRICES**

- 1.16.1 Bidders shall give a breakdown of the prices in the manner and detail called for in the **Schedules of Prices**.
- 1.16.2 In the Schedules, Bidders shall give the required details and a breakdown of their prices, including all taxes, duties, levies, and charges payable as of twenty eight (28) days prior to the deadline for submission of bids, as follows:
- (a) Plant and equipment (**Schedules of Prices**) shall be quoted on an EXW (ex-factory, ex-works, ex-warehouse or off-the-shelf, as applicable). All taxes and duties taxes as applicable and freight and insurance shall be indicated separately.
- 1.16.3 Price Adjustment: Prices quoted by the Bidder shall be FIRM during performance of the contract. Duties and Taxes shall be adjusted, except there is variation due to changes in legislation of the Country.

### **1.17.0 INSURANCE**

The Bidder shall insure the Works/Materials (in transit and at the site) in accordance with the requirements of General Conditions of Contract. The Bidder shall provide details of the policies that he intends to take out as part of his Bid submission. **The bid price shall include all costs in pursuance of fulfilling insurance liabilities under the contract.**

### **1.18.0 BID VALIDITY**

- 1.18.1 Bids shall remain valid for a period of **180 (One Eighty)** days after the date of opening of Technical Bids.
- 1.18.2 In exceptional circumstances, prior to expiry of the original bid validity period, AEGCL may request that the bidders extend the period of validity for a specified additional period. The request and the responses thereto shall be made in writing. A bidder may refuse the request without forfeiting its bid security. A bidder agreeing to the request will not be required or permitted to modify its bid, but will be required to extend the validity of its bid security for the period of the extension, and in compliance with Clause 1.19.0 in all respects.

### **1.19.0 BID SECURITY (EARNEST MONEY)**

- 1.19.1 **The Bidder shall furnish, as part of its bid with the Technical Proposal, a bid security in the amount of Rs. 13,400.00 (Rupees Thirteen Thousand and Four Hundred) only.**
- 1.19.2 For participation in the bidding procedure, participants must compulsorily pay the Bid Security / Earnest Money Deposit in the form of DD/Fixed Deposit/bank Guarantee/Banker's Cheque in favour of '**AEGCL, Guwahati**'. The bid security shall remain valid for 30 days beyond the original validity period for the bid, and beyond any period of extension subsequently requested.
- 1.19.3 Any bid not accompanied by an acceptable bid security shall be rejected as non-responsive.
- 1.19.4 The bid securities of unsuccessful bidders will be returned as promptly as possible, against written request from the unsuccessful bidders.
- 1.19.5 The bid security of the successful bidder will be returned when the bidder has signed the Contract Agreement and furnished the required performance security.
- 1.19.6 The bid security may be forfeited
- (a) if the bidder withdraws its bid, except as provided in Sub-Clause 1.24.1;
- (b) if the bidder does not accept the correction of its bid price, pursuant to Sub-Clause 1.24. or
- (c) in the case of a successful bidder, if it fails within the specified time limit to
- (i) sign the Contract Agreement,
- (ii) furnish the required performance security.
- 1.19.7 No interest shall be payable by AEGCL on the above bid guarantee.

### **1.20.0 ALTERNATIVE PROPOSALS BY BIDDERS**

- 1.20.1 Bidders shall submit offers, which comply with the Bidding Documents, including the basic AEGCL's Requirements as indicated in the bidding documents. Alternatives will not be considered. The attention of bidders is drawn to the provisions of Clause 1.29.0 regarding the rejection of bids which are not substantially responsive to the requirements of the bidding documents.

### **1.21.0 FORMAT AND SIGNING OF BID**

- 1.21.1 The bidder shall prepare one original and two copies of the bid proposal, clearly marking each one as: "ORIGINAL- BID PROPOSAL, etc as appropriate. In the event of discrepancy between the original and any copy, the original shall prevail.
- 1.21.2 The original and all copies of the bid shall be typed or written in indelible ink (in the case of copies, Photostats are also acceptable) and shall be signed by a person or persons duly authorized to sign on behalf of the bidder. All pages of the bid where entries or amendments have been made shall be initialed by the person or persons signing the bid.

- 1.21.3 The bid shall contain no alterations, omissions or additions, except those to comply with instructions issued by AEGCL, or as necessary to correct errors made by the bidder, in which case such corrections shall be initiated by the person or persons signing the bid.
- 1.21.4 The Bidders must submit the Bid Guarantee in separate sealed envelope, super-scribed as under:  
*“BID GUARANTEE (Name of the Package)”*
- 1.21.5 The Bid must contain the name, residence and place of business of the person or persons making the Bid and must be signed and sealed by the Bidder with his usual signature. The names of all persons signing should also be typed or printed below the signature.
- 1.21.6 Bids by Corporation / Company must be signed with the legal name of the Corporation/Company by the President, Managing Director or by the Secretary or other person or persons authorized to Bid on behalf of such Corporation/Company in the matter.
- 1.21.7 A Bid by a person who affixes to his signature the word ‘President’, ‘Managing Director’, ‘Secretary’, ‘Agent’, or other designation without disclosing his principal will be rejected.
- 1.21.8 Satisfactory evidence of authority of the person signing on behalf of the Bidder shall be furnished with the Bid.
- 1.21.9 The Bidder’s name stated on the proposal shall be exact legal name of the firm
- 1.21.10 Bids not conforming to the above requirements of signing may be disqualified.
- 1.21.11 If the outer envelope is not sealed and not marked as above, AEGCL will assume no responsibility for the misplacement or premature opening of the bid.
- 1.21.12 The Bid must be accompanied with requisite BID SECURITY in a separate sealed cover.
- 1.21.13 The Bidders have the option of sending the Bids by post/courier or in person. Bids submitted by Telex/ Telegram/Fax will not be accepted. No request from any Bidder to AEGCL to collect the proposal from Airlines/Cargo Agents etc shall be entertained by AEGCL.
- 1.22.0 DEADLINE FOR SUBMISSION OF BIDS**
- 1.22.1 Bids must be received by AEGCL at the address specified above no later than refer to NIT.
- 1.22.2 AEGCL may, at its discretion, extend the deadline for submission of bids by issuing an addendum in accordance with Clause 1.13.0, in which case all rights and obligations of AEGCL and the bidders previously subject to the original deadline will thereafter be subject to the deadlines extended.
- 1.23.0 LATE BIDS**
- 1.23.1 Any bid received by AEGCL after the deadline for submission of bids prescribed in Clause 1.22.0 will be rejected and returned unopened to the bidder.
- 1.24.0 WITHDRAWAL OF BIDS**
- 1.24.1 The bidder may withdraw its bid after bid submission, provided that written notice of the withdrawal is received by AEGCL prior to the deadline for submission of bids.
- 1.24.2 The bidder's withdrawal notice shall be prepared, sealed, marked and delivered with the envelopes additionally marked "WITHDRAWAL".
- 1.24.3 Withdrawal of a bid during the interval between the deadline for submission of bids and the expiration of the period of bid validity specified in Sub-Clause 1.18.0 may result in the forfeiture of the bid security pursuant to Sub-Clause 1.19.6.
- 1.25.0 OPENING OF BIDS**
- 1.25.1 AEGCL will open the Technical Bids ( Part-I ) , in the presence of bidders' representatives who choose to attend; at the following location:  
Deputy General Manager.  
LA T&T Circle, AEGCL, Narengi  
Guwahati-26
- The bidders' representatives who are present shall sign a register evidencing their attendance.
- 1.25.2 Envelopes marked “WITHDRAWAL” shall be opened and read out first. Bids for which an acceptable notice of withdrawal has been submitted pursuant to Claus 1.24.0 Oshall not be opened.

- 1.25.3 The bidders' names, the Bid Prices, the presence or absence of Bid Security, and such other details as AEGCL may consider appropriate, will be announced and recorded by AEGCL at the opening. The bidders' representatives will be required to sign this record.
- 1.26.0 PROCESS TO BE CONFIDENTIAL**
- 1.26.1 Information relating to the examination, clarification, evaluation and comparison of bids and recommendations for the award of a contract shall not be disclosed to bidders or any other persons not officially concerned with such process. Any effort by a bidder to influence AEGCL's processing of bids or award decisions may result in the rejection of the bidder's bid.
- 1.27.0 PRELIMINARY EXAMINATION OF BIDS AND DETERMINATION OF RESPONSIVENESS**
- 1.27.1 Prior to the detailed evaluation of bids, AEGCL will examine the bids to determine whether they are complete and all documents as per Clause 1.9.0 are provided or not, whether the documents have been properly signed, whether the required security is included, and whether the bids are generally in order and provides any clarifications and/or substantiation that AEGCL may require pursuant to Clause 1.27.0.
- 1.27.2 A substantially responsive bid is one which conforms to all the terms, conditions and requirements of the bidding documents, without material deviation or reservation and includes the amendments and changes, if any. AEGCL may waive any minor non-conformity or irregularity in a Bid which does not constitute a material deviation or reservation, provided such deviation or reservation does not (i) affect in any substantial way the scope, quality or performance of the Works; (ii) limit in any substantial way, inconsistent with the bidding document, AEGCL's rights or bidder's obligations under the contract; or (iii) whose rectification would affect unfairly the competitive position of other bidder's presenting substantially responsive bids.
- 1.27.3 Any bids found to be non-responsive for any reason or not meeting the minimum levels of the performance or other criteria specified in the bidding documents will be rejected by AEGCL and not included for further consideration.
- 1.28.0 CLARIFICATION OF BID PROPOSALS AND CONTACTING AEGCL**
- 1.28.1 To assist in the examination, evaluation and comparison of Bids, AEGCL may, at its discretion, ask any bidder for clarification of its bid. The request for clarification and the response shall be in writing or by mail, but no change in the price or substance of the bid shall be sought, offered or permitted except as required to confirm the correction of arithmetic errors discovered by AEGCL in the evaluation of the bids in accordance with Clause 1.28.0.
- 1.28.2 Subject to Sub-Clause 1.28.1, no bidder shall contact AEGCL on any matter relating to its bid from the time of opening Bids to the time the contract is awarded. If the bidder wishes to bring additional information to the notice of AEGCL, it should do so in writing.
- 1.28.3 Any effort by the bidder to influence AEGCL in AEGCL's evaluation of price proposals, bid comparison or contract award decisions may result in the rejection of the bidder's bid.
- 1.29.0 CORRECTION OF ERRORS**
- 1.29.1 Price Proposals determined to be substantially responsive will be checked by AEGCL for any arithmetic errors. Arithmetic errors will be rectified on the following basis. If there is a discrepancy between the unit rate and the total cost that is obtained by multiplying the unit rate and quantity, the unit rate shall prevail and the total cost will be corrected unless in the opinion of AEGCL there is an obvious misplacement of the decimal point in the unit rate, in which case the total cost as quoted will govern and the unit rate corrected. If there is a discrepancy between the total bid amount and the sum of total costs, the sum of the total costs shall prevail and the total bid amount will be corrected.
- 1.29.2 The amount stated in the Form of Bid for Price Proposal will be adjusted by AEGCL in accordance with the above procedure for the correction of errors and, shall be considered as binding upon the bidder. If the bidder does not accept the corrected amount of bid, its bid will be rejected, and the bid security may be forfeited in accordance with Sub-Clause 1.19.6 (b).
- 1.30.0 EVALUATION AND COMPARISON OF BID PROPOSALS**
- 1.30.1 AEGCL will evaluate and compare only the bids determined to be substantially responsive in accordance with Clause 1.27.0.
- 1.30.2 For equipment and materials, the comparison shall be of the ex-factory price of equipment and materials offered (such price to include all costs as well as duties and taxes paid or payable on components and raw material incorporated); plus the cost of transportation, local taxes and duties, civil works, installation and other services required under the contract with due corrections as per Clause 1.29.0, AEGCL's comparison will also include the costs if any, resulting from application of the evaluation procedures described in Sub-Clause 1.30.4.
- 1.30.3 AEGCL will carry out a detailed evaluation of the bids in order to determine whether the bidders are qualified and whether the technical aspects are substantially responsive to the requirements set forth in the bidding documents. In order to reach such a determination,



AEGCL will examine the information supplied by the Bidders and other requirements in the bidding documents, taking into account the following factors:

- (a) Qualification
  - (i) the determination will take into account the Bidder's financial and technical capabilities and past performance; it will be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to Clause 1.5.0 as well as such other information as AEGCL deems necessary and appropriate; and
  - (ii) an affirmative determination will be a prerequisite for AEGCL to continue with the evaluation of the proposal; a negative determination will result in rejection of the Bidder's bid.
- (b) Technical
  - (i) overall completeness and compliance with AEGCL's Requirements; the technical merits of materials and equipments offered and deviations from AEGCL's Requirements; suitability of the facilities offered in relation to the environmental and climatic conditions prevailing at the site; quality, function and operation of any process control concept included in the bid;
- (c) Commercial
  - (i) Deviations and omissions from the contractual and commercial conditions as identified in the Bid.
  - (ii) compliance with the time schedule called for in the Bidding Document and evidenced as needed in a milestone schedule provided in the bid; and
  - (iii) the functional guarantees of the facilities offered against the specified performance criteria of the plant and equipment.

1.30.4 Pursuant to Sub-Clause 1.30.4, the following evaluation methods will be followed:

- (a) **Time Schedule:** The plant and equipment covered by this bidding are required to be shipped, installed and the facilities completed within the period specified in Sub-Clause  
Bidders submitting bids which deviate from the time schedule specified will be rejected.
- (b) **Deviations from the Bidding Document:**  
Bidders shall base their Bid price on the terms & conditions specified in the Bidding Documents.  
Bids with material deviations and omissions shall be rejected.
- (c) **Functional Guarantee of the facilities:**  
Bidders shall state the functional guarantees (e.g. guaranteed performance or ratings or efficiency) of the proposed Goods in response to AEGCL's Requirements (Technical Specifications). Goods, Plant and equipment offered shall have a minimum performance (functional guarantees/ratings) specified in the Technical Specifications to be considered responsive. Bids offering Goods, plant and equipment with functional guarantees less than the minimum specified shall be rejected.

#### 1.30.5 Bid Evaluation Process for Abnormally Low Bids:

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

(a) Identification:

For the identification of the Abnormally Low Bids, two approaches as applicable shall be adopted:

- i. **Absolute Approach** when there 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 a statical comparison method which will be applied when there are more than five nos. of substantially responsive bids. A potential ALB is identified where the low Bid is more than one standard deviation below the average of substantially responsive bids received.

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

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

- i. Identify ALB as per the step mentioned in Clause No.(a).(i) and 10.b).(ii) whichever is applicable.
- ii. Clarify and analyse the bidders resource inputs and pricing, including overheads, contingencies and profit margins. In that respect committee may seek the reference of the guidelines of World Bank, AIIB, ADB etc.
- iii. Decide whether to accept or reject the tender.

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

- i. If any abnormally low bid is accepted under point no. (b) (iii), after taking of additional performance security as per the assessment of the committee, however the total performance security should not have to 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 coextensive with the applicable defect liability period of the contract.
- iii. Non submission of the additional performance security shall constitute sufficient ground to rejection of the bid and similar assessment shall be initiated for the next ranked bidder identified as ALB.

1.30.6 AEGCL reserves the right to accept or reject any variation or deviation. Variations, deviations, and other factors which are in excess of the requirements of the bidding documents or otherwise result in the accrual of unsolicited benefits to AEGCL shall not be taken into account in bid evaluation.

**1.31.0 AWARD**

1.31.1 AEGCL will award the Contract to the bidder whose bid has been determined to be substantially responsive to the bidding documents provided that such bidder has been determined to be qualified in accordance with the provisions of the Bid.

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

1.32.1 Notwithstanding Clause 1.31.0, AEGCL reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids, at any time prior to award of Contract, without thereby incurring any liability to the affected bidder or bidders or any obligation to inform the affected bidder or bidders of the grounds for AEGCL's action. AEGCL is not bound to accept the offer of the lowest bidder.

**1.33.0 NOTIFICATION OF AWARD**

1.33.1 Prior to expiration of the period of bid validity prescribed by AEGCL, AEGCL will notify the successful bidder by fax, confirmed by letter, that its bid has been accepted. This letter (hereinafter and in the Conditions of Contract called the "Letter of Acceptance") shall name the sum which AEGCL will pay the Contractor in consideration of the execution, completion and maintenance of the Works by the Contractor as prescribed by the Contract (hereinafter and in the Conditions of Contract called "the Contract Price").

1.33.2 The notification of award will constitute the formation of the Contract.

**1.34.0 SIGNING OF CONTRACT AGREEMENT**

1.34.1 At the same time that it notifies the successful bidder that its bid has been accepted, AEGCL will send the bidder the Form of Contract Agreement incorporating all agreements between the parties.

1.34.2 Within **15 (fifteen) days** of receipt of the Form of Agreement, the successful bidder shall sign the Form and return it to AEGCL.

**1.35.0 WARRANTY**

1.35.1 The contractor warrants that all goods are new, unused and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract. The term period of warranty shall mean the period of 18 months from the date of the materials are received at site in good and acceptable condition. If during the period of warranty, any defect is found, the Contractor shall rectify all defects in design, materials and workmanship that may develop under normal use of the equipment upon written notice from the Purchaser who shall indicate in what respects the equipment is faulty. The rectification / free replacement must be carried out within a reasonable time period and at free of cost.

1.35.2 In the event of any emergency, where in the judgment of AEGCL, delay would cause serious loss or damages, repairs or adjustment may be made by the engineer or a third party chosen by the engineer without advance notice to the contractor and the cost of such work shall be paid by the contractor. In the event such action is taken by the engineer, the contractor will be notified promptly and he shall assist wherever possible in making necessary corrections. This shall not relieve the contractor of his liabilities under the terms and conditions of the contract.

1.35.3 If it becomes necessary for the contractor to replace or renew any defective portions of the works, the provision of this clause shall apply to portion of the works so replaced or renewed until the expiry of twelve (12) months from the date of such replacement or renewal.

1.35.4 The repaired or new parts will be furnished and erected free of cost by the contractor. If any repair is carried out on his behalf at the site, the contractor shall bear the cost of such repairs.

1.35.5 The acceptance of the equipment by the Employer shall in no way relieve the contractor of his obligation under this clause.

1.35.6 In the case of those defective parts, which are not repairable at site but are essential for the commercial operation of the equipment, the contractor and the engineer shall mutually agree to a programme of replacement or renewal, which will minimize interruption to the maximum extent in the operation of the equipment.

**1.36.0 PERFORMANCE SECURITY (Contract Performance Guarantee)**

- 1.36.1 As a Contract Performance Security, the successful Bidder, to whom the work is awarded, shall be required to furnish a Performance Guarantee from a Nationalized Bank, in the form attached with the Bidding Document (Section –3) in favour of the AEGCL. The guarantee amount shall be equal to ten percent (10%) of the Contract Price and it shall guarantee the faithful performance of the contract in accordance with the terms and conditions specified in these documents and specifications. The guarantee shall be valid up to 90 (ninety) days after the end of Warranty Period.
- 1.36.2 In case the bidder fails to submit the Performance Security in the form of Bank Guarantee, an amount equivalent to 10% of the Contract Price shall be retained as Security Deposits which shall be retained up to 90 (ninety) days after the end of Warranty Period
- 1.36.3 The performance guarantee shall cover additionally the following guarantees to the owner:
- a) The successful Bidder guarantees the successful and satisfactory operation of the equipment furnished and erected under the contract, as per the specifications and documents.
  - b) The successful Bidder further guarantees that the equipment/material provided and installed by him shall be free from all defects in design, material and workmanship and shall upon written notice from the Owner fully remedy must be guaranteed.
- 1.36.4. The Contract performance Guarantee will be returned to the Contractor without any interest at the end of warranty period and written request from the contractor.

**1.37.0 TERMS OF PAYMENT**

The terms of payment for the supply and erection work shall be as follows

- i. No advance payment shall be made in this contract.
- ii. No claim for interest shall be entertained by AEGCL
- iii. The price is firm and no price variation shall be applicable.
- iv. Maximum 2(two) Nos. of progressive Invoice/ Bill would be entertained during work.
- v. The 1st Progressive Invoice/Bill would be entertained for 80% of the total work value on completion of the supply work and acceptance of materials in full and good condition.
- vi. Remaining 20% of total work value would be made after completion of erection, testing and commissioning works.
- vii. Final bill must contain the original site register.
- viii. Payment shall be released subject to receipt of specific fund. The Bidder / Firm will have to be submitted the following Net Banking details.
  - a) Banker's Name & Branch
  - b) Account No
  - c) Banker's address
  - d) Banker's IFSC Code
  - e) Banker's RTGS Code

**1.38.0 CORRUPT OR FRAUDULENT PRACTICES**

- 1.38.1 It is required that bidders/suppliers/contractors observe the highest standard of ethics during the procurement and execution of the contracts. In Pursuance of this Clause AEGCL;
- (a) defines, for the purposes of this provision, the terms set forth below as follows:
    - (i) "corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
    - (ii) "fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;
  - (b) will reject a proposal for award if it determines that the bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
  - (c) will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract by AEGCL if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

**1.39.0 PENALTY FOR DELAYED EXECUTION**

In the event of delay in completing the work extending beyond the date of completion or beyond the extended date, if any, permitted by the Board, the contractor shall pay as agreed liquidated damage and not as a penalty a sum equal to 1% of the contract price under this contract for each week of delay or part thereof subject to a maximum of 10% of the contract price.

**1.40.0 FORCE MAJEURE**

Force Majeure shall be considered as any circumstances beyond the reasonable control of the party claiming relief, including but not limited to strikes lockout, civil commotion, riot, insurrection, hostilities, war, fire, flood, earthquake, delay in delivery of equipments or part thereof by AEGCL, would entitle contractor to extension of time.

**1.41.0 SETTLEMENT OF THE DISPUTE & ARBITRATION**

Any dispute arising out of the contract will first be discussed and settled bilaterally between the Assam Electricity Grid Corporation Limited and firms/ contractors. In case, the dispute cannot be settled bilaterally, it will be referred to arbitration by an arbitrator to be appointed by the AEGCL, The contractor shall not stop the work during settlement of any arbitration case. All disputes arising out of the agreement so made shall be subjected to the jurisdiction of district court of Kamrup District.

## SECTION-2

### PURCHASER'S REQUIREMENTS

#### 2.1.0 SCOPE OF WORK:

- 2.1.1 This section of the specification deals with the technical information & criteria for "Design, manufacture, supply including erection, testing & commissioning of various materials such as ACSR Zebra conductor, 90KN and 70 KN Disc insulators and insulator assembly, clamps for 132kV Bus augmentation at 132kV Baghja GSS as per bid specification and price schedule". The Contractor's proposal shall be based on the use of materials complying fully with the requirements specified herein.: The work involves design, engineering, manufacture, assembly, inspection, testing at the manufacturer's works before dispatch, packing, supply, including insurance during transit, delivery at site of various equipment and materials including substation steel structures as specified in subsequent Clauses and Sections.
- 2.1.2 It is not the intent to specify completely herein all details of design and construction of the equipment and accessories. However, the equipment and accessories shall conform in all respects to high standards of engineering, design and workmanship and be capable of performing in continuous operation up to the bidder's guarantees in a manner acceptable to the Purchaser. The Purchaser will interpret the meaning of drawings and specifications and shall be entitled to reject any work or material, which in his judgment is not in full accordance therewith.
- 2.1.3 The various items of supply are described very briefly in the schedule of Bid Form, Prices & Other Schedules and annexure. The various items as defined in these schedules shall be read in conjunction with the corresponding section in the technical specifications including amendments and, additions if any.

#### 2.2.0 CONTRACTOR TO INFORM HIMSELF FULLY

- 2.2.1 The contractor should admit that he has examined the general condition of contract, specifications and schedule and has satisfied as to all the conditions and circumstances affecting the contract prices and fixed his price according to his own views on these matters and acknowledge that no additional allowances except as otherwise provided therein will be levied. The purchaser shall not be responsible for any misunderstanding or incorrect information obtained by the contractor other than information given to the contractor in writing by the purchaser.

#### 2.3.0 STANDARDS

- 2.3.1 The equipment covered under this bidding document shall, unless otherwise stated be designed, constructed and tested in accordance with the latest revisions of relevant Indian Standards and shall conform to the regulations of local statutory authorities. In case of any conflict between the standards and this specification, this specification shall govern.
- 2.3.2 Equipment conforming to other international or authoritative Standards which ensure equivalent or better performance than that specified under Clause 3.6.0 above shall also be accepted. In that case relevant extracts of the same shall be forwarded with the bid.

#### 2.4.0 ENGINEERING DATA

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

#### 2.5.0 MATERIALS HANDLING AND STORAGE

- 2.5.1 All the supplies under the Contract as well as Employer supplied items (if any) arriving at site shall be promptly received, unloaded and transported and stored in the stores by the Contractor.
- 2.5.2 Contractor shall be responsible for examining all the shipment and notify the Employer immediately of any damage, shortage, discrepancy etc. for the purpose of Employer's information only. The Contractor shall submit to the Employer every week a report detailing all the receipts during the week. However, the Contractor shall be solely responsible for any shortages or damages in transit, handling and/or in storage and erection at site. Any demurrage, and other such charges claimed by the transporters, railways etc., shall be to the account of the Contractor.
- 2.5.3 The Contractor shall maintain an accurate and exhaustive record-detailing out the list of all items received by him for the purpose of erection and keep such record open for the inspection of the Employer.

- 2.5.4 All items shall be handled very carefully to prevent any damage or loss. The materials stored shall be properly protected to prevent damage. The materials from the store shall be moved to the actual location at the appropriate time so as to avoid damage of such materials at Site.
- 2.5.5 All the materials stored in the open or dusty location must be covered with suitable weather-proof and flameproof covering material wherever applicable.
- 2.5.6 The Contractor shall be responsible for making suitable indoor storage facilities, to store all items/materials, which require indoor storage.
- 2.5.7 The Contractor shall have total responsibility for all equipment and materials in his custody, stored, loose, semi-assembled and/or erected by him at site. The contractor shall make suitable security arrangements including employment of security personnel to ensure the protection of all materials, equipment and works from theft, fire, pilferage and any other damages and loss.

## 2.6.0 COMMISSIONING SPARES

- 2.6.1 It will be the responsibility of the Contractor to provide all commissioning spares required for initial operation till the Employer declares the equipment as ready for commissioning. All commissioning spares shall be deemed to be included in the scope of the Contract at no extra cost to the Employer.
- 2.6.2 These spares shall be received and stored by the Contractor at least 1 month prior to the schedule date of commencement of commissioning of the respective equipment and utilized as and when required. The unutilized spares and replaced parts, if any, at the end of successful completion of performance and guarantee test shall be the property of the Contractor and he will be allowed to take these parts back at his own cost with the permission of Employer's Representative.

## 2.7.0 TECHNICAL SPECIFICATION FOR DESIGN AND FABRICATION OF SUBSTATION STEEL STRUCTURES

### 2.7.1 SCOPE

This section covers the design parameters, specification for clamps & connectors, bolts & nuts, tower accessories etc suitable for 132kV ACSR conductors and as per Specification.

### 2.7.2 MATERIALS

- 2.7.2.1 **Clamps and connectors** shall conform to IS 2121 and 2486 unless otherwise mentioned hereunder.

Clamps and connectors shall be made of materials listed below:-

- i) For connecting Zebra : Aluminium alloy casting conforming to designation A 6 of IS 617
- ii) For connecting equipment : Bimetallic connectors made from aluminium alloy terminals made of copper casting conforming to designation A 6 of IS 617.
- iii) For connecting GI Shield wire : Malleable iron casting.
- iv) Expansion Connectors : Copper lamination to grade FRTP-2 of IS 191.
- v) Bolts, nuts, plain washers : Hot dip galvanised mild steel.  
and spring washers for items (i),(ii) and (iii).

### 2.7.2.2 Spacers

Suitable spacers for forming rigid bundles of two conductors (where specified) to keep suitable conductor spacing shall be provided at but not limited to the following locations:

- (i) At intervals not exceeding 4 meters between two bounds in case of strung bus bars or other strung conductors.
- (ii) At one meter interval in case of jumper connections.

No magnetic material shall be used in fabrication of spacers except for the GI bolts and nuts.

### 2.7.2.3 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

#### 2.7.2.4 **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.

#### 2.7.2.5 **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.

#### 2.7.2.6 **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.

#### 2.7.2.7 **Other materials**

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

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

#### 2.8.1 **SCOPE**

2.8.1.1 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.

2.8.1.2 Following are the list of documents constituting this package.

- i) Technical specification.
- ii) Technical data sheet.
- iii) Drawings of insulators

2.8.1.3 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.

2.8.1.4 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.

#### 2.8.2 **STANDARDS:**

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.	
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



### 2.8.3 PRINCIPAL PARAMETERS.

#### 2.8.3.1 DETAILS OF DISC INSULATORS:

2.8.3.1.1 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.

2.8.3.1.2 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 suspension	255 x 145	430	1x9/1x14 /-	70 KN/90 KN Antifog Insulator
4	Double suspension.	-do-	-do-	2x9/2x14 /-	70 KN/90 KN Antifog Disc Insulator

#### 2.8.3.2 SPECIFICATION DRAWINGS:

2.8.3.2.1 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.

#### 2.8.4.1 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.

#### 2.8.4.2 METAL PARTS:

##### 2.8.4.2.1 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.

##### 2.8.4.2.2 Security Clips:

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

##### 2.8.4.3 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.

#### **2.8.4.4 MATERIALS DESIGN AND WORKMANSHIP:**

##### **2.8.4.4.1 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.

##### **2.8.4.4.2 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.

##### **2.8.4.4.3 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.
- iii)

##### **2.8.4.4.4 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.

##### **2.8.4.4.5 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.

##### **2.8.4.4.6 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.).

##### **2.8.4.4.7 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

##### **2.8.4.5 BALL AND SOCKET DESIGNATION:**

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

#### 2.8.4.6 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	255 As per IS	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	145 As per IS	As per IS	As per IS

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

#### 2.8.4.7 GUARANTEED TECHNICAL PARTICULARS FOR ANTIFOG DISC INSULATORS

Sl. No.	DESCRIPTION	70 KN	90 KN
1	Manufacturer's name & Address		
2	Type of Insulator	Ball & Socket	Ball & socket
3	Size of ball & socket	16B	16B
4	Dimensions		
(a)	Disc diameter	255	255
(b)	Unit spacing	145	145
(c)	Creepage distance of the single insulator-mm	430	430
5	Electro-mechanical strength of single insulator - kN	70	90
6	Materials of shell	Porcelain	Porcelain
7	<b>Electrical value</b>		
7.1	Power frequency Withstand Voltage Disc		
	(a) Dry-kV (rms)	80	80
	(b) Wet-kV (rms)	45	45
7.2	Power frequency Flashover Voltage Disc		
	(a) Dry-kV (rms)	85	85
	(b) Wet-kV (rms)	50	50
7.3	Impulse Withstand Voltage Disc		
	1.2/50 micro second		
	(a) Positive – kV(Peak)	125	125
	(b) Negative– kV(Peak)	125	125
7.4	Impulse Flashover Voltage Disc		
	1.2/50 micro second		
	(a) Positive – kV(Peak)	135	135
	(b) Negative– kV(Peak)	130	130

**2.8.4.8 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.

**2.8.4.9 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.

**2.8.5.0 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.

**2.8.6.0 FREEDOM FROM DEFECTS:**

Insulators shall have none of the following defects:

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

**2.8.7.0 INSULATOR STRINGS:****2.8.7.1 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.

**2.8.7.2 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 2.8.3.1.2.

**2.8.7.3 STRING CHARACTERISTICS**

The characteristics of the complete string shall be as follows:

Sl. No.	Description	Suspension.	Tension.
		132KV	132KV
I	Switching surge withstand voltage (dry& wet) KVPeak	-	-
II	Lighting impulse withstand voltage (dry) KV Peak.	650	650
III	Power frequency without voltage (wet) KV r.m.s.	275	275
IV.	Corona extinction voltage level KV rms	-	-

**2.8.7.4 INSULATOR STRING HARDWARE****2.8.7.4.1 HARDWARE**

1. Each insulator string assembly shall generally include the following hardware:
2. Anchor shackle for attachment of suspension string assembly to the tower hanger and tension string assembly to the tower strain plate. Suitable top and bottom yoke assemblies with the arrangement of fixing a set of arcing horns.
  - a) Set of arcing horns
  - b) Suspension or tension clamp
  - c) Bolts, nuts, washers, split pins etc.
  - d) Other fittings necessary to make the strings complete such as ball clevis, socket clevis, chain links etc.
3. The tenderer shall be responsible and satisfy himself that all the hardware included in strings are entirely suitable for the conductor offered.

**2.8.7.4.2 SUSPENSION CLAMP**

1. The suspension clamps shall be made of malleable iron or aluminium alloy, hot dip galvanised and shall be suitable to accommodate the conductor together with one set of preformed armour rods. Suitable sheet aluminium liners shall be provided. The suspension clamps shall be designed to avoid any possibility of deforming or damaging the conductor. The lips shall be

rounded off and the seating and the bell mouths shall be smooth to avoid corona and radio interference noises. The suspension clamps shall be suitable to carry the bottom part of the arcing horn and to receive the fittings of the insulator string.

2. The suspension clamps shall be such that the conductor should not slip at a load of 25% of the breaking load of the conductor. The ultimate strength of the clamp for vertical load shall not be less than the failing load of the Disc Insulators.

#### 2.8.7.4.3 STRAIN CLAMP

1. The bolted strain clamps shall also be made of malleable iron or aluminium alloy; hot dip galvanised, lined with sheet aluminium liners and shall be suitable to accommodate the conductor with necessary binding tapes etc. The lips shall be rounded off carefully and conductor seating and the ball mouth shall be smooth to avoid corona and radio interference noises. Suitable attachment for receiving one side of arcing horns and for connecting to the insulator strings shall be provided.
2. The strain clamps shall be such that the conductor should not slip at a load of 90% of the breaking load of the conductor. The ultimate strength of the clamp for horizontal load shall not be less than the ultimate strength of the conductor

#### 2.8.7.4.4 ARCING HORNS:

1. Arcing horns of approved size and dimensions shall be provided for every string of insulators. The performance data for arcing horns to be supplied shall be made available to the Employer.

#### 2.8.7.4.5 OTHER INSULATOR STRING HARDWARE:

1. The strength of other string hardware namely anchor shackle, yoke plates, socket-clevis etc. shall be co-ordinated with insulator disc strength.

### 2.8.8 Arcing Horn for EHV Strings

2.8.8.1 The arcing horn shall be provided on tower side of the hardware fittings. The same shall be either ball-ended rod type or tubular type.

2.8.8.2 The spark gap shall be so adjusted to ensure effective operation under actual field conditions.

### 2.8.9 Turnbuckle

2.8.9.1 The turn buckle is to be provided with single tension hardware fitting. The threads shall be of sufficient strength to remain unaffected under the specified tensile load.

2.8.9.2 The maximum length of the turn buckle from the connecting part of the rest of the hardware fittings shall be 380 mm. The details of the minimum and maximum adjustment possible shall be clearly indicated in the drawing submitted with the bid. An adjustment of 135 mm minimum shall be possible with turnbuckle.

### 2.8.10 Suspension Assembly

2.8.10.1 The suspension assembly shall be designed, manufactured and finished to give it a suitable shape, so as to avoid any possibility of hammering between suspension assembly and conductor due to vibration. The suspension assembly shall be smooth and without any cuts, grooves, abrasions, projections, ridges or excrescence which might damage the conductor.

2.8.10.2 The suspension assembly/clamp shall be so designed so that it minimises the static and dynamic stress developed in the conductor under various loading conditions as well as during wind induced conductor vibrations. It shall also withstand power arcs and have required level of Corona/AIV performance.

### 2.8.11 Dead End Assembly

2.8.11.1 The dead end assembly shall be suitable for Conductor as detailed in the document.

2.8.11.2 The dead end assembly shall be compression type with provision for comprising the jumper terminal at one end. The angle of the jumper terminal to be mounted should be 300 with respect to the vertical line. The area of bearing surface on all the connections shall be sufficient to ensure positive electrical and mechanical contact. The resistance of the clamp when compressed on Conductor shall not be more than 75% of the resistance of equivalent length of Conductor.

2.8.11.3 The assembly shall not permit slipping of, damage to, or failure of the complete conductor or any part thereof at a load less than 95% of the ultimate tensile strength of the conductor.

## 2.9.0 TECHNICAL SPECIFICATIONS FOR ACSR ZEBRA CONDUCTOR

### 2.9.1 Standards :-

The ACSR Zebra conductors shall comply in all respects to the clauses of this specification as indicated below & with the Indian Standard Specification, International standards with latest amendments. The conductors should be of reputed make only.

Sl no.	Particulars	Standard
1.	Standard for Conductor	IS: 398(Part-II):1996
2.	Standard for Drum	IS: 1778:1989
3.	E.C. Grade Aluminium Rod- a) Standard b) Composition	IS: 5458:1997 Purity 99.6 (Min)
4.	High Tensile Galvanized Steel Wire - a) Standard	IS: 4826: 1979
5.	Galvanizing - a) Standard b) Purity of Zinc c) Process of galvanizing	IS: 4826: 1979 99.95 % (Min) Hot Dip
6.	Diameter of conductor (overall)	28.62 mm
7.	Diameter of Aluminium strands (each) a) Nominal b) Maximum c) Minimum	3.18 mm 3.21 mm 3.15 mm
8.	Diameter of Steel strands (each) a) Nominal b) Maximum c) Minimum	3.18 mm 3.24 mm 3.12 mm
9.	Overall cross-section	484 mm <sup>2</sup>
10.	Continuous rating in still air at 40°C ambient temperature	800 A

### 2.9.2 Materials :-

The material offered shall be of best quality and workmanship. The steel Cored Aluminum conductor strands will consist of hard-drawn aluminum wire manufactured from 99.5% pure electrolytic aluminum rods of E.C. Grade. The steel wire shall be made from materials produced either by the acid or basic open hearth process or by electric process. No steel wire drawn from pressmen process shall be used. The steel wire shall not contain sulphur or phosphorus exceeding 0.05 percent, and the total of sulphur and phosphorus shall not exceed 0.085 percent. 3.2 The steel wires shall be evenly and uniformly coated with zinc complying with Indian Standard 4826-1979 specification for galvanized coatings on round steel wires.

## 2.10.0 FINAL CHECKING TESTING AND COMMISSIONING:

2.10.1 After completion of the works, final checking of the line shall be done by the Contractor to ensure that all the foundation works, tower erection, and stringing have been done strictly in accordance with the specification and as approved by the purchaser. All the works shall be thoroughly inspected keeping in view the following main points:

- Sufficient back-filled earth is lying over each foundation pit and it is adequately compacted.
- Concrete chimneys and their copings are in good finely shaped conditions.
- All the tower members are correctly used, strictly according to approved drawing and are free from defects or damages, whatsoever.
- All bolts are properly tightened and punched/tack welded as per this specification.
- The stringing of the Conductors and Ground-wire has been done as per the approved sag and tension charts and desired clearances are clearly available.

- (f) All Conductor and Ground-wire Accessories are properly installed.
- (g) All other requirements to complete the work like fixing of Danger Plate, Phase Plate, Number Plate, Anti-climbing devices, Aviation Signal (wherever required) etc. are properly installed and the painting has been done wherever required as per Aviation Rules.
- (h) It should be ensured that revetment is provided, wherever required.
- (i) The line insulation is tested by the Contractor by providing his own equipment labour etc. to the satisfaction of the purchaser to ascertain the insulation condition of the line.
- (j) Conductor continuity test is carried out to verify that each Conductor of the overhead line is properly connected electrically also. The line may be charged at a low value of Power Frequency Voltage for the purpose of testing.

**SECTION – 3**

**BID SUBMISSION SHEET, BID FORMS AND SCHEDULES**

**1. Bid Submission Sheet**

**(To be submitted in Bidder's Letterhead)**

Name of contract:

To,

The Deputy General Manager,  
Lower Assam, T&T Circle, AEGCL,  
Narengi.Guwahati-26

Sir:

We have examined the General Conditions of Contract, Technical Specification, Schedules, and Addenda Nos \_\_\_\_\_(if any). We have understood and checked these documents and have not found any errors in them. We accordingly offer to execute and complete the said Works and remedy any defects fit for purpose in conformity with these documents and the enclosed Proposal (Price Offer)

We accept your suggestions for the appointment of the Dispute Adjudication Board, as set out in the Bidding Document.

We agree to abide by this Bid until \_\_\_\_\_ and it shall remain binding upon us and may be accepted at any time before that date.

If our bid is accepted, we will provide the specified performance security, commence the Works as soon as reasonably possible after receiving the notice to commence, and complete the Works in accordance with the above-named documents within the time stated in the Bidding Document.

Unless and until a formal Agreement is prepared and executed this Bid, together with your written acceptance thereof, shall constitute a binding contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

Commissions or gratuities, if any, paid or to be paid by us to agents relating to this Bid, and to contract execution if we are awarded the contract, are listed below:

Yours faithfully

Signature \_\_\_\_\_ in the capacity of \_\_\_\_\_ duly authorized to sign bids for and on behalf of

\_\_\_\_\_

Address

\_\_\_\_\_  
\_\_\_\_\_



2. Form-BG

Form of Bid Security (Bank Guarantee)

WHEREAS, \_\_\_\_\_ [Name of Bidder] (hereinafter called "the Bidder") has submitted his bid dated \_\_\_\_\_ [Date] for the construction of \_\_\_\_\_ [Name of Contract] (hereinafter called "the Bid").

KNOW ALL MEN by these presents that We \_\_\_\_\_ [Name of Bank] of \_\_\_\_\_ [Name of Country] having our registered office at \_\_\_\_\_ (hereinafter called "the Bank") are bound unto \_\_\_\_\_ [Name of Employer] (hereinafter called "the Employer") in the sum of \_\_\_\_\_ for which payment will and truly to be made to the said Employer the Bank binds himself, his successors and assigns by these presents. SEALED with the Common Seal of the said Bank this \_\_\_\_ day of \_\_\_\_\_ 20\_\_.

THE CONDITIONS of this obligation are:

- (1) If the bidder withdraws his Bid during the period of bid validity specified in the Form of Bid:  
Or
- (2) If the Bidder refuses to accept the correction of errors in his Bid;  
Or
- (3) if the Bidder, having been notified of the acceptance of his Bid by the Employer during the period of Bid validity;
  - (a) fails or refuses to execute the Form of Contract Agreement in accordance with the Instructions to Bidders, if required; or
  - (b) fails or refuses to furnish the Performance Security, in accordance with the Instructions to Bidders;

we undertake to pay to the Employer up to the above amount upon receipt of its first written demand, without the Employer having to substantiate its demand, provided that in its demand the Employer will note that the amount claimed by it is due to it owing to the occurrence of one or all of the three conditions, specifying the occurred condition or conditions.

This Guarantee will remain in force up to and including the date 180 days after the deadline for submission of bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE \_\_\_\_\_ SIGNATURE OF THE BANK \_\_\_\_\_

WITNESS \_\_\_\_\_ SEAL \_\_\_\_\_

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(Signature, Name, and Address)

3. Form-MA

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

Bid No.:

To,  
The Deputy General Manager,  
Lower Assam, T&T Circle, AEGCL,  
Narengi, Guwahati-26

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 2.9.0** of the Special Conditions of Contract, for the above specified Goods supporting the Supply of specified Goods and fulfilling the Related Services by the Bidder against this Bidding Documents, and duly authorize said Bidder to act on our behalf in fulfilling these guarantee and warranty obligations. We also hereby declare that, we will furnish the Performance Guarantee in accordance with **SCC Clause 2.6.0**.

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

**4. Guarantee Declaration**

We declare that the ratings, specifications and performance figures of the various plants and equipments /material furnished by us in the Bid are guaranteed. We further declare that in the event of any deficiencies in meeting the guarantees in respect of the characteristics mentioned in Guaranteed Technical Particulars, of Technical Bid as established after conducting the factory test, you may at your discretion, reject or accept the equipment/material after assessing the liquidated damages as specified in relevant clause of Bid Document.

Date: (Signature).....  
Place: (Printed Name).....  
(Designation).....  
(Common Seal).....