



CENTRAL ELECTRICITY SUPPLY UTILITY OF ODISHA

**OFFICE OF THE SUPERINTENDING ENGINEER (ELECT.)
ELECTRICAL CIRCLE, DHENKANAL, CESU**

**TENDER SPECIFICATION NO.01/2020-21
CESU/SEEC-DKL/DEPOSIT SCHEME/2019-20**

TURNKEY CONTRACT (SUPPLY & ERECTION)

FOR

**STRENGTHENING OF 33KV ELECTRICAL INFRASTRUCTURE IN
ELEPHANT MOVEMENT AREA FROM RENGALI TO KANIHA UNDER
KANIHA & RENGALI ELECTRICAL SECTION OF T.E.D, CHAINPAL.**



CENTRAL ELECTRICITY SUPPLY UTILITY OF ODISHA
OFFICE OF THE SUPERINTENDING ENGINEER (ELECT.)

ELECTRICAL CIRCLE: DHENKANAL, COLLEGE BYPASS CHHAK, NH-55, DHENKANAL

Email-sedkl@cescoorissa.com

TENDER CALL NOTICE NO.01/2020-21

For and on behalf of CESU, the undersigned invites sealed bids in two part bidding system from reputed firms who comply with the terms and conditions as per the tender specifications for execution of the following works on Turnkey basis.

Brief Description of Work	Package / Electrical Section	Estimated Cost (Rs.)	Earnest Money Deposit (Rs.)	Last date & time for submission of bid	Date and time of opening of bid	Non refundable Cost of Bid document (Rs.)
1	2	3	4	5	6	7
Interposing of Poles for strengthening of 33KV over head line from Rengali to Kaniha at different locations in elephant movement area (i.e. from Boudabeda to Kaniha 33/11KV Primary Sub-station) under Kaniha Electrical section.	Package-A/ Kaniha	23,12,587.00	23,126.00	12.30 P.M of 10.06.2020	3.30 P.M of 10.06.2020	6,000.00 + 12% GST (Irrespective of no of package)
Interposing of Poles for strengthening of 33KV over head line between Rengali to Kaniha at different locations in elephant movement area (i.e. from Rengali Grid to Boudabeda) under Rengali Electrical section.	Package-B/ Rengali	27,64,118.00	27,641.00			6,000.00 + 12% GST (Irrespective of no of package)

Bidder may quote for any one package or for multiple packages. Bidder must quote for the entire quantum of works specified under each package.

Date of Downloading of tender documents : **26.05.2020**

Pre-bid meeting will be held on **01.06.2020** at 11.30 A.M at the office of the G.M(Elect.), Electrical Circle, Dhenkanal.

For details please visit our web site: www.cesoorissa.com/ www.cesuodisha.com on or after **26.05.2020**

The prospective bidders are requested to follow the above CESU website time to time for any Clarification/ Corrigendum/ Addendum against the referred Tender.

The authority reserves the right to accept or reject any or whole of the offers without assigning any reason thereof.

S/d
Superintending Engineer(Elect.)
Electrical Circle, Dhenkanal



SECTION - I

INFORMATION TO BIDDERS (IFB) Tender Notification:

1.0 CESU invites sealed tenders from reputed Electrical Contractors with required HT license, either in individual capacity or as part of a joint venture agreement /consortium for interposing of Poles under 33KV OH line from Rengali to Kaniha for strengthening of 33KV OH line at different locations of Kaniha & Rengali Electrical Section of T.E.D, Chainpal.

The bidder must fulfill all the qualification requirements as specified in clause 2.0 stated below. The sealed envelopes shall be duly super scribed as **“TENDER NOTICE No: 01/2020-21 and due date of opening Dtd: 10.06.2020 at 3.30PM.** The bidders may offer for one or combination of packages, but the bidders have to submit EMD separately for each package offered for.

Brief Description of Work	Package / Electrical Section	Estimated Cost (Rs.)	Earnest Money Deposit (Rs.)	Last date & time for submission of bid	Date and time of opening of bid	Non refundable Cost of Bid document (Rs.)
1	2	3	4	5	6	7
Interposing of Poles for strengthening of 33KV over head line from Rengali to Kaniha at different locations in elephant movement area (i.e. from Boudabeda to Kaniha 33/11KV Primary Sub-station) under Kaniha Electrical section.	Package-A/ Kaniha	23,12,587.00	23,126.00	12.30 P.M of 10.06.2020	3.30 P.M of 10.06.2020	6,000.00 + 12% GST (Irrespective of no of package)
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2.00 Bidders are to be considered as eligible for the bid should meet the following qualifications;

- a) Bidder may quote for any one package or for multiple packages. Bidder must quote for the entire quantum of works specified under each package.
- b) The **minimum average annual turnover** of the bidder in the last three financial years proceeding to the year of tender notification should be equal or more than the tender estimated value of that package quoted by the bidder. However, if the bidder is applying for multiple packages, then the minimum average annual turnover should be equal to or more than the total estimated cost of all the packages taken together. The bidder shall furnish audited accounts for the last three years i.e. **FY 2017-2018, FY 2018-2019, FY 2019-2020**, evidencing their turnover requirement.
 - c) Bidder shall be financially sound and stable having liquid assets **not less than one fifth of total estimated cost of each package** for which he has submitted the bid. Bidder shall furnish the documentary evidence to establish the financial soundness. **So, to access this, Bidders are required to furnish liquid assets as on 30.04.2020 from the concerned in their letter head.**
 - d) Two or more like minded contractor(s) and/or manufacturer(s) of electrical items, and /or firms having above work experience which are under scope of supply & Erection of the contractor as per this tender specification, may form a joint venture/ consortium, may Tie up and make agreement amongst themselves and apply against this tender specification, provided they qualify the criteria. However, the tie up partner showing their experience should have valid HT electrical license. The sample format of joint venture / consortium agreement is enclosed at Section – IV in this tender specification as Annexure - II.
 - e) If the bidder is a joint venture / consortium, they shall comply with the qualifying criteria as follows:
 - i. At least one partner shall have the stipulated previous works experience for similar quantity of completed works as stated in the qualifying criteria with valid electrical HT license.
 - ii. If the work experience of one partner is not meeting the entire qualifying criteria, the item wise field experience of the other partner(s) specified in the scope of work shall be added for qualifying the bid in total. However item wise fractional work experience shall not be summed up for consideration for any single item of the scope.
 - iii. The partner (lead or JV partner) showing their experience should have valid HT electrical license.
 - iv. However, the annual turnover and liquidity figures of all partners shall be added together to determine the qualifying criterion case of the joint venture / consortium.
 - f) One of the partners shall be nominated as Lead Partner and the lead partner shall be authorized to incur liabilities and receive instructions for and on

behalf of all partners of the joint venture / consortium and entire execution of the contract including receipt of payments shall be done exclusively through the lead partner. This authorization shall be evidenced by submitting by a Power of Attorney signed by legally authorized signatories of all partners.

- g) All partners of joint venture / consortium shall be liable jointly and severally for the execution of contract in accordance with the contract terms and a copy of the agreement entered into by the joint venture / consortium partners having such a provision shall be submitted with the Bid. A statement to this effect shall be included in the authorization mentioned as above as well as in the Bid form and in Contract form (in case of a successful bid).
- h) In addition to above the bidder should submit the following documents in Part-I bid as qualifying terms.
- i. Valid electrical (HT) license for electrical works.
 - ii. GST Registration Certificate
 - iii. PAN No.
 - iv. EPF/ESI
 - v. Company Registration Particulars
 - vi. Existing Labour License

CESU reserves the right to waive minor deviation, if they do not materially affect the capacity of the bidder to perform the contract.

3.0 Bids specification each documents can be obtained from the office of the undersigned on payment of **6,000/-** towards non-refundable cost of bid documents plus 12% GST (Total **6,720/- each**) through Bank D.D drawn in favour of **GENERAL MANAGER (ELECTRICAL),CESU, ELECTRICAL CIRCLE,DHENKANAL** payable at Dhenkanal. If one bidder wants to participate for the 2Nos. of works, then he should submit separate DDs of **6,720/- each**.

4.0 The Bids shall be submitted in the office of the undersigned on all office working days **up to 12.30 PM of Date 10.06.2020**. In the event of the date of opening is a holiday, the next working day shall be treated as the date of opening.

5.0 The price bid will be opened on dt. **10.06.2020** at **3.30 PM** as indicated above, in the presence of the authorized representatives of the Bidders. Bidders shall depute only one representative to attend tender opening if they wish to be represented.

The undersigned reserves the right to reject any or all tenders if the situations so warrants.

6.0 All correspondence with regard to the above shall be made to the following address:

GENERAL MANAGER (ELECTRICAL)
ELECTRICALCIRCLE DHENKANAL, CESU
At: COLLEGE BYPASS CHHAKA
P.O/DIST – DHENKANAL
PIN-759001
PHONE – 06762 – 243353
Email-sedkl@cescoorissa.com

**Sd/-
Superintending Engineer (Elect.)
Electrical Circle, Dhenkanal**



SECTION - II

GENERAL CONDITIONS OF CONTRACT (GCC)

1.0 GENERAL: -

CESU, hereinafter referred to as the “Owner” are desirous for interposing of Pole under 33KV OH line from Rengali to Kaniha at different locations of Kaniha & Rengali Electrical Section of T.E.D, Chainpal.

The Bidder shall ensure to follow the instructions given here under failing which the tender shall be liable for rejection.

2.0 SCOPE OF WORK: -

Name of work	Scope of work
<p>PACKAGE-A Interposing of Pole for strengthening of 33KV over head line from Rengali to Kaniha at locations in elephant movement area (i.e. from Boudabeda to Kaniha 33/11KV Primary Sub-station) under Kaniha Electrical section.</p>	<p>a) Erection of interposing pole using 10 Mtr. long , 150X150mm RS Joist = 47 Nos. b) Fitting of riser = 145 Nos. 2.5 mtr. each</p>
<p>PACKAGE-B Interposing of Pole for strengthening of 33KV over head line between Rengali to Kaniha at different locations in elephant movement area (i.e. from Rengali Grid to Boudabeda) under Rengali Electrical section.</p>	<p>a) Erection of interposing pole using 10 Mtr. long , 150X150mm RS Joist = 61 Nos. b) Fitting of riser = 134 Nos. 2.5 mtr. each</p>

The scope covers supply and installation of all materials & equipments to complete the works including the following,

- i. Complete manufacture, including shop testing & supply of materials from the approved vendor (materials which are to be supplied by the bidder).
- ii. Providing Engineering drawing, data, operational manual, etc for the Purchaser’s approval.
- iii. Packing and transportation from the manufacturer’s works to the site.
- iv. Receipt, storage, preservation and conservation of equipment at the site.
- v. Pre-assembly, if any, erection testing and commissioning of all the equipment;
- vi. Reliability tests and performance and guarantee tests on completion of commissioning;
- vii. Loading, unloading, dismantling of existing work and transportation as required.
- viii. Erection of lines of specified voltage.
- ix. Testing, Commissioning of lines / installations
- x. Storing before erection
- xi. Getting the lines inspected by Electrical Inspector after completion of work.
- xii. Transportation and transit insurance of all free issue materials to be supplied from Purchaser’s nearest stores to site and as well as all other required materials (under the scope of supply by bidder) from supplier’s premises to work site, construction of new electrical / civil structures, etc.
- xiii. **Any other works not mentioned in the paper shall also be included in the scope of works as per the requirement by the work for completion.**

3.0 DEFINITION OF TERMS

- (i) The ‘Contract ’means the agreement entered into between the Owner and the

Contractor as per the Contract Agreement signed by the parties, including all attachments and appendices there to and all documents incorporated by reference therein.

- (ii) 'Owner' shall mean CESU and shall include its legal representatives, successors and assigns.
- (iii) Contractor' shall mean the Bidder whose bid will be accepted by the Owner for the award of the Works and shall include such successful Bidder's legal representatives, successors and permitted assigns.
- (iv) Sub-Contractor' shall mean the person named in the Contract for any part of the works or any person to whom any part of the Contract has been sublet by the contractor with the consent in writing of the Engineer and will include the legal representatives, successors and permitted assigns of such person.
- (v) Engineer in Charge' shall mean the officer appointed in writing by the Purchaser to act as Engineer from time to time for the purpose of the Contract.
- (vi) 'Specifications' shall mean the specifications and Bidding Document forming a part of the Contract and such other schedules and drawings as may be mutually agreed upon.
- (vii) The term 'OSM' shall mean Owner Supply Material i.e. which are available at the departmental store.
- (viii) 'Site' shall mean and include the land and other places on, into or through which the works and the related facilities are to be erected or installed and any adjacent land, paths, street or reservoir which may be allocated or used by the Purchaser or Contractor in the performance of the Contract.
- (ix) Inspector' shall mean the Owner or any person nominated by the Owner from time to time, to inspect the equipment; stores or Works under the Contract and/or the duly authorized representative of the Owner.
- (x) Notice of Award of Contract'/ 'Letter of Award' shall mean the official notice issued by the Owner notifying the Contractor that his bid has been accepted.
- (xi) Date of Contract' shall mean the date on which notice of Award of Contract/ Letter of Award has been issued.
- (xii) Performance and Guarantee Tests', shall mean all operational checks and tests required to determine and demonstrate capacity, efficiency, and operating characteristics as specified in the Contract Documents.
- (xiii) The term 'Final Acceptance'/ 'Taking Over' shall mean the Purchaser's written acceptance of the works performed under the Contract, after successful commissioning/ completion of Performance and Guarantee Tests, as specified in the accompanying Technical Specifications or otherwise agreed in the contract.
- (xiv) Commercial Operation' shall mean the condition of operation in which the complete equipment covered under the Contract is officially declared by the Purchaser to be available for continuous operation at different loads up to and including rated capacity. Such declaration by the Purchaser, however, shall not relieve or prejudice the Contractor of any of his obligations under the Contract.
- (xv) Words imparting 'Person' shall include firms, companies, corporations and associations or bodies of individuals, whether incorporated or not.
- (xvi) Terms and expressions not herein defined shall have the same meaning as are assigned to them in the Indian Sale of goods Act (1930), failing that in

the Indian Contract Act (1872) and failing that in the General Clauses Act (1897) including amendments thereof, if any.

- (xvii) In addition to the above the following definition shall also apply
- a) All equipment and materials' to be supplied shall also mean 'Goods'
 - b) Constructed' shall also mean erected and installed.
 - c) Contract Performance Guarantee' shall also mean 'Contract Performance Security'.

4.0 SUBMISSION OF TENDER: -

4.01 Sealed tenders, complete in all respects in the manner hereinafter specified are to be submitted in the OFFICE OF **SUPERINTENDING ENGINEER (ELECTRICAL) ELECTRICAL CIRCLE, DHENKANAL** on or before the date and time specified in the notice inviting the tenders.

4.02 The tenders are required to be submitted in Two Parts each in separate double sealed covers.

- Part - I: Super-scribed as "Technical and commercial bid" shall contain EMD, Tender paper Cost for Bid Documents and Techno commercial documents.
- Part - II: Super-scribed as "Price Bid". The Part - II should contain only Price bid.
- Further, **as there are 2Nos. of package in this Tendering process, the bidder shall specify in the cover of the Envelope that for which package he has applied for i.e. whether it is for package-I or package-II.**

4.03 Fax and Telegraphic tenders shall not be accepted.

4.04 Receipt of bids/ revised bids after the cut off time and date as specified in the Tender Notice shall not be permitted and such bids shall be rejected outright. The Owner shall not be responsible for any delay in transit in post / courier etc. in this regard.

5.0 VALIDITY:-

The offer shall be valid for a period not less than 180 days from the date of bid opening.

6.0 PRICE: -

Bidders are required to quote **firm price** as per the prescribed format enclosed in Section - IV. The quoted price shall be firm and inclusive of all taxes, duties, GST, freight & insurance and other levies, if any. CESU shall not be liable to pay anything extra over and above the quoted price.

7.0 RECEIPT AND OPENING OF THE BID: -

7.01 Bids shall be received in the office of the Owner and shall be opened on the scheduled date and time. The Owner's authorized representatives shall open bids in the presence of the Bidders or their authorized representatives(if they desire) on the date and time for opening of bids as specified in the Invitation to Bid or in case any extension has been given thereto, on the extended bid opening date and time notified.

7.02 Maximum one representative for each bidder shall be allowed to witness the opening of bids. The representative must produce suitable authorization in this regard to be eligible to witness the bid opening on behalf of the bidder. Bidders' representatives who are present shall sign in a register evidencing their attendance.

7.03 The Bidders' names, bid prices, modifications, bid withdrawals and the presence or absence of the requisite bid guarantee and such other details as the Purchaser, at its discretion, may consider appropriate will be announced at the opening. No electronic recording devices will be permitted during bid opening.

7.04 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 the Owner's processing of Bids or award decisions may result in the rejection of the Bidder's Bid.

8.0 EVALUATION OF BIDS & AWARD OF CONTRACT:

8.01 To assist in the examination, evaluation and comparison of Bids, the Owner may, at its discretion, ask the Bidder for a clarification of its Bid. All responses to requests for clarification shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

8.02 Owner will examine the Bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the Bids are generally in order.

8.03 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected. In case the bidder quoted the unit price as "NIL/BLANK", the same is read as inclusive of total price. Accordingly, the bidder shall execute the said work without any financial burden to CESU.

8.04 Prior to the detailed evaluation, Owner will determine the substantial responsiveness of each Bid to the Bidding Documents including production capability and acceptable quality of the Goods offered. A substantially responsive Bid is one, which conforms to all the terms and conditions of the Bidding Documents without material deviation.

8.05 The Owner's evaluation of a Bid will take into account, in addition to the Bid price, the following factors, in the manner and to the extent indicated in this Clause:

- (a) Work Schedule
- (b) Deviations from Bidding Documents

8.06 The Owner will award the Contract to the successful Bidder whose Bid has been determined to be the lowest - evaluated responsive Bid, when the lowest bidder is not ready and/or capable to undertake the entire work envisaged, then the Owner may explore the possibility of the execution of works through other bidders if they are willing to execute at L₁ rate. Such exploration shall be carried out in a sequential order starting with L₂ bidder then with L₃ bidder and so on.

9.0 EARNEST MONEY DEPOSIT (EMD):-

9.01 The Tender must be accompanied by Earnest Money Deposit in shape of account payee Bank Draft drawn on any scheduled bank in favour of "**GENERAL MANAGER (ELECTRICAL) ELECTRICAL CIRCLE DHENKANAL, CESU**" payable at **DHENKANAL**. EMD shall be 1% of the total estimated Tender value as mentioned above for the particular project, the bidder applied for. Bids without EM deposit will be rejected out rightly. The EMD should be deposited in the manner specified in the detail tender Notice.

9.02 No adjustment of any previous deposit or any amount payable from Purchaser shall be entertained for EMD. EMD amount so submitted shall not carry any interest payable to the bidder.

9.03 The Earnest Money so deposited shall be forfeited:

- (a) if the Bidder:
 - i) withdraws its bid during the period of bid validity specified by the Bidder in the Bid Form; or
- (b) in the case of a successful Bidder, if the Bidder fails:
 - (i) to sign the Contract, or
 - (ii) to furnish the required Contract Performance Bank Guarantee.

9.04 The EMD of unsuccessful bidders shall be returned within 45 days from the date of finalization of the Tender.

10.0 OWNER'S RIGHT TO VARY QUANTITIES AT TIME OF AWARD:

While placing orders and / or during execution of contract, Owner reserves the right to increase or decrease the quantity of goods and services specified in the Schedule of Requirement up to 20% of the tender quantity without any change in price or other terms and condition.

11.0 INSPECTION AND TESTING:-

The Bidder shall offer inspection for all the materials to be supplied by the bidder for this work before the Engineer-in-Charge to inspect, examine and test the materials at the manufacturer premises about workmanship of the materials to be supplied under this contract. If the said materials are being manufactured in other premises, the contractor shall provide unhindered clearance, giving full rights to the owner to inspect, examine and test as if the materials were being manufactured in his premises. The Engineer In charge shall constitute an inspection team consisting of the concerned distribution Executive Engineer, E&MR Executive Engineer, Distribution SDO & E&MR SDO & they shall offer the report to the Bidder.

The materials which shall be used for the project may be thoroughly checked and that should confirm to relevant REC specification before utilizing the materials at the site.

11.1 INSPECTION OF THE COMPLETED WORK: The work after due completion under the supervision of "The Engineer in Charge" shall be inspected by himself jointly with the competent authority of **Electrical Inspectorate, Govt. of Odisha**. All arrangement for this inspection shall be the responsibility of the Contractor. Also, Contractor shall deposit statutory fees as applicable regarding Electrical Inspection for entire scope of work.

However, such Inspection and Testing shall not relieve Contractor of his obligation to execute the contract by letter of spirit. Any defects pointed out by the Electrical Inspector, shall be corrected or attended by the bidder / subcontractor at his own cost.

12.0 COMPLETION AND COMPLETENESS OF THE EQUIPMENT:-

12.01 Time being the essence of the contract; the work shall be completed within **90 days (Ninety) from the date** of issue of work order.

12.02 The work shall be treated as complete item wise when one item shall be complete in all respects with all mountings, fixtures and standard accessories which are normally supplied even though not specifically detailed in the specification. No extra payment shall be payable for such mounting, fittings, fixtures and accessories which are needed for safe operations of the equipment as required by applicable code of the country though this might not have included in the contract.

12.03 All similar components and/or parts of similar equipment supplied shall be inter-changeable with one another. Various equipments supplied under this contract shall subject to Owner's approval.

12.04 Owner however reserves the right to re-schedule the completion period, if required.

13.0 REJECTION OF MATERIALS: -

In the event of the materials supplied by the contractor and/or the installation works are found to be defective in quality and the workmanship is poor or otherwise not in conformity with the requirements of the contract specification as per section-IV (Technical specification), Owner shall reject such materials / services and ask the contractor in writing to replace / rectify the defects. The contractor on receipt of such notification shall rectify or replace the defective materials and/or re-install the work already executed, free of cost to the Purchaser. If the contractor fails to do so the Owner may at his option take the following actions which could be on concurrent basis.

- A) Replace or rectify such defective materials and recover the extra cost so involved plus 25% from the Contractor.
- B) Terminate the contract for balance supply and erection with enforcement of penalty as per contract.
- C) Acquire the defective materials at reduced price considered acceptable under the circumstances.
- D) Forfeit the Contract Performance Bank Guarantee.

14.0 EXPERIENCE OF BIDDERS: -

The bidders are required to furnish information regarding their experience on the following aspects:

- i. Description of similar type of work executed during the last three years with the name(s) of the party(s) to whom / where supplies / erection were made.
- ii. Testing facilities available at manufacturer's works along with the list of testing equipments.
- iii. work orders details (W.O No. and date only) executed (construction work) during the last three years along with Electrical inspection report copies and copies of user's performance certificates.

Bids may not be considered if the past performance is found to be unsatisfactory.

15.0 GUARANTEE PERIOD: -

15.01 The materials to be supplied by the contractor shall be guaranteed for satisfactory operation against defects in design and workmanship for a period of **24 months** from the date of handing over the completed installations.

15.02 The above guarantee certificate shall be furnished in triplicate to the Purchaser for his approval. Any defects noticed during the above period should be rectified by the Contractor free of cost to the Utility provided such defects are due to faulty design, bad workmanship or bad materials used on receipt of written notice from the Purchaser.

16.0 PENALTY FOR DELAY IN COMPLETION OF CONTRACT: -

16.01 If the contractor fails to complete the works by the scheduled period or any extension granted thereby, the contractor shall be liable for payment of penalty amounting to 0.5% (half percent) of the contract price per week of un-finished works subject to the maximum of 5% (five percent) of the total contract price and subject to force majeure conditions.

16.02 Penalty amount can be realized from the proceeds of the Contract Performance Bank Guarantee, if the situation so warrants.

16.03 Extension of delivery period could be with / without levy of penalty with the discretion of purchaser.

17.0 RIGHT OF WAY:

Right of way issues, if any, arising during execution of the works shall have no liability on the Owner. These issues shall be settled at the sole discretion of the Contractor. The Owner shall however extend all possible help to the Contractor including discussion with the local authorities for early resolution of these issues.

18.0 CONTRACTOR'S DEFAULT:

18.01 If the Contractor neglects to execute the works with due diligence and expedition or refuses or neglects to comply with any reasonable order given to him, in writing by the Engineer in connection with the works or contravenes the provisions or the contract, the Owner may give notice in writing to the Contractor to make good the failure, neglect or contravention complained of. Should the Contractor fail to comply with the notice within thirty (30) days from the date of serving the notice, the Owner shall be at liberty to employ other workmen and forthwith execute such part of the works as the contractor may have neglected to do or if the Owner thinks fit, without prejudice to any other right, he may have under the Contract to take the work wholly or in part out of the Contractor's hands and re-contract with any other person or persons to complete the works or any part thereof and in that event the Owner shall have free use of all Contractor's equipment that may have been at the time on the Site in connection with the works without being responsible to the Contractor for fair wear and tear thereof and to the exclusion of any right of the Contractor over the same, and the Owner shall be entitled to retain and apply any balance which may otherwise be due on the Contract by him to the Contractor, or such part thereof as may be necessary, to the payment of the cost of executing the said part of works or of completing the works as the case may be. If the cost of completing of works or executing part thereof as aforesaid shall exceed the balance due to the Contractor, the Contractor shall pay such excess. Such payment of excess amount shall be independent of the liquidated damages for delay which the Contractor shall have to pay if the completion of works is delayed.

18.02 In addition, such action by the Owner as aforesaid shall not relieve the Contractor of his liability to pay liquidated damages for delay in completion of works.

18.03 Such action by the Owner as aforesaid the termination of the Contract under this clause shall not entitle the Contractor to reduce the value of the Contract Performance Guarantee nor the time thereof. The Contract Performance Guarantee shall be valid for the full value and for the full period of the Contract including guarantee.

19.0 TERMINATION OF CONTRACT ON OWNER'S INITIATIVE:

19.01 Owner reserves the right to terminate the Contract either in part or in full due to reasons other than those mentioned under clause entitled 'Contractor's Default'. The Owner shall in such an event give fifteen (15) days notice in writing to the Contractor of his decision to do so.

19.02 The Contractor upon receipt of such notice shall discontinue the work on the date and to the extent specified in the notice, make all reasonable efforts to obtain cancellation of all orders and Contracts to the extent they related to the work terminated and terms satisfactory or the Purchaser, stop all further sub-contracting or purchasing activity related to the work terminated, and assist Owner in maintenance, protection, and disposition of the works acquired under the Contract by the Owner. In the event of such a termination the Contractor shall be paid compensation, equitable and reasonable, dictated by the circumstance prevalent at the time of termination.

19.03 If the Contractor is an individual or a proprietary concern and the individual or the proprietor dies and if the Contractor is a partnership concern and one of the partners dies then unless the Owner is satisfied that the legal representatives of the individual Contractor or of the proprietor of the propriety concern and in the case of partnership, the surviving partners, are capable of carrying out and completing the Contract the Owner shall be entitled to cancel the Contract as to its in completed part without being in any way liable to payment of any compensation to the estate of deceased Contractor and /or to the surviving partners of the Contractor's firm on account of the cancellation of the contract. The decision of the Purchaser that the legal representatives of the deceased Contractor or surviving partners of the Contractor's firm cannot carry out and complete the contract shall be final and binding on the parties. In the event of such cancellation the Owner shall not hold the estate of the deceased Contractor and/ or the surviving partners of the Contractor's firm liable to damages for not completing the Contract.

20.0 EXTENSION OF TIME: -

If the delivery of the equipments / materials is delayed due to reasons beyond the control of the Contractor, the Contractor shall immediately inform the Owner in writing of his claim for an extension of time. The Owner on receipt of such notice may agree to extend the contract period as may be reasonable but without prejudice to other terms & conditions of the contract.

21.0 STORE:-

Storing of materials from supply to erection shall be arranged by the contractor at his own cost. No compensation shall be made by the Owner for any damage or loss of materials during storing, transit transportation and at the time of erection.

22.0 INSURANCE: -

Contractor shall arrange adequate Transit-cum-storage-cum-erection policy and shall submit the copy of the same to the Owner. The policy shall initially remain valid for a period of sixty days over & above of the contractual guarantee period and shall be extended as required till handing over. Contractor shall be responsible for lodging of claim with the insurer as well as for all required follow up with the insurer for settlement of claim in case of loss / damage / theft of material during transit/ storage/ erection till the completed works is handed over to the Owner and is accepted by the authorized representative of the Owner in writing.

Contractor shall also arrange adequate cover for his employees / labourers engaged in the works as well as arrange third party insurance cover to indemnify any possible damages to public at large not connected with the works process. Any claim(s) pertaining to this shall be the responsibility of the Contractor.

The contractor shall undertake free replacement of the materials damaged or lost during transit, which will be intimated by the Consignee within 30 days of receipt of the materials at purchaser's stores.

23.0 ENGINEER IN CHARGE & PROJECT CO-ORDINATOR: - The Manager(Elect.), **TED, Chainpal** shall be the Engineer in charge for the Project and the Manager(Elect.), **E&MR Division, Dhenkanal** shall be the project coordinator for the project. All inspection, supervision, erection, testing and commissioning of the project shall be carried out in coordination with the Engineer in charge and the project co-ordinator. All drawings & GTPs should be submitted to G.M (Elect.), Electrical Circle, Dhenkanal for approval prior to inspection.

24.0 CONTRACT PERFORMANCE BANK GUARANTEE:-

24.01 Within 30 days of issue of the Work Order, the Contractor shall submit Contract Performance Bank Guarantee issued by a scheduled Bank, in favour of the Purchaser, covering 10% of the total value of the work order.

24.02 In case of Joint Venture/ Consortium, performance bank guarantee shall be in the name of lead partner @ of 10% of the contract price and additional @ 1% each by the Joint venture partner(s) separately (or) single Bank Guarantee for (Lead partner @ 10 % and each JV partner @ 1%) mentioning the name and address of the Lead & JV partner, to be submitted by lead partner from a Nationalized / Scheduled Bank encashable with the Bhubaneswar branch of the issuing bank, in favour of Central Electricity Supply Utility of Odisha , Bhubaneswar, in the prescribed proforma.

29.03 The said Bank Guarantee shall be prepared in the prescribed proforma as attached in Section IV, Annexure - III. The Bank Guarantee furnished shall be executed on Non-judicial Stamp paper worth of Rs 100/- (Rupees Hundred only), purchased in the name of the issuing bank, as per the prevalent rules. The Bank Guarantee so provided shall be en-cashable on the Bhubaneswar branch of the issuing Bank.

29.04 The Contract Performance Bank Guarantee shall remain valid for a period not less than 90 days over and above the guarantee period, basing on stipulated completion period in the W.O. towards security i.e. **27 (Twenty Seven) months from the date of issue of the work order and acceptance thereof**, failing which the B.G amount shall be deducted in one stroke from the final bill which will be released after completion of the guarantee period. Only after such deduction the EMD shall be returned.

29.05 No interest shall be allowed by the Purchaser on the above Performance Security Deposit submitted by the Bidder.

29.06 The Contract Performance Bank Guarantee may be extended for the delay period of completion of work, if any.

29.07 The advance BG & CPBG shall be submitted before G.M(Elect.), EC, Dhenkanal for necessary acceptance and approval thereof.

25.0 TERMS OF PAYMENT:

(i) 100% of bill amount shall be paid within 30 days of successful commissioning of line(s) stretches and made operational. If the CPBG is not deposited, then 10% of the final bill shall be kept reserved towards security and that will be released after guarantee period for the work.

26.0 PAYING OFFICER:

The **Superintending Engineer (Electrical)**, Electrical Circle Dhenkanal shall be the paying officer for the project.

27.0 OWNER'S RIGHTS: -

The Owner reserves the right to accept any bid or reject any or all bids or cancel / withdraw invitation of bid or to vary the quantity for placement of order without assigning any reason to such decision. Such decision by the Owner shall bear no liability.

29.0 DISPUTE RESOLUTION AND JURISDICTION: -

- (a) Any dispute arising out of this contract shall be referred to CEO, CESU who shall decided the case of sole arbitrator
- (b) For the purpose of dispute resolution, this agreement shall be governed by the provision of Arbitration and Conciliation Act, 1996.

- (c) All disputes shall be subjected to exclusive jurisdiction of the Courts at Dhenkanal and the writ jurisdiction of Hon'ble High Court of Odisha at Cuttack.

30.0 SAFETY PRECAUTIONS:-

The agency shall observe all applicable regulations regarding safety at the Site. Any compensation due on account of any type of accident at site shall be to the contractor's account. The contractor should follow various safety provisions as provided under Regulation-3, Regulation-4 & Regulation-7 of CEA (Measures relating to safety & electric supply) Regulation -2010 and Regulation -7 of CEA (Safety requirement for construction, operation and maintenance of electrical plants and electrical lines) Regulation-2011.

31.0 FORCE MAJEURE: -

The Contractor shall not be liable for any penalty for delay or for failure to perform the contract for reasons of Force Majeure such as "acts of God, acts of the Public enemy, acts of Govt., Fires, Flood, Epidemics, Quarantine restrictions, Strikes, Freight Embargos and provided that the Contractor shall within ten (10) days from the beginning of such delay notify the Purchaser in writing of the cause of delay. The Purchaser shall verify the facts and grant extension as facts justify.

32.0 PATENT RIGHT: -

The contractor shall indemnify the purchaser against all claims, actions, suits and proceedings for the alleged infringement any patent design or copy right protected either in country of origin or in India by the use of any equipment supplied by the contractor but such indemnity shall not cover any use of the equipment other than for the purpose indicated by or reasonable to be informed from the specification.

33.00: REGARDING LESS QUOTING OF PRICE BID W.R.T TENDER ESTIMATED COST AS PER AMENDMENT OF OPWD CODE.

Additional Performance Security shall be obtained from the bidder when the bid amount is less than the estimated cost put to tender. In such an event, only the successful bidder who have quoted less bid price / rate than the estimated cost put to tender shall have to furnish the exact amount of differential cost i.e. estimated cost put to tender minus the quoted amount as Additional Performance Security (**APS**) in shape of Demand draft / Term Deposit Receipt pledged in favour of General Manager (Electrical) Electrical Circle Dhenkanal, CESU **within seven days**, otherwise the bid shall be cancelled and the security deposit shall be forfeited. Further, proceeding for blacklisting shall be intimated against order. *Further proceeding for cancellation of bidding shall be initiated against bidder. (Amendment to para-3.5.5 (V) of Note-II of OPWD Code, Vol.-I by modification as per OM No 14299 dated 03.10.2017 of Works Department of Govt. of Odisha).*

This security amount(APS) shall be released only after completion of work & after hand over to CESU. The aforesaid amount shall not carry any interest payable to the bidder.

33.00 Any other terms and conditions that are not covered in this specification shall be dealt with relevant OPWD / CPWD / CVC codes / guide lines which are changed from time to time.

34.00 TRANSFER AND SUB-LETTING:-

The Contractor shall not sublet, transfer, assign or otherwise part with the Contract or any part thereof, either directly or indirectly, without prior written permission of the Purchaser.

35.0 SUBMITTALS REQUIRED AFTER AWARD OF CONTRACT:-

35.01 Within 7 days of the effective date of contract the contractor shall provide three copies of an outline program of production, inspection, testing, delivery, survey, erection, pre-commissioning and commissioning in chart form. Included in the program will be the detailed schedule of drawing to be submitted.

35.02 The bar chart & pert chart for each item of the work so as to complete the work in scheduled period of, **1month** for the project shall be furnished by the contractor/Successful Bidder.

35.03 The periodic progress report as required by the purchaser shall be submitted by the contractor as per the format prescribed by the Engineer in Charge.

36.0 DRAWINGS

Within 15 days of contract commencement the contractor shall submit, for approval to the G.M.(Elect.),EC, Dhenkanal, a schedule of the drawings to be produced. All drawings and design should be submitted to G.M.(Elect.), EC, Dhenkanal within the period specified above.

37.0 APPROVAL PROCEDURE OF SUB VENDORS & DRAWINGS OF BOUGHT OUT MATERIALS

38.01 The contractor shall submit all drawings, documents and type test reports, QAP, Name of Sub vendor, samples (as applicable) etc, to the engineer in charge within 15 days of award of LOA for approval. If modifications to be made if such are deemed necessary, the contractor has to resubmit them for approval without delaying the initial deliveries or completion of the contract work.

38.02 Three copies of all drawings, GTP, QAP shall be submitted for approval and three copies for any subsequent revision.

38.03 If the drawings will be as per the technical specifications, the competent authority of the Purchaser will return the drawings & documents to the contractor marked with "Approved" stamp.

38.0 TAKING OVER

39.1 Upon successful completion of all the tests to be performed at site on equipment / materials supplied and erected by the contractor, the Engineer-in-charge of the project shall issue to the contractor a taking over certificate as a proof of the final acceptance of the equipment / materials. Such certificate shall not be un-reasonably withheld nor will the engineer delay the issuance thereof on account of minor omission or defects, which do not affect the commercial operation and / or cause any serious to the equipment/material. Such certificate shall, however, not relieve the contractor of any of his obligations which otherwise survive by the terms & conditions of the contract after issuance of such certificate.

39.2 For the satisfaction of purchaser about quality, the purchaser shall have unreserved right for arrangement of testing of equipment/ materials and the complete system independently by self or any other agency chosen by the purchaser. The contractor is expected to agree and extend necessary help during such test if necessary.

39.0 LATENT DEFECT WARRANTY

40.01 The period of latent defect warranty in terms of this bidding documents, shall be limited to five (05) years from the date of completion of Guarantee period.

40.0 CLEARANCE OF SITE:

The Contractor's shall from time to time during the progress of the Works clear away and remove all surplus materials and rubbish disposal in an approved manner. On completion of the work the Contractor shall remove all Contractors' equipment and leave the whole of the Site clean and in a workable condition, to the satisfaction of the CESU. The Contractor shall obtain prior approval of the CESU to remove the surplus materials. **The contractor should rectify any damage occur during execution to its original position.**

41.0 EMBOSSING / PUNCHING / CASTING / PAINTING

All major equipments and materials supplied /erected under this project shall bear distinct mark of **"Name of the Purchaser, CESU, WO Order No. & Date"** by a way of embossing / punching / casting etc. This should be clearly visible to naked eye.

42.0 CESU may or may not take over any balance materials left in the project in their account. So the contractor should procure the materials as per site condition.

43.0 Any terms & conditions not included above shall be abide by OPWD / CPWD / CVC codes / guidelines.

44.0 DECLARATION

The contractor has to declare that, any other miscellaneous materials required as per site condition to execute the work in complete manner which is not included in the price schedule, has been taken into consideration during quoting the price for each scope. They understand that, the quoted sub scope price shall be considered as inclusive of these extra required items.

Further, the contractor has to declare that, in the event of any deviation to scope of work, they will submit the rate analysis (both supply and erection), drawing (if required) for the additional items not included in the price schedule before execution of the deviated/extra work beyond the original scope of the work to the satisfaction of CESU.



SECTION - III

GENERAL CONDITIONS OF CONTRACT & TECHNICAL REQUIREMENTS

GENERAL CONDITONS OF CONTRACT

&

TECHNICAL REQUIREMENTS OF FIELD WORK

Sealed tenders in duplicate in the prescribed form and mode are invited from reputed Firms having valid HT Electrical Contractor License issued by ELBO for interposing of Poles under 33KV OH line from Rengali to Kaniha for strengthening of 33KV OH line at different locations of Kaniha & Rengali Electrical Section of TED Chainpal for the following scope of works:-

Name of work	Scope of work
PACKAGE-A Interposing of Pole for strengthening of 33KV over head line from Rengali to Kaniha at locations in elephant movement area (i.e. from Boudabeda to Kaniha 33/11KV Primary Sub-station) under Kaniha Electrical section.	c) Erection of interposing pole using 10 Mtr. long, 150X150mm RS Joist = 47 Nos. d) Fitting of riser = 145 Nos. 2.5 mtr. each
PACKAGE-B Interposing of Pole for strengthening of 33KV over head line between Rengali to Kaniha at different locations in elephant movement area (i.e. from Rengali Grid to Boudabeda) under Rengali Electrical section.	c) Erection of interposing pole using 10 Mtr. long, 150X150mm RS Joist = 61 Nos. d) Fitting of riser = 134 Nos. 2.5 mtr. each

01.01 Survey shall be carried out by the contractor before tendering for the proposed work for erection of interposing poles using 10mtr. long, 150x150mm RS Joist pole and fitting of riser.

01.02 Any other work not mentioned in this document specifically but required for accomplishing desired work shall be in the scope of the bidder/contractor.

01.03 For all above activities shut down will be provided for the line by owner. Restoring the disturbance / damage caused by above activities to the existing infrastructure e.g road, water / sewerage pipes, telecommunication lines etc. will be in the scope of the bidder/ contractor.

01.04 While Repairing & Replacing the equipment, if any equipment gets damaged due to negligent handling of the contractor the same shall be replaced by the contractor, at his cost, to the owner / employer's satisfaction.



SECTION - IV

TECHNICAL SPECIFICATION AND PRICE SCHEDULE

TECHNICAL SPECIFICATION OF RS JOIST POLES (150X150 MM)

1. Standards:

The RS JOISTS shall comply with the requirements of latest issue of IS – 2062 2006, Grade – A, IS: 808 / 1989 / 2001, IS: 1608 / 1995 & IS: 12777 / 1989 & their latest amendments if any.

2. Climatic Conditions:

The climatic conditions at site under which the store shall operate satisfactory, are as follows

Maximum temperature of air in shade	45 c
Maximum temperature of air in shade	0 c
Maximum temperature of air in shade	50
Maximum rain fall per annum	2000mm
Maximum temperature of air in shade	45 c
Maximum ambient temperature	45 c
Maximum humidity	100%
Av. No. of thunder storm days per annum	
70% Av. No. of dust storm per annum	20
Av. Rain fall per annum	150mm

3. Rolled Steel Joists

The Rolled Steel joist (RSJ) support structures shall be fabricated from mild steel, grade A and in lengths dictated by design parameters. The joists, may include, but shall not be limited to the following sizes:

- 150 X 150 mm;

4. Dimensions and Properties

PARTICULARS	150 x 150 mm ISHB	Manufacturer's Data
Length of Joist in Mtr. with +100mm/-0% Tolerance	10mtr	
Weight kg/m with±2.5% Tolerance	34.6	
Sectional Area (cm ²)	39.00	
Depth(D) of Section (mm) with +3.0mm/ - 2.0mm Tolerance as per IS 1852-1985	150.00	
Width (B)of Flange (mm) with ±2.5mm Tolerance for 116 x 100 mm ISMB & ±4.0mm Tolerance for 150 x 150 mm ISHB IS 1852-1985	150.00	
Thickness of Flange (Tf) (mm) with±1.5mm Tolerance	9.00	
Thickness of Web(Tw) (mm) with±1.0mm Tolerance	8.40	
Corner Radius of fillet or root (R1) (mm)	8.00	
Corner Radius of Tow (R2) (mm)	4.00	
Moment of Inertia Ixx (cm ⁴) Iyy (cm ⁴)	1540.00 460.00	
Radius of Gyration (cm) Rxx Ryy	6.29 3.44	
Modulus of Section Zxx(cm ³)	205	

Zyy(cm3)	60.2	
Flange Slope(a) in Degree	94.0	
Tolerance in Dimension	As per IS:1852	
Distinct Non-Erasable Embossings to be made on each R.S. Joist	a) Name & Logo of the Manufacturer. b) B.I.S Logo (ISI Mark) if applicable. c) Size	

5. Chemical Properties:

Tensile Test :	Requirement as per IS:2062/ 1999 Grade-A	Manufacturer's Data
Yeild Stress(MPa)	Min250	
Tensile Strength(MPa)	Min410	
Lo=(5.65√So)Elongation%	Min23	
Bend Test	Shall not Crack	

6. However, In case of any discrepancy between the above data & the relevant ISS, the values indicated in the IS shall prevail.

7. The Acceptance Tests shall be carried out as per Relevant IS.

8. 150x150mm RS Joists:

RS Joists of Specific Weight 34.6kg/mtr with length of each type of pole being 10 mtr long and each pole weighing 346 Kg respectively for specified number of poles with specified weight in MT as given in the NIT table given above shall have to be supplied as per IS:2062;2006 Grade"A", IS:808;1989/2001, IS1608:1995 & IS:12779-1989 and their latest amendment if any complying the required Dimension, Weight, Chemical & Mechanical properties confirming to the relevant IS, as per the Tolerance given Below.

9. APPLICABLE TOLERANCES:

Length of each pole = + 100mm / - 0 % As per relevant IS: 12779-1989
(with proportionate change in no of Poles)

Specific Weight of RS Joists = ±2.5% As per relevant IS: 1852/1985

Weight for whole lot of supply for all categories = ±3.0% As per relevant IS: 12779-1989 for both types of RS Joists.

10. EMBOSSING ON EACH RS JOIST:

Following distinct non-erasable embossing is to be made on each RS Joists to be supplied to CESU under this Tender.

Name & Logo of the Manufacturer - CESU

B.I.S Logo (ISI Mark) if applicable.

Size of the RS Joist

TECHNICAL SPECIFICATION FOR STEEL MATERIALS

100X50x6 MM MS CHANNEL

01.00 Scope:

This specification covers the manufacturing, testing before dispatch and delivery at destination at site stores.

100X50x6 MM MS CHANNEL

As per I.S:2062 and its latest amendments for grade A

02.00 Standards:

The steel materials shall comply with the requirements of latest issue of IS – 2062 Grade – A except where specified otherwise.

03.00 Climatic Conditions:

The climatic conditions at site under which the store shall operate satisfactory, are as follows:

Maximum temperature of air in shade	45 c
Maximum temperature of air in shade	0 c
Maximum temperature of air in shade	50 c
Maximum rain fall per annum	2000mm
Maximum temperature of air in shade	45 c
Maximum ambient temperature	45 c
Maximum humidity	100%
Av. No. of thunder storm days per annum	70%
Av. No. of dust storm per annum	20
Av. Rain fall per annum	150mm

Guaranteed Technical Particulars of 33KV V Cross Arm

SL No.	General Technical Particulars	Bidder's Offer
		33KV V Cross Arm
1	Manufacturer's name & Address	
2	Type of Cross Arm	
3	Grade of steel	
4	Steel Standard	
5	Fabrication Standard	
6	Dimensions	
7	Steel Section Utilized	
8	Steel Tensile Strength	
9	Working Load	
10	Weight of Cross arm	
11	Whether drawing has been submitted with the bid	

TECHNICAL SPECIFICATION OF 33KV GI PIN FOR PIN INSULATOR

The 33KV hot-dipped galvanized Pin shall confirming to IS: 2486 (Part-I) 1971 & (Part: II) / 1989, IS: 1363 / 1984, IS: 3063 / 1972 & IS: 2633 / 1972.

1. SCOPE:-

33KV G.I. Pin for power conductor suitable for use in 33KV Over-head transmission lines and sub-stations. The materials/equipment offered, shall be complete with all components, which are necessary or usual for the efficient performance and satisfactory maintenance. Such part shall be deemed to be within the scope of contract

2. MATERIALS & DESIGN:-

The pins shall be of single piece obtained by the process of forging. They will not be made by any process using more than one piece of material. The pin will have good finish, free from flaws and other defects. The finish of the collar shall be such that a sharp angle between the collar and the shank is avoided. All ferrous pins, nuts and washers, except those made of stainless steel shall be galvanized by hot dip process. Other fittings, i.,e flat washers and spring washers may be electro-galvalised as per IS:2486. The threads of nuts, and topped holes, when cut after galvanization shall be well oiled or greased.

The pins shall be as per relevant figure indicated in IS 2486 (part II) having stalk length of 300mm for 33KV GI Pin and shank length of 150 mm with minimum failing load of 10kN for 33KV GI Pin with small heads and shall match with the pin type insulators with cemented zinc thimble having similar threads.

3. TESTS :-

The hardware fittings and pins shall be tested as per IS: 2486 (part-1):1993

3.1 Type Test:

The bidder has to enclose the reports of the following type tests carried out in any govt. recognized laboratory along with the bid documents.

- a) Checking of Threads on Heads
- b) Galvanizing Test
- c) Visual Examination
- d) Mechanical Test.

3.2 Acceptance Tests:

Following tests shall be carried out at the works of the manufacturer before dispatch.

- a) Checking of Threads on Heads
- b) Galvanizing Test
- c) Visual Examination
- d) Mechanical Test.

Guaranteed Technical Particulars of 33KV GI Pin

SL No.	General Technical Particulars	Bidder's Offer
		33KV GI Pin
1	Manufacturer's name & Address	
2	Standard applicable specification	
3	Minimum failing load	
4	Dimensions (mm)	
a	Total length	
b	Shank length	
c	Stalk length	
5	Type of threads	
6	Threads per Inch	
7	Type of galvanization of pin & nuts	
8	Mass of zinc (minimum)	
9	No. of Nuts with each pin & its size	
10	No. of spring washer with each pin & its size	
	Packing details	
a	Type of packing	
b	Weight of each pin approx, (with nut & washers)	
c	No. of Pins in each packing (Kg)	
12	Tolerance in weight / dimensions, if any	
13	Any other relevant information the bidder would like to indicate	
14	Whether drawing has been submitted by the bidder	

TECHNICAL SPECIFICATION OF 33KV HARDWARE FITTING

1. SCOPE:-

33KV B&S Hardware fitting for power conductor and hardware fittings for string insulators suitable for use in 33KV Over-head transmission lines and sub-stations. Hard wares to be supplied shall be as per approved drawings. The materials/equipment offered, shall be complete with all components, which are necessary or usual for the efficient performance and satisfactory maintenance. Such part shall be deemed to be within the scope of contract.

2. STANDARD:-

The materials covered under this Specification shall comply with the requirement of the latest version of the following standards as amended up to date, except where specified otherwise.

IS: 2486 (Part-II & III)	: Insulator fitting for overhead power lines with a nominal voltage greater than 1,000 volts
IS: 2121 (Part I & II)	: Conductor & earth wire accessories for overhead Power lines
IS: 9708	: Stock Bridge Vibration Dampers on overhead Power lines
IS: 2633	: Method of testing of uniformity of coating on zinc Coated articles
IS: 209	: Specification for Zinc
BS: 916	: Specification for Hexagonal bolts and nuts

3. MATERIALS AND DESIGN:

Aluminum and aluminum alloys, malleable iron and forged steel having required mechanical strength, corrosion resistance and machine ability depending on the types of application for which accessories / fittings are needed. In the accessories / fittings, the composition of the aluminum alloys used shall be made available to purchaser if required for verification. The materials offered shall be of first class quality, workmanship, well finished and approved design. All castings shall be free from blow-holes, flaws, cracks of other defects and shall be smooth, close grained and true forms and dimensions. All machined surfaces should be free, smooth and well finished. Metal fittings of specified material for conductor and earth wire accessories and string insulator fittings are required to have excellent mechanical properties such as strength, toughness and high resistance against corrosion. All current carrying parts shall be so designed and manufactured that contact resistance is reduced to the minimum. All bolts, nuts, bolt-heads shall be the white worth's standard thread. Bolt heads and nuts shall be hexagonal. Nuts shall be locked in an approved manner. The treads in nuts and tapped holes shall be cut after galvanizing shall be well fabricated and greased. All other treads shall be cut before galvanizing. The bolt treads shall be undercut to take care of increase in diameter due to galvanizing. All nuts shall be made of materials to Clause: 4.8 of IS: 1367 (latest edition) with regard to its mechanical properties. The general design conductor and earth wire accessories and insulator fittings shall be such as to ensure uniformity, high strength, free from corona formation and high resistance against corrosion even in case of high level of

atmosphere pollution. All hooks, eyes, pins, bolts, suspension clamps and other fittings for attaching to the tower or to the line conductor or to the earth wire shall be so designed that the effects of vibration, both on the conductor and the fittings itself, are minimized. Special attention must be given to ensure smooth finished surface throughout. Adequate bearing area between fittings shall be provided and point or line contacts shall be avoided. All accessories and hard wares shall be free from cracks, shrinks, slender air holes, burrs or rough edges. The design of the accessories and hard wares shall be such as to avoid local corona formation or discharge likely to cause interference to tele-transmission signals of any kind.

4. Galvanization:

All ferrous parts of conductor and ground wire accessories and insulator hard wares shall be galvanized in accordance with IS: 2629-Recommended Practice for hot dip galvanizing of iron and steel or any other equivalent standards. The weight of zinc coating shall be determined as per method stipulated in IS: 2633 for testing weights, thickness and uniformity of coating of hot dip galvanized articles or as per any other equivalent authoritative standards. The zinc used or galvanization shall conform to grade Zn 98 of IS: 209. The galvanized parts shall withstand four (4) dips of 1 minute each time while testing uniformity of zinc coating as per IS: 2633. Spring washers shall be electro galvanized.

5. INSULATOR HARDWARES:

The insulator disc hardware and string assemblies to be offered by the bidder shall be suitable to meet the requirement given in the specific technical particulars as detailed hereinafter. Hardware for suspension and tension insulator shall be suitable for insulator with normal pin shank diameter of 20 mm. in case of tension string unit and 16mm. for suspension string unit.

Each insulator string shall generally include the following hardware components.

Single Suspension Set	Double Suspension Set
a) Ball Hook.	(i) Ball Hook.
b) tower side arching horn	(ii) Socket clevis with R-Type security clip-3 Nos.
c) Socket Eye with R-Type security clip.	(iii) Yoke Plate-2 Nos.
d) Line side arching horn.	(iv) Tower side arching horns-2Nos
e) Suspension clamps	(v) Ball clevis – 2 Nos.
	(vi) Line side arching horns-2 Nos.
	(vii) Clevis Eye.
	(viii) Suspension Clamp
Single Tension Set :	Double Tension Set :
a) Anchor Shackle	a) Anchor Shackle.
b) Ball Eye.	b) Chain Link.
c) Tower side arching horn.	c) Yoke Plate – 2 Nos.
d) Socket Clevis with R-Type security clip	d) Tower side arching horn

e) Line side arcing horn	e) Ball Clevis – 2 Nos.
f) Bolted type dead end clamp.	f) Socket Clevis with R-Type security clip – 2Nos
	g) Line side arcing horns.
	h) Bolted type dead end clamps

6. SUSPENSION CLAMPS

This clamp will be envelope type made out of aluminum alloy suitable for accommodating preformed armored rod.

7. TENSION CLAMPS

The Tension Clamps shall be made out of aluminum alloy and of 4 **pair** bolted (**M-16**) type suitable for 232 mm² AAAC –up conductor (**In case of lines it will be suitable for 80mm²100 mm² 148 mm²**) The tension clamps shall not permit slipping or damage to failure of the complete conductor or any part thereof at a load less than 90% of the ultimate strength of conductor. The mechanical efficiency of tension / clamps shall not be affected by method of erection involving come / along or similar clamps or tension stringing operation during or after assembly and erection of tension clamp itself. The tension clamp shall be of a design that will ensure unrestricted flow of current without use of parallel groove clamps. The clamps shall be as light as possible.

8. ARCING HORNS

Each hardware assembly shall have provision for attaching arcing horns of both adjustable and non/adjustable type across the suspension and tension strings or tower side. However each hardware assembly shall be provided with arching horn of fixed type on line side only.

9. TESTS, TEST CERTIFICATE AND PERFORMANCE REPORTS

The fittings and accessories for the power conductor, insulator and hardware shall be tested in accordance with IS:2121, IS:2486, BS:916 for hexagonal bolts and nuts or any other authoritative equivalent standards. Six sets of type and routine test certificates and performance reports are to be submitted by the bidder. The Employer however, reserves the right to get all the tests performed in accordance with the relevant

IS Specification as Acceptance Test in presence of Employer-s representatives.

The bidder shall clearly state the testing facilities available in the laboratory at his Works and his ability to carry out the tests in accordance with this Specification. All the specified tests shall be carried out without any extra cost.

Acceptance Test for power conductor accessories.

- a) Visual examination
- b) Dimensional verification
- c) Failing load test
- d) Slip strength test (for clamps)
- e) Electrical resistance test

- f) Fatigue test (for vibration dampers)
- g) Mass pull off test (for vibration dampers)
- h) Galvanizing test.

10. ACCEPTANCE TEST FOR HARDWARES

- i) Dimensional Verification
- ii) Ultimate tensile test.
- iii) Slip strength test
- iv) Electrical Resistance test
- v) Heating cycle test
- vi) Breaking strength of full string assembly
- vii) Galvanizing test

a) material :	Flexible copper bond (37/7/0.417 mm. tinned copper flexible stranded cable).
b) Length	: Not less than 750 mm.
c) Bolt size	: 16mm x 40 mm.
d) Copper area.	: 34 sq.mm.
e) Thickness of long.	: 6 mm
f)Material for connecting socket	: Tinned Brass

12. FASTENERS: Bolts, Nuts & Washers

1. All bolts and nuts shall conform to IS-6639 – 1972. All bolts and nuts shall be galvanized. All bolts and nuts shall have hexagonal heads, the heads being truly concentric, and square with the shank, which must be perfectly straight.
2. Bolts up-to M16 and having length up-to ten times the diameter of the bolt should be manufactured by cold forging and thread rolling process to obtain good and reliable mechanical properties and effective dimensional control. The shear strength of bolt for 5.6 grades should be 310 Mpa minimum as per IS-12427. Bolts should be provided with washer face in accordance with IS-1363 Part-I to ensure proper bearing.
3. Fully threaded bolts shall not be used. The length of the bolt shall be such that the threaded portion shall not extend into the place of contact of the component parts.
4. All bolts shall be threaded to take the full depth of the nuts and threaded enough to permit the firm gripping of the component parts but not further. It shall be ensured that the threaded portion of the bolt protrudes not less than 3 mm and not more than 8 mm when fully tightened. All nuts shall fit and be tight to the point where shank of the bolt connects to the head.
5. Flat washers and spring washers shall be provided wherever necessary and shall be of positive lock type. Spring washers shall be electro-galvanized. The thickness of washers shall conform to IS-2016-1967.

6. The bidder shall furnish bolt schedules giving thickness of components connected, the nut and the washer and the length of shank and the threaded portion of the bolts and size of holes and any other special details of this nature.
7. To obviate bending stress in bolt, it shall not connect aggregate thickness more than three times its diameter.
8. Bolts at the joints shall be so staggered that nuts may be tightened with spanners without fouling.
9. Fasteners of grade higher than 8.8 are not to be used and minimum grade for bolts shall be 5.6.

13. GENERAL:

- 1) All ferrous parts including fasteners shall be hot dip galvanized, after all machining has been completed. Nuts may however be tapped (threaded) after galvanizing and the threads oiled. Spring washers shall be electro-galvanized. The bolt threads shall be undercut to take care of the increase in diameter due to galvanizing. Galvanizing shall be done in accordance with IS- 2629-1985 and shall satisfy the tests mentioned in IS: 2633-1986. Fasteners shall withstand four dips while spring washers shall withstand three dips of one-minute duration in the standard Preece test. Other galvanized materials shall be guaranteed to withstand at least six successive dips each lasting one minute under the Standard Preece test for galvanizing.
- 2) The zinc coating shall be perfectly adherent of uniform thickness, smooth, reasonably bright, continuous and free from imperfections such as flux, ash, rust stains, bulky white deposits and blisters. The zinc used for galvanizing shall be of grade Zn 99.95 as per IS 209-1979.
- 3) Pin balls shall be checked with the applicable $\frac{1}{4}$ gauges in at least two directions, one of which shall be across the line of die flashing and the other 90 deg. to this line. 'NO GO' gauges shall not pass in any direction.
- 4) Socket ends, before galvanizing shall be of uniform contour. The bearing surface of socket ends shall be uniform about the entire circumference without depressions or high spots. The internal contours of socket ends shall be concentric with the axis of the fittings as per IS 2486/IEC-120. The axis of the bearing surfaces of socket ends shall be coaxial with the axis of the fittings. There shall be no noticeable tilting of the bearing surfaces with the axis of the fittings.
- 5) All current carrying parts shall be so designed and manufactured that contact resistance is reduced to minimum.
- 6) Welding of aluminum shall be by inert gas shielded tungsten arc or inert gas, shielded metal arc process. Welds shall be clean, sound, smooth, and uniform without overlaps, properly fused and completely sealed. There shall be no cracks, voids incomplete penetration, incomplete fusion, under-cutting or inclusions Porosity shall be minimized so that mechanical properties of the aluminum alloys are not affected. All welds shall be properly finished as per good engineering practices.

14. Electrical Design:

The normal duty and heavy duty suspension, light duty, normal duty and heavy duty tension insulator sets shall all comply with the technical requirements and satisfy the test requirements

15. Mechanical Design:

The mechanical strength of the insulators and corresponding insulator fittings must match. The design shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to the development of defects. Insulating material shall not engage directly with hard metal. All fixing materials shall be of approved quality, shall be applied in an approved manner and shall not enter into chemical action with the metal parts or cause fracture by expansion in service. Where cement is used as a fixing medium, cement thickness shall be as small and even as possible and proper care shall be taken to correctly

Centre and locate the individual parts during cementing.

16. Technical Specification for Design, Supply and Testing of Hard ware fittings:-

16.1 Type tests:-

The following type tests shall be conducted on hardware fittings.

A. On suspension hardware fittings only.

- (i) Magnetic power loss test.
- (ii) Clamp slip strength Vs torque
- (iii) Mechanical strength test.
- (iv) On one test on elastomer.

B. On Tension hard ware fittings only.

- (i) Electrical resistance test for dead end assembly : IS 2486 (Part-I) 1971
- (ii) Heating cycle test for dead end assembly : -do-
- (iii) Slip strength test for dead end assembly : IS 2486 (Part-I)
- (iv) Mechanical strength test.

C. On both suspension and tension hardware fittings.

- (i) Visual examination. : IS-2486 (Part-I) 1971
- (ii) Verification of dimension. : -do-
- (iii) Galvanizing / electroplating test. : -do-
- (iv) Mechanical strength test of each component (Including corona control ring/grading ring and arcing horn)
- (v) Mechanical strength test of welded joint.
- (vi) Mechanical strength test for corona control ring/ grading ring and arcing horn. BS-3288 (Part-I)
- (vii) Test on locking device for ball and socket coupling. IEC – 3721984
- (viii) Chemical analysis, hardness tests, grain size, Inclusion rating and magnetic particle inspection for forging/casting.

D. On suspension hardware fittings only.

- i) Clamp ship strength ver as torque test for suspension clamp
- ii) Shore hardness test of elastomer cushion for AG suspension clamp.
- iii) Bend test for armour rod set : IS-2121 (Part-I)
- iv) Resilience test for armour rod set. : -do-)
- Conductivity test for armour rod set. : -do-

All the acceptance tests stated at clause shall also be carried out on composite insulator unit, except the eccentricity test at clause. In addition to these, all the acceptance tests indicated in IEC 1109 shall also be carried out without any extra cost to the employer.

E. For hardware fittings

- a) Visual examination. : IS-2121 (Part-I)
- b) Proof & test.

F. Tests on conductor accessories.

G. Type Test

H. Mid span compression joint for conductor and earth wire.

- a) Chemical analysis of materials.
- b) Electrical resistance tests. : IS-2121 (Part-II) 1981 clause 6.5 & 6.6
- (c) Heating cycle test. : -do-
- (d) Slip strength test. : -do

GUARANTEED TECHNICAL PARTICULARS OF 33KV HARDWARE FITTING

Sl No.	Description	Bidder offer
1	Name & Address of Manufacturer	
2	Applicable standard	
3	Type of insulator (Porcelain or toughened glass)	
4	Dry impulse withstand voltage	
5	Wet power frequency, 1 minute, withstand voltage	
6	Dry, Critical Impulse Flashover Voltage	
7	Dry, power frequency Critical Flashover Voltage	
8	Wet, power frequency Critical Flashover Voltage	
9	Power frequency Puncture Voltage	
10	Mechanical Routine Test Load	
11	Mechanical Impact Strength	
12	Shattered Strength (Glass)	
13	Electromechanical Failing Load	
14	Safe Working Load	
15	Minimum Failing Load	
16	Creepage Distance	
17	Protected Creepage Distance	
18	Type and Grade of Materials: Insulator	
19	Type and Grade of Materials: Cap	
20	Type and Grade of Materials: Pin	
21	Type and Grade of Materials: Locking Pin	
	Type and Grade of Materials: Cement	
23	Type of semi conducting Glaze	
24	Colour of Insulator	
25	Weight of Insulator	
26	Number of insulator per crate	
27	Gross Weight of Loaded Crate	
28	Whether drawing showing dimensional details have been furnished along with Bid	

TECHNICAL SPECIFICATIONS OF 33KV PIN INSULATOR

1. Scope of Work:-

This Specification covers design, engineering, manufacture, assembly, stage testing, inspection & testing before supply and delivery at site of the 33KV Pin & Disc Insulator.

2. APPLICABLE STANDARDS:-

Unless otherwise stipulated in this specification, the insulators shall comply with the Indian standard specification IS: 731-1971 and the insulator fittings with IS:2486(Pt.- I)-1971 and IS:2486(Pt . II)-1974 or the latest version thereof.

3. INSULATORS:-

3.1 General Requirements

3.1.1 The Porcelain shall be sound, free from defects, thoroughly vitrified and smoothly glazed.

3.1.2 Unless otherwise specified, the glaze shall be brown in colour. The glaze shall cover all the porcelain parts of the insulator except those areas which serve as supports during firing or are left unglazed for the purpose of assembly.

3.1.3 The design of the insulator shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration. The porcelain shall not engage directly with hard metal.

3.1.4 Cement used in the construction of the insulator shall not cause fracture by expansion or loosening by contraction and proper care shall be taken to locate the individual parts correctly during cementing. The cement shall not give rise to chemical reaction with metal fittings, and its thickness shall be as uniform as possible.

3.2 Creepage Distance

The minimum creepage distance shall be as under:

Highest System Voltage	Normal & moderately polluted atmospheres (total)	Heavily polluted atmospheres (total)
1	2	3
36KV	580mm	840mm

Note: For insulator used in an approximately vertical position the values given in col.(2) or (3) shall apply. For insulators used in an approximately horizontal position, the value given in col. (2) shall apply but the value in Col.(3) may be reduced by as much as 20%.

3.3 Tests:

The insulators shall comply with the following tests as per IS:731-1971.

3.3.1 Type tests

- a) Visual examination
- b) Verification of dimensions
- c) Visible discharge test
- d) Impulse voltage withstand test.
- e) Wet power-frequency voltage withstand test.
- f) Temperature cycle test.
- g) Electro-mechanical failing load test.
- h) Mechanical failing load test (for those of type B string insulator units to which electro mechanical failing load test (g) is not applicable.
- i) Twenty four hours mechanical strength test (for string insulators only when specified by the purchaser).
- j) Puncture test

- k) Porosity test and
- l) Galvanising test.

3.3.2 Acceptance Tests

The test samples after having withstood the routine tests shall be subjected to the following acceptance test indicated below:

- a) Verification of dimensions.
- b) Temperature cycle test.
- c) Twenty four hours mechanical strength test(for string insulator units only when specified by the purchaser)
- d) Electro-Mechanical failing load test.
- e) Puncture test
- f) Porosity test and
- g) Galvanizing test.

3.3.3 Routine Test

- a) Visual examination.
- b) Mechanical routine test (for string insulator units only) and
- c) Electrical routine test (for string insulator units only)

3.4 Marking

3.4.1 Each Insulator shall be legibly and indelibly marked to show the following.

- a) Name and trade mark of the manufacturer.
- b) Month and year of manufacture
- c) Minimum failing load in KN.
- d) ISI Certification mark, if any.
- e) Property of WESCO
- f) Specific Parameters & Layout Conditions.

3.4.2 Marking on porcelain shall be printed and shall be applied before firing.

4. Packing

All insulators (without fittings) shall be packed in wooden crates suitable for easy but rough handling and acceptable for rail transport. Where more than one insulator is packed in a crate, wooden separators shall be fixed between the insulators to keep individual insulators in position without movement within the crate.

GUARANTEED TECHNICAL PARTICULARS OF 33KV PIN INSULATOR

Sl. No.	Description	Requirement	Bidder's offer
1	Name & Address of the Manufacture Name		
2	Normal working voltage	33KV(rms)	
3	High system voltage	36KV(rms)	
4	Visible Discharge Voltage dry PF	27KV(rms)	
5	Dry Power frequency 1 Minute withstand voltage	95KV(rms)	
6	Wet Power frequency 1 Minute withstand voltage	75KV(rms)	
7	Power Frequency puncture withstand voltage	180KV(rms)	
8	Impulse withstand voltage	170 KV	
9	Minimum failing load	10KN	
10	Minimum creepage distance	580mm	
11	Colour of glaze	Brown	
12	Weight per unit	To be submitted by bidder	
13	Size of Insulator		
14	Height	To be submitted by bidder	
15	Diameter	To be submitted by bidder	
16	Material of thimble	Lead	
17	Steel head	Large head	
18	Standard	IS: 731/1971	
19	Tolerance	Tolerance will be allowed as per IS:731/1971 or latest amendments if any	
20	Drawing & Sample	To be submitted by bidder	

PACKING: All insulators shall be packed in wooden crates suitable for easy but rough handling & acceptable for road transport. Where more than one insulator are packed in a crate, Separator shall be fixed between the insulators to keep individual insulator in position without movement in the crate

TECHNICAL SPECIFICATION OF 33KV 90KN (B&S TYPE) DISC INSULATOR

1. SCOPE:- This specification provides for design, manufacture, engineering, inspection and testing before dispatch packing and delivery for (destination) of disc. Insulators as per technical requirements furnished in this specification.

These insulators are to be used in suspension and tension insulators strings for the suspension and anchoring of the bus-bar conductors.

2. STANDARDS:-

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

Sl No.	Indian Standard	Description of Test	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 274 IEC 383
4	IS: 2071 Part-(I) Part-(II)	Method of High Voltage Testing	
5	IS: 2121	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 1000V	
	Part - I	General Requirement and Tests	BS: 3288
	Part - II	Dimensional Requirements	IEC: 120
	Part - III	Locking devices	IEC: 372
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/R272
10	IS: 3188	Dimensions for Disc Insulators	IEC: 305
11	IS: 4218	Metric Screw Threads	ISO/R 681969 R 261963, 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 437 NEMA Publication No.107/1964 CISPR
14	IS: 8269	Methods for switching impulse test on HV insulators	IEC: 506
15		Thermal mechanical performance test and mechanical performance test on string insulator units	IEC: 575
16	IEC	Long Rod Insulators	IEC IEC-433
17			

The standards mentioned above are available from:

Reference	Abbreviation	Name & Address
BS		BS British Standards, British Standards Institution, 101, Pentonville Road, N-19
IEC/ CISPR		International Electro technical commission Electro Technique International. 1, Rue de verembe
IS		Bureau of Indian Standards, Manak Bhavan, 9 Bahadurshah Zafar Marg, New Delhi
ISO		International Organisation for Standardization. Danish Board of Standardization Dansk Standardizing Sraat Aurehoegvej-12 DK- 2900 Helleprup
NEMA		National Electric Manufacturers Association, 1`55, East 44th. Street New York, NY 10017

3. PRINCIPAL PARAMETERS. DETAILS OF DISC INSULATORS:-

The Insulator strings shall consist of standard discs for use in three phases, 50 Hz 33/11KV S/s of CESU in a moderately polluted atmosphere. The discs shall be cap and pin, ball and socket type, radio interference 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.

4. SPECIFICATION DRAWINGS:-

The specification in respect of the disc insulators is described. This 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.

5. GENERAL TECHNICAL REQUIREMENTS:-

5.1 Porcelain:

The porcelain used in the manufacture of the shells shall be ivory white nonporous of high dielectric, mechanical and thermal strength, free from internal stresses blisters, laminations, voids, forgone matter imperfections or other defects which might render it in any way unusable for insulator shells. Porcelain shall remain unaffected by climatic conditions ozone, acid, alkalis, zinc or dust. The manufacturing shall be by the wet process and impervious character obtained by through verification.

The insulator shall be made of highest grade, dense, homogeneous, wet-process porcelain, completely and uniformly vitrified throughout to produce uniform mechanical and electrical strength and long life service. The porcelain shall be free from warping, roughness, cracks, blisters, laminations, projecting points foreign particles and other defects, except those within the limits of standard accepted practice. Surfaces and grooves shall be shaped for easy cleaning. Shells shall be substantially symmetrical.

5.2 Porcelain glaze:

Surface to come in contact with cement shall be made rough by stand glazing. All other exposed surfaces shall be glazed with ceramic materials having the same temperature coefficient of expansion as that of the insulator shell. The thickness of the glaze shall be uniform throughout and the colour of the glaze shall be down. The Glaze shall have a visible luster and smooth on surface and be capable of satisfactory performance under extreme tropical climatic weather conditions and prevent ageing of the porcelain. The glaze shall remain under compression on the porcelain body throughout the working temperature range.

5.3 METAL PARTS:

(i) 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.

(ii) Security Clips:

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

5.4 FILLER MATERIAL:

Cement is to be used as a filler of material for 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.

6. MATERIALS DESIGN AND WORKMANSHIP:

6.1 GENERAL:

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.

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.

6.2 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.

6.3 METAL PARTS:

i. The twin ball 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.

6.4 GALVANIZING:

All ferrous part shall be hot dip galvanized in accordance with IS: 2629. The zinc to be used for galvanizing shall conform to grade Zn 99.5 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.

6.5 CEMENTING:

The insulator design shall be such that the insulating medium shall not directly engage with hard metal. The surface of porcelain shall be 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.

6.6 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 be 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.).

6.7 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.

6.8 BALL AND SOCKET DESIGNATION:

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

7. 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.

8. 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.

9. INSULATOR STRINGS:

9.1 TYPE AND RATING:

The insulator strings shall be formed with standard discs described in this specification for use on 3-phases, 33KV, 50Hz effectively earthed systems in an atmosphere with pollution level as indicated in project synopsis. Tension insulator strings for use with Anchor / Tension towers are to be fitted with discs of 90 KN EMS level rating.

9.2 STRING SIZE:

The sizes of the disc insulator, the number to be used in different types of strings, their electromechanical strength and minimum nominal creep age distance shall be as given in this specification. Insulator units after assembly shall be concentric and coaxial within limits as permitted by Indian Standards. 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.

9.3 DIMENSIONAL TOLERANCE OF INSULATORS DISCS

It shall be ensured that the dimensions of the long rod insulators are within the limits as per relevant IEC/ISS.

10. TESTS (FOR DISC INSULATORS) :

The following tests shall be carried out on the insulator string and disc insulators.

10.1 TYPE TEST:

This shall mean those tests, which are to be carried out to prove the design, process of manufacture and general conformity of the material and product with the intents of this specification. These tests shall be conducted on a representative number of samples prior to commencement of commercial production. The Bidder shall indicate his schedule for carrying out these tests.

10.2 ACCEPTANCE TESTS:

This shall mean these tests, which are to be carried out on samples taken from each lot offered for pre-dispatch inspection for the purpose of acceptance of the lot.

10.3 ROUTINE TESTS:

This shall mean those tests, which are to be carried out on each insulator to check the requirements, which are likely to vary during production.

10.4 TESTS DURING MANUFACTURE:

Stage tests during manufacture shall mean those tests, which are to be carried out during the process of manufacture to ensure quality control such that the end product is of the designed quality conforming to the intent of this specification.

11. TEST PROCEDURE AND SAMPLING NORMS:

The norms and procedure of sampling for the above tests shall be as per the relevant Indian Standard or the internationally accepted standards. This will be discussed and mutually agreed to between the supplier and purchaser before placement of order. The standards and normal according to which these tests are to be carried out are listed against each test. Where a particular test is a specific requirement of this specification, the norms and procedure for the same shall be as mutually agreed between the supplier and the purchaser in the quality assurance programme.

11.1 TYPE TESTS:

The following type test shall be conducted on a suitable number of individual unit components, materials or complete strings.

i) On complete insulator string with hardware fittings Standard:

a) Power frequency voltage withstand test with corona control rings and under wet condition. BS: 137(Part-I) IEC:383

- b) Impulse voltage withstand test under dry condition
c) Mechanical strength test As per the Specification

ii) On Insulators

- a) Verification of dimensions. IS: 731
b) Thermal mechanical performance test: IEC:575
c) Power frequency voltage withstand and flashover BS:173
(i) dry (ii) wet.
d) Impulse voltage withstand flashover test (dry) IEC:383
Visible discharge test (dry)
e) All the type tests given under clause No.5.14
Above shall be conducted on single suspension and
Double Tension insulator string along with
Hard ware fittings IS:731

11.2 ACCEPTANCE TESTS: For insulator:

- a) Visual examination : IS:731
b) Verification of dimensions : IS: 731
c) Temperature cycle test : IS: 731
d) Galvanizing test : IS: 731
e) Mechanical performance test : IEC:575
f) Test on locking device for ball and socket coupling : IEC: 372
g) Eccentricity test
h) Electro-mechanical strength test : As per the specification
i) Puncture test : IS: 731
j) Porosity test : IS: 731

11.3 ROUTINE TESTS: For insulators:

- a) Visual inspection : IS: 731
b) Mechanical routine test
c) Electrical routine test : IEC:383

11.4 ADDITIONAL TESTS:

The purchaser reserves the right for carrying out any other tests of a reasonable nature at the works of the supplier/ laboratory or at any other recognized laboratory/ research institute in addition to the above mentioned type, acceptance and routine tests at the cost of the purchaser to satisfy that the material complies with the intent of this specification.

12. IDENTIFICATION MARKING:

- a) Each unit of insulator shall be legibly and indelibly marked with the trade mark of the supplier, the year of manufacture, the guaranteed combined mechanical and electrical strength in kilo-Newton abbreviated by 'KN' to facilitate easy identification and proper use.
b) The marking shall be on porcelain for porcelain insulators. The marking shall be printed and not impressed and the same shall be applied before firing.

13. QUALITY ASSURANCE PLAN:

The bidder here under shall invariably furnish following information along with his offer, failing which the offer shall be liable for rejection.

- a) Statement giving list of important raw materials, names of sub-suppliers for the raw materials, list of standards according to which the raw material are tested,

list of tests normally carried out on raw materials in presence of bidder's representative, copies of test certificates.

- b) Information and copies of test certificates as in (i) above in respect of bought out materials.
- c) List of manufacturing facilities available.
- d) Level of automation achieved and lists of area where manual processing exists.
- e) List of areas in manufacturing process, where stage inspections are normally carried out in quality control and details of such tests and inspection.
- f) Special features provided in the equipment to make it maintenance free.
- g) List of testing equipping available with the bidder for final testing of equipment specified and test plant limitation, if any, vis-à-vis the type, special, acceptance and routine tests specified in the relevant standards. These limitations shall be very clearly brought out in schedule of deviations from specified test requirements.

14. CHEMICAL ANALYSIS OF ZINC USED FOR GALVANIZING.

Samples taken from the zinc ingot shall be chemically analyzed as per IS: 209. The purity of zinc shall not be less than 99.95%.

15. TESTS FOR FORGINGS:

The chemical analysis hardness tests and magnetic particle inspection for forgings will be as per the internationally recognized procedures for these tests. The sampling will be based on heat number and heat treatment batch. The details regarding test will be as discussed and mutually agreed to by the supplier and purchaser in quality assurance programme.

16. TESTS ON CASTING:

The chemical analysis mechanical and metallographic tests and magnetic particle inspection for castings will be as per the internationally recognized procedures for these tests. The samplings will be based on heat number and heat treatment batch. The details regarding test will be as discussed and mutually agreed to by the supplier and purchaser in quality assurance programme.

17. HYDRAULIC INTERNAL PRESSURE TEST ON SHELLS:

The test shall be earned out on 100% shells before assembly. The details regarding test will be as discussed and mutually agreed to by the suppliers and purchaser in Quality Assurance Programme.

18. THERMAL MECHANICAL PERFORMANCE TEST:

The thermal mechanical performance test shall be carried out on minimum 15 number of disc insulators units as per the procedure given in IEC 575. The performance of the insulator unit shall be determined by the same standard.

19. ECCENTRICITY TEST:

The insulator shall be vertically mounted on a future using dummy pin and socket. A vertical scale with horizontal slider shall be used for the axial run out. The pointer shall be positioned in contact with the bottom of the outermost petticoat of the disc. The disc insulators shall be rotated with reference to the fixture and the slider shall be allowed to move up and down on the scale but always maintaining contact with the bottom of the outer most petticoats. After one full rotation of the disc the maximum and minimum position the slider has reached on the scale can be found out. Difference between the above two readings shall satisfy the guaranteed value for axial run out. Similarly using a horizontal scale with veridical slider the radial run out shall be measured. The slider shall be positioned on the scale to establish contact with the

circumstance of the disc insulator and disc insulator rotated on its future always maintaining the contact. After one full rotation of the disc the maximum and minimum position the slider has reached on the scale can be found out. Difference between the above two readings shall satisfy the guaranteed value for axial run out.

20. CRACK DETECTION TEST:

Crack detection test shall be carried out on each ball and pin before assembly of disc unit. The supplier shall maintain complete record of having conducted such tests on each and every piece of ball pin the bidder shall furnish full details of the equipment available with him for crack test and also indicate the test procedure in detail.

GUARANTEED TECHNICAL PARTICULARS OF 33KV 90KN DISC INSULATOR (B&S TYPE)

Sl No.	Description	Unit	Requirement	Bidders
1	Disc Diameter	Mm		
2	Disc spacing	Mm		
3	Creepage distance			
	(a) Total	Mm		
	(b) Protected	Mm		
4	Combined electromechanical strength	Kg.	90 KN	
5	Dry one minute power frequency withstand	KV		
6	Wet one minute power frequency withstand	KV		
7	Dry power frequency flashover	KV		
8	Wet power frequency flashover	KV		
9	Dry impulse withstand positive & negative	KV (Peak) 170		
10	Impulse flashover 1 x 50 microsecond (Positive)	KV (Peak)		
11	Impulse flashover 1 x 50 microsecond (Negative)	KV (Peak)		
12	Power frequency puncture voltage	KV	1.3 times the actual drive flashover	
13	High system voltage	KV	voltage of the unit	
14	Visible Discharge voltage	KV	27	
15	Weight / unit	Kg.		
16	Marketing		Each insulator will be legibly marked to show the	
			Name of the purchaser :-	
			Name of the trade mark:-	
			Month & Year of manufacturing	
			Minimum failing load	

PACKING:- All insulators shall be packed suitably for easy but rough handling & acceptable for road transport. Where more than one insulator is packed in a crate, separator shall be fixed between the insulators to keep individual insulator in position without movement in the crate.

PACKAGE-I
BOUDABEDA TO KANIHA 33/11KV P.S.S UNDER KANIHA ELECTRICAL SECTION

PART-A (ERECTION OF INTERPOSING POLE - 47Nos)

Sl. No.	Description of Items	Unit	Quantity	Unit supply Rate (Rs.)	Amount (Rs.)	Unit Erection Rate (Rs.)	Amount (Rs.)	Total (Rs.)
			1	2	3 = (1×2)	4	5 = (4×1)	6 = (3+5)
1	150x150mm, 10mtr long RS Joist Pole	No	47					
2	33KV V cross Arm (22Kg)	Kg	38					
3	Top bracket 100x50mm MS channel (2kg each)	Kg	38					
4	GI Back Clamp for V cross Arm 1.7Kg each	Kg	38					
5	33 KV G.I Pin	No	129					
6	33 KV Pin Insulator	No	129					
7	33 KV H/W Fitting (B & S) 90KN, 3Bolt	Set	54					
8	33 KV Disc Insulator (B & S) 90KN Porcelain	No.	162					
9	H.T. Stay set (Complete)	Set	10					
10	H.T. Stay Insulator	No.	10					
11	Fixing of stay set with 0.5Cum cement concrete foundation 1:3:6 size (900mmx600mmx900mm) using 40mm BHG metal with all labour and material except stay set , stay wire , stay insulator .	No.	10					
12	H.T. Stay clamp (1.95 K.g./ Pair)	Pair	10					
13	7/8 SWG Stay Wire 12kg /stay	K.g.	120					
14	Earthing of Support (Coil Type)	No.	43					

15	Couping of support section 15"x15" (3.9Cft) height 2'-6' (1' - 6" above G.L & 1' - 0' below G.L) in C.C 1:2:4 using 12mm BHG metal & curing for 5 days	Nos	43					
16	Red Oxide paint	Ltr	64.5					
17	All. Paint	Ltr	86					
18	Black Paint	Ltr	10.75					
19	GI barbed wire anti-climbing device 3Kg. Per support	Kg	129					
20	100x50x6mm MS channel for 5nos Cut point	K.g.	200					
21	Ms Nut , Bolt & Washer of different sizes	K.g.	98					
22	Sundries for survey tree cutting , small size nut bolt, Allm. Binding wire / tape & Danger Board 4 Nos. etc.	LS						
Total PART-A								

Total Rupees in words

Note: 1) Rates quoted are "FIRM"

2) Unit rates is inclusive of all taxes and duties

3) Any discrepancy in unit rate and amount, unit rate stands.

4) Any items not quoted/nil shall be treated as inclusive of

(Signature of the Bidder with Company Seal)

PART-B (FIXING OF RAISER -145 Nos.) (2.5Mtr each)

Sl. No.	Description of Items	Unit	Quantity	Unit supply Rate (Rs.)	Amount (Rs.)	Unit Erection Rate (Rs.)	Amount (Rs.)	Total (Rs.)
			1	2	3 = (1×2)	4	5 = (4×1)	6 = (3+5)
1	33KV Riser (100x50x6 MM M.S channel (2.5 Mtr long @ 9.2 K.g. per mtr @ Rs 65.00 per kg.))	No.	145					
2	Top bracket 100x50mm MS channel (2kg each)	Kg	145					
3	Ms Nut , Bolt & Washer of different sizes	Kg	435					
4	Sundries	LS						
Total PART-B								

Total Rupees in words

- Note: 1) Rates quoted are “FIRM”
 2) Unit rates is inclusive of all taxes and duties
 3) Any discrepancy in unit rate and amount, unit rate stands.
 4) Any items not quoted/nil shall be treated as inclusive of

TOTAL PRICE "A"+"B" =

Total Rupees in words

N.B: The unit rate quoted for a particular material in all parts of the BOQ shall remain same; otherwise the least rate shall be taken into account for evaluation of the bid.

(Signature of the Bidder with Company Seal)

PACKAGE-II
RENGALI GRID TO BOUDABEDA OF RENGALI ELECTRICAL SECTION

PART-A (ERECTION OF INTERPOSING POLE - 61Nos)

Sl. No.	Description of Items	Unit	Quantity	Unit supply Rate (Rs.)	Amount (Rs.)	Unit Erection Rate (Rs.)	Amount (Rs.)	Total (Rs.)
			1	2	3 = (1×2)	4	5 = (4×1)	6 = (3+5)
1	150x150mm, 10mtr long RS Joist Pole	No	61					
2	33KV V cross Arm (22Kg)	Kg	51					
3	Top bracket 100x50mm MS channel (2kg each)	Kg	51					
4	GI Back Clamp for V cross Arm 1.7Kg each	Kg	51					
5	33 KV G.I Pin	No	153					
6	33 KV Pin Insulator	No	153					
7	33 KV H/W Fitting (B & S) 90KN, 3Bolt	Set	60					
8	33 KV Disc Insulator (B & S) 90KN Porcelain	No.	180					
9	H.T. Stay set (Complete)	Set	5					
10	H.T. Stay Insulator	No.	5					
11	Fixing of stay set with 0.5Cum cement concrete foundation 1:3:6 size (900mmx600mmx900mm) using 40mm BHG metal with all labour and material except stay set, stay wire, stay insulator.	No.	5					
12	H.T. Stay clamp (1.95 K.g./ Pair)	Pair	5					
13	7/8 SWG Stay Wire 12kg /stay	K.g.	60					
14	Earthing of Support (Coil Type)	No.	51					

15	Couping of support section 15"x15" (3.9Cft) height 2'-6' (1' - 6" above G.L & 1' - 0' below G.L) in C.C 1:2:4 using 12mm BHG metal & curing for 5 days	Nos	51					
16	Red Oxide paint	Ltr	76.5					
17	All. Paint	Ltr	102					
18	Black Paint	Ltr	12.75					
19	GI barbed wire anticlimbing device 3Kg. Per support	Kg	153					
20	Ms Nut , Bolt & Washer of different sizes	K.g.	102					
21	Sundries for survey tree cutting , small size nut bolt, Allm. Binding wire / tape & Danger Board 4 Nos. etc.	LS						
Total PART-A								

Total Rupees in words

- Note: 1) Rates quoted are "FIRM"
 2) Unit rates is inclusive of all taxes and duties
 3) Any discrepancy in unit rate and amount, unit rate stands.
 4) Any items not quoted/nil shall be treated as inclusive of

(Signature of the Bidder with Company Seal)

PART-B (FIXING OF RAISER -134 Nos.) (2.5Mtr each)

Sl. No.	Description of Items	Unit	Quantity	Unit supply Rate (Rs.)	Amount (Rs.)	Unit Erection Rate (Rs.)	Amount (Rs.)	Total (Rs.)
			1	2	3 = (1×2)	4	5 = (4×1)	6 = (3+5)
1	33KV Riser (100x50x6 MM M.S channel (2.5 Mtr long @ 9.2 K.g. per mtr @ Rs 65.00 per kg.))	No.	134					
2	Top bracket 100x50mm MS channel (2kg each)	Kg	134					
3	Ms Nut , Bolt & Washer of different sizes	Kg	268					
4	Sundries	LS						
Total PART-B								

Total Rupees in words

Note: 1) Rates quoted are "FIRM"

2) Unit rates is inclusive of all taxes and duties

3) Any discrepancy in unit rate and amount, unit rate stands.

4) Any items not quoted/nil shall be treated as inclusive of

TOTAL PRICE "A"+"B"=

Total Rupees in words

N.B: The unit rate quoted for a particular material in all parts of the BOQ shall remain same; otherwise the least rate shall be taken into account for evaluation of the bid.

(Signature of the Bidder with Company Seal)



SECTION - V

ANNEXURES

ANNEXURE – I

BID PROPOSAL LETTER

Electrical Installation of Works under CESU

Bidder's Name and Address:

(in case of JV/Consortium, Name of JV/Consortium)

Bid Proposal Reference:

Person to be contacted:

Designation:

Telephone No. :

E-mail:

Fax No. :

To,

The Superintending Engineer (Elect)

Electrical Circle Dhenkanal, CESU

Dhenkanal

Dear Sir,

We the undersigned bidder have read and examined the detailed specification and bidding documents for execution of various electrical installations works and do herewith submit our bid for the project and We declare the following:

1.0 PRICES AND VALIDITY:

1.01 All the prices and price components stated in our bid proposal are firm and not subject to any price adjustment, in line with the bidding documents. All the prices and other terms and conditions of this proposal are valid for a period of 180 days from the date of opening of the bids. We further declare that prices stated in our proposal are in accordance with "Instructions to Bidders" of bidding documents.

1.02 We do hereby confirm that our bid prices as quoted in attached Schedules include all import duties and levies including license fees lawfully payable by us on imported items and other taxes, duties and levies applicable on bought – out components, materials, equipment and other items and confirm that any such taxes, duties and levies additionally payable shall be to our account.

1.03 We confirm that the Sales tax on Works Contract, Turnover Tax or any other similar taxes under the Sales Tax Act, as applicable, are included in our quoted bid price and there shall not be any liability on this account to the Purchasers. We understand that Purchasers shall, deduct such taxes at source as per the rules and issue TDS Certificate to us.

1.04 We confirm that, in our Bid Price, we have considered service tax in line with lawful prevalent practice.

1.05 Price components of various items are indicated in the B.O.Q. for the respective works.

1.06 We further declare that while quoting the price, the due credit under MODVAT scheme, re-christened as CENVAT scheme, as per relevant Government policies wherever applicable, have been taken into account.

1.07 We, having studied the bidding document in three volumes relating to taxes & duties and hereby, declare that if any income tax, charge on income tax or any other corporate tax is attracted under the law, we agree to pay the same.

1.08 We are aware that the Price schedules do not generally give a full description of the supplies to be made and work to be performed under each item and we shall be deemed to have read the Technical Specifications and other bidding documents and drawings to ascertain the full scope of work included in each item while filling in the related and prices. We agree that the entered rates and prices shall be deemed to include the full scope as aforesaid, including overheads and profits.

1.09 We understand that in the price schedule, if there is discrepancy between the unit price and total price, the same shall be corrected as per relevant provisions.

1.10 We declare that prices for items left blank in the schedules will be deemed to have been included in other items. The TOTAL for each schedule and the TOTAL of Grand summary shall be deemed to be the total price for executing the facilities and sections thereof in complete accordance with the contract, whether or not each item has been priced

2.0 CONSTRUCTION OF THE CONTRACT

2.01 We declare that we are making the offer on the basis of indivisible supply-cum- Erection contract on a single source responsibility basis.

3.0 BID SECURITY(EMD)

We are enclosing DD no. _____ dtd. _____ Amounting to Rs. _____ (Rupees only) issued by _____ bank _____ branch, payable on Dhenkanal towards Bid Security against our above Bid. The Bid Security amount has been computed by adding the Estimated Cost of the project for which we are submitting our bid.

4.0 EQUIPMENT PERFORMANCE GURANTEE

We declare that the ratings and performance figures of the equipment to be furnished and erected by us are guaranteed. The Guaranteed particulars of different equipments are enclosed along with our bid.

5.0 BID PRICING

We further declare that the prices stated in our proposal are in accordance with your Instruction of Bidders of Conditions of Contract, Volume-1 of the bid documents.

6.0 PRICE ADJUSTMENT

We declare that all the prices and price components stated in our offer are on FIRM price basis.

7.0 QUALIFICATION

We confirm having submitted the Qualification Data in original plus one copy, as required by you under clause 6.0 'Invitation for Bids'. Further we have filled in the information for qualification requirements. In case you require any further information in this regard, we agree to furnished the same in time

8.0 DEVIATIONS

8.01 We declare that the contract shall be executed strictly in a accordance with the specifications and documents except for the variations and deviations all of which have been detailed out exhaustively in the following schedules, irrespective of whatever has been stated to the contrary anywhere else in our proposal.

- a) Commercial Deviations Schedule
- b) Cost of withdrawal of Deviations on Critical
- c) Technical Deviation Schedule

8.02 We confirm that specified stipulation of following critical clauses are acceptable to us and no deviations/exceptions are taken on any account whatsoever in the following clauses :

- (a) Payment Terms _____ :

- (b) Bid Guarantee :
- (c) Contract Performance Guarantee :
- (d) Liquidated Damages for delay :
- (e) Prices and Price Adjustment :
- (f) Guarantee / Warrantees :

8.03 Further, we agree that the additional conditions, deviations, if any, found in our bid proposal documents other than those stated in attached Deviation Schedules, save that pertaining to any rebates offered, shall not be given effect to.

9.0 ADDITIONAL INFORMATION

We have included with this proposal additional information listed. We further confirm that such additional information does not imply any additional deviation beyond those covered in appropriate schedules and in case of any contradiction between these additional information and other provisions of Bid, the latter prevail.

10.0 GURANTEE DECLARATION

We guarantee that the equipment offered shall meet the rating and performance requirements stipulated in this specification. The Guarantee Declaration which shall attract levy of liquidated damages for non-performance are indicated in the relevant schedule.

11.0 BOUGHT-OUT AND SUB-CONTRACTED ITEM

We are furnishing herewith at appropriate Schedule, the detail of all major item of supply amounting to more than 10% of our Bid Price, which were propose subletting giving detail of the name of sub-contractor/sub-vendor and quantity for each item.

12.0 WORK SCHEDULE

If this proposal is accepted by you, we agree to submit engineering data, provide services and complete the entire work from time to time, in accordance with schedule indicated in the proposal. We fully understand that the time schedule stipulated in this proposal is the essence of the contract, if awarded. The completion schedule of the various major key phases of the work is indicated in the designated schedule.

13.0 CONTRACT PERFORMANCE GUARANTEE

We further agree that if our Bid is accepted we shall provide an irrevocable Bank guarantee towards Contract Performance Guarantee, of value equivalent to ten percent (10%) of the Contract Price initially valid up to the end of ninety (90) days after the end of the contract warranty period in the form of Bank Guarantee in your favour within 15 (fifteen) days from the date of 'Notice of Award of Contract' and enter into a formal agreement with you immediately thereafter.

14.0 CHECK LIST

We have included a check list duly filled in Schedule. We understand that only this check list, commercial and technical deviation will be read out during the part-I bid opening before the bidders present.

(For Joint Venture/consortium only) We, the Partners of joint venture/ consortium submitting their Bid, do agree and confirm that in case of Award of the Contract on the joint venture, we shall be jointly and severally responsible for the execution of the contract in accordance with contract terms and conditions.

We, hereby declare that only the persons or firms interested in this proposal as principals are named herein and that no other persons or firms other than those mentioned herein have any interest in this proposal or in the contract to be entered into if we are awarded the contract, and that this proposal is made without any

connection with any other person, firm or party likewise submitting a proposal and that this proposal is in all respect for and in good faith, without collusion or fraud.

Dated thisday of20.....

Thanking you,
Yours faithfully,

(Signature of the Authorised Signatory)

Printed Name

Designation

Common Seal off the company.....

(To be signed by lead partner case of Joint Venture) Signature of other partner (s)
in case of Joint Venture)

Printed Name

Designation

Date :

.....

Place :

(Written power of Attorney of all signatories of the bid to commit the Bidder must be enclosed with the Bid. In case of joint venture, the written Power of Attorney of all signatories from respective partners must be enclosed with the Bid. .

ANNEXURE - II

**FORM OF JOINT VENTURE/ CONSORTIUM AGREEMENT
(To be executed on non-judicial stamp paper of appropriate value to be purchased in the name of joint venture)**

PROFORMA OF JOINT VENTURE AGREEMENT BETWEEN
..... AND
FOR BID SPECIFICATION NO. OF (Purchaser).

THIS Joint Venture Agreement executed on this day of Two thousand and between M/s. a company incorporated under the laws of and having its Registered Office at (hereinafter called the "Lead Partner" which expression shall include its successors, executors and permitted assigns), M/s. a company incorporated under the laws of and having its Registered Office at (hereinafter called the "Partner" which expression shall include its successors, executors and permitted assigns) and M/s. a company incorporated under the laws of and having its Registered Office at (hereinafter called the "Partner" which expression shall include its successors, executors and permitted assigns) for the purpose of making a bid and entering into a contract (in case of award) against the Specification No.: for Construction of of (Purchaser)., a company incorporated under the having its. Registered Office at (here in after called the "Purchaser"). '

WHEREAS the Purchaser invited bids as per the above mentioned Specification for the design manufacture, supply and erection, testing and commissioning of Equipment Materials stipulated in the bidding documents under subject Package for

AND WHEREAS Annexure -A (Qualification Requirement of the Bidder), Section-SCC, Vol.-IA, forming part of the bidding documents, stipulates that a Joint Venture of two or more qualified firms as partners, meeting the requirement of Annexure-A, Section SCC as applicable may bid, provided the Joint Venture fulfills all other requirements of Annexure-A, Section SCC and in such a case, the BID shall be signed by all the partners so as to legally bind all the Partners of the Joint Venture, who will be jointly and severally liable to perform the Contract and all obligations hereunder.

The above clause further states that the Joint Venture agreement shall be attached to the bid and the contract performance guarantee will be as per the format enclosed with the bidding document without any restriction or liability for either party.

AND WHEREAS the bid has been submitted to the Purchaser vide proposal No dated by Lead Partner based on the Joint Venture agreement between all the Partners under these presents and the bid in accordance with the requirements of Annexure-A (Qualification Requirements of the Bidders), Section -SCC has been signed by all the partners.

NOW THIS INDENTURE WITNESSETH AS UNDER:

In consideration of the above premises and agreements all the Partners to this Joint Venture do hereby now agree as follows:

1. In consideration of the award of the Contract by the Purchaser to the Joint Venture partners, we, the Partners to the Joint Venture agreement do hereby agree that M/s shall act as Lead Partner and further declare and confirm that we shall jointly and severally be bound unto the Purchaser for the successful performance of the Contract and shall be fully responsible for the design, manufacture, supply, and successful performance of the equipment in accordance with the Contract.
2. In case of any breach of the said Contract by the Lead Partner or other Partner(s) of the Joint Venture agreement, the Partner(s) do hereby agree to be fully responsible for the successful performance of the Contract .and to carry out all the obligations and responsibilities under the Contract in accordance with the requirements of the Contract.
3. Further, if the Purchaser suffers any loss or damage on account of any breach in the Contract or any shortfall in the performance of the equipment in meeting the performance guaranteed as per the specification in terms of the Contract, the Partner(s) of these presents undertake to promptly make good such loss or damages caused to the Purchaser, on its demand without any demur. It shall not be necessary or obligatory for the Purchaser to proceed against Lead Partner to these presents before proceeding against or dealing with the other Partner(s).
4. The financial liability of the Partners of this Joint Venture agreement to the Purchaser, with respect to any of the claims arising out of the performance of non-performance of the obligations set forth in the said Joint Venture agreement, read in conjunction with the relevant conditions of the Contract shall, however, not be limited in any way so as to restrict or limit the liabilities of any of the Partners of the Joint Venture agreement.
5. It is expressly understood and agreed between the Partners to this Joint Venture agreement that the responsibilities and obligations of each of the Partners shall be as delineated in Appendix-I (*To be incorporated suitably by the Partners) to this agreement. It is further agreed by the Partners that the above sharing of responsibilities and obligations shall not in any way be a limitation of joint and several responsibilities of the Partners under this Contract.
6. This Joint Venture agreement shall be construed and interpreted in accordance with the laws of India and the courts of Dhenkanal under the Jurisdiction of Honorable High Court Of Orissa shall have the exclusive jurisdiction in all matters arising there under.
7. In case of an award of a Contract, We the Partners to the Joint Venture agreement do hereby agree that we shall be jointly and severally responsible for furnishing a contract performance security from a bank in favour of the Purchaser in the forms

acceptable to purchaser for value of 10% of the Contract Price in the currency/currencies of the Contract.

8. It is further agreed that the Joint Venture agreement shall be irrevocable and shall form an integral part of the Contract, and shall continue to be enforceable till the Purchaser discharges the same. It shall be effective from the date first mentioned above for all purposes and intents.

IN WITNESS WHEREOF. the Partners to the Joint Venture agreement have through their authorised representatives executed these presents and affixed Common Seals of their companies, on the day, month and year first mentioned above.

1. Common Seal of For Lead Partner
has been affixed in my/our presence
pursuant to the Board of Director's (Signature of authorised resolution
dated Representative)
Name...
Signature.. Designation
Name Common Seal of the company
Designation..... ..

2. Common Seal of For other Partners
has been affixed in my/our presence
pursuant to the Board of Director's (Signature of authorised
resolution dated representative)
Name... Signature..
Designation
Name Common Seal of the company
Designation..... ..

WITNESSES :

1..... (Signature) Name (official address)	2. (Signature) Name (Official address)
--	---

ANNEXURE – III

DECLARATION FORM

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Sir,

Having examined the above specifications together with the Tender terms and conditions referred to therein

1 – I / We the undersigned do hereby offer to supply the materials covered there on in complete shape in all respects as per the rules entered in the attached contract schedule of prices in the tender.

2 – I / We do hereby under take to have the materials delivered within the time specified in the tender.

3 – I / We do hereby guarantee the technical particulars given in the tender supported with necessary reports from concerned authorities.

4 – I / We do hereby certify to have purchased a copy of the tender specifications by remitting Cash /

Demand draft & this has been duly acknowledged by you in your letter No.....Dt.....

5 – I / We do hereby agree to furnish the composite Bank Guarantee in the manner specified /acceptable by CESU& for the sum as applicable to me / us as per clause No.13 of Annexure -V of this specification within fifteen days of issue of Letter of intent / Purchase Order , in the event of purchase order being decided in my / us favour , failing which I / We clearly understand that the said LOI / P.O. shall be liable to be withdrawn by the purchaser

Signed this.....Day of.....20...

Yours faithfully

(Signature of Bidder with Seal of Company)

(This form should be duly filled up by the Bidder & submitted along with the original copy of the Tender)

ANNEXURE – IV

**PROFORMA FOR CONTRACT PERFORMANCE BANK GUARANTEE
(To be executed on Rs. 100/- Non-judicial Stamp Paper purchased in the
name of the BG Issuing Bank)**

This Guarantee Bond is executed this ____ day of _____ by us, _____ Bank at _____ P.O. _____ P.S. _____ Dist _____ State _____

Whereas the **General Manager (Electrical) Electrical Circle Dhenkanal, CESU**, at College Bypass, NH-55, Dhenkanal, Pin-759001 a Body corporate constituted under the Electricity Act, 2003 (here in after called "Owner") has placed Work Order No. _____ Dt. _____ (hereinafter called "Agreement") with M/s (incase of Joint venture lead partner & Joint venture partner) _____ (hereinafter called "the Contractor") for supply and installation of _____ (description of the works) and whereas CESU has agreed (1) to exempt the Contractor from making payment of security deposit, (2) to release 100% payment of the cost of materials as per the said agreement and (3) to exempt from performance guarantee on furnishing by the Contractor to CESU a composite Bank Guarantee of the value of 10% (ten percent) of the Contract price of the said Agreement.

1. Now, therefore, in consideration of the Owner having agreed (1) to exempt the Contractor for making payment of security deposit, (2) to release 100% payment to the Contractor and (3) to exempt from furnishing performance guarantee in terms of the said Agreement as aforesaid, we the _____ Bank, Address _____ (code No. _____) (hereinafter referred to as "the Bank") do hereby undertake to pay to the Owner an amount not exceeding Rs. _____ (Rupees _____) only against any loss or damage caused to or suffered by the Owner by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement.

2. We, the _____ Bank do hereby undertake to pay the amounts due and payable under the guarantee without any demur, merely on a demand from the Owner stating that the amount claimed is due by way of loss or damage caused to or suffered by Owner by reason of any breach by the said Contractor(s) of any of the terms or conditions contained in the said Agreement or by the reason of any breach by the said Contractor's failure to perform the said Agreement. Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this Guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____ (Rupees _____) only.

3. We, the _____ Bank also undertake to pay to the Owner any money so demanded notwithstanding any dispute or dispute raised by the Contractor(s) in any suit or proceeding instituted/ pending before any court or Tribunal relating thereto our liability under this Agreement being absolute and irrevocable. The payment so made by us under this bond shall be valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, the _____ Bank further agree that the guarantee herein contain shall remain in full force and effect during the period that would be taken for the performance of the said Agreement and it shall continue to remain in force endorsable till all the dues of the Owner under by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till Owner certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said Contractor(s) and

accordingly discharge this guarantee and will not be revoked by us during the validity of the guarantee period.

Unless a demand or claim under this guarantee is made on us or with our (Dhenkanal) branch at _____ (Name, address of the Dhenkanal branch and code No.) in writing on or before _____ (date) we shall be discharged from all liability under this guarantee thereafter.

5. We, the _____ Bank further agree that the Owner shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Agreement or to extend time of performance by the said Contractor(s) and we shall not be relieved from our liability by reason of any such variation or extension being granted to the said Contractor(s) or for any forbearance act or omission on part of the Owner or any indulgence by the Owner to the said Contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would but for this provisions have effect of so relieving us.

6. The Guarantee will not be discharged due to change in the name, style and constitution of the Bank and or Contractor(s).

7. We, the _____ Bank lastly undertake not to revoke this Guarantee during its currency except with the previous consent of the Owner in writing.

Dated _____ the _____ day of Two thousand _____ .

Notwithstanding anything contained herein above.

Our liability under this Bank Guarantee shall not exceed Rs. _____ (Rupees _____) only.

The Bank Guarantee shall be valid up to _____ only.

Our branch at Dhenkanal (Name & Address of the Dhenkanal branch) is liable to pay the guaranteed amount depending on the filing of claim and any part thereof under this Bank Guarantee only and only if you serve upon us at our Dhenkanal branch a written claim or demand and received by us at our Dhenkanal branch on or before Dt. _____ otherwise bank shall be discharged of all liabilities under this guarantee thereafter.

For _____

(Indicate the name of the Bank)

N.B.:

- (1) Name of the Contractor:
- (2) No. & date of the purchase order/ agreement:
- (3) Amount of P.O.:
- (4) Name of Materials:
- (5) Name of the Bank:
- (6) Amount of the Bank Guarantee:
- (7) Name, Address and Code No. of the Dhenkanal Branch of the Issuing Bank:
- (8) Validity period or date up to which the agreement is valid:
- (9) Signature of the Constituent Authority of the Bank with seal:
- (10) Name & addresses of the Witnesses with signature:
- (11) The Bank Guarantee shall be accepted only after getting confirmation from the respective Banks.

ANNEXURE – V

**LETTER OF COMPLIANCE OF QUALIFYING REQUIREMENT
(In case of Bidder being a Single Firm)**

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Dear Sir,

I/We (Name of Bidder) are submitting the bid as a single firm. In support of our meeting the Qualifying requirements (QR) for bidders, stipulated in this tender specification, we furnish herewith the details/documents etc. as follows.

Table – A : Previous Works Experience :

Package Quoted for	Description of Proposed Works	Tender Qty	Qty Installed & Commissioned					Documents provided in proof of having executed the works during the relevant FY.
			Sl. No.	FY	Name of Client	WO Ref	Qty Installed	

Table – B : Average Annual Turnover :

Package Quoted for	Estimated Cost of the Package (Rs. in Lakh)	Annual Turnover Data (Rs. in Lakh)	
		Financial Year	Turnover (Rs. in Lakh)
		2017-18	
		2018-19	
		2019-20	
Total Estimated Cost of the packages quoted for		Average Turnover	

Table – C : Access to Credit Facility :

Package Quoted for	Estimated Cost of the Package (Rs. in Lakh)	Liquid Assets as on 31.10.18		Available Un Utilized Cash Credit Facility as on 31.10.18	
		Description	(Rs. in Lakh)	Description	(Rs. in Lakh)
		Cash at Bank		Un Utilized Cash Credit Balance	
		Short term Fixed Deposits			
One fifth of the total Estimated Cost.		Total Liquid Assets		Total Un Utilized Cash Credit Facility	

Note- 1 : Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.

2 : Bidder are required to furnish all the above data against their liquid assets from their concerned Bank as on 29.02.2020 in Bank letter head only.

I/We declare that we are fulfilling the qualifying requirements as per clause no. 2.0 of Section – I, Invitation for Bids (IFB).

For & on behalf of (Name of the Bidder).

ANNEXURE – VI

**LETTER OF COMPLIANCE OF QUALIFYING REQUIREMENT
(In case of Bidder being a Joint Venture / Consortium Firm)**

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Dear Sir,

I/We (Name of Bidder) are submitting the bid as a single firm. In support of our meeting the Qualifying requirements (QR) for bidders, stipulated in this tender specification, we furnish herewith the details/documents etc. as follows.

Name of the members of the JV / Consortium

- 1.
- 2.
- 3.

Table – A : Previous Works Experience : Name of the Member (any one member only)

Package Quoted for	Description of Proposed Works	Tender Qty	Qty Installed & Commissioned					Documents provided in proof of having executed the works during the relevant FY.
			Sl. No.	FY	Name of Client	WO Ref	Qty Installed	

Table – B : Average Annual Turnover : (All the members of JV/Consortium taken together)

Package Quoted for	Estimated Cost of the Package (Rs. in Lakh)	Annual Turnover (Rs. in Lakh)		Annual Turnover (Rs. in Lakh)		Total Annual Turnover (Rs. in Lakh)	
		Name of Member	1	Name of Member	2	Name of Member	2
		Financial Year	Turnover (Rs. in Lakh)	Financial Year	Turnover (Rs. in Lakh)	Financial Year	Turnover (Rs. in Lakh)
		2017-18		2017-18		2017-18	
		2018-19		2018-19		2018-19	
		2019-20		2019-20		2019-20	
		Total		Total		Total	
Total Estimated Cost of the packages quoted for						Average Turnover	

Table – C : Access to Credit Facility : (All the members of JV/Consortium taken together)

Package Quoted for	Estimated Cost of the Package (Rs. in Lakh)	Liquid Assets as on 31.10.18		Available Un Utilized Cash Credit Facility as on 31.10.18	
		Member	1	Member	1
		Description	(Rs. In Lakh)	Description	(Rs. in Lakh)
		Cash at Bank		Un Utilized Cash Credit Balance	
		Short term Fixed Deposits			
		Total Liquid Assets		Total Un Utilized Credit Facility	

		Liquid Assets as on 31.10.18		Available Un Utilized Cash Credit Facility as on 31.10.18	
		Member	2	Member	2
		Description	(Rs. In Lakh)	Description	(Rs. in Lakh)
		Cash at Bank		Un Utilized Cash Credit Balance	
		Short term Fixed Deposits		Others (Pl Specify)	
		Total Liquid Assets		Total Un Utilized Credit Facility	
		Liquid Assets as on 31.10.18		Available Un Utilized Cash Credit Facility as on 31.10.18	
		Total for JV	3	Total for JV	3
		Description	(Rs. In Lakh)	Description	(Rs. in Lakh)
		Cash at Bank		Un Utilized Cash Credit Balance	
		Short term Fixed Deposits			
One fifth of the total Estimated Cost.		Total Liquid Assets		Total Un Utilized Credit Facility	

Note-1: Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.

Note- 2 : Bidder are required to furnish all the above data against their liquid assets from their concerned Bank as on 31.10.18 in Bank letter head only.

I/We declare that we are fulfilling the qualifying requirements as per clause no. 2.0 of Section – I, Invitation for Bids (IFB).

For & on behalf of (Name of the Bidder).

(All members of JV / Consortium should sign).

Details of qualification and experience of key personnel proposed for carrying out the works

Sl. No	Name of Personnel	Degree / Diploma	Branch	Year of Passing	Past Experience				
					From	To	Name of Employer	Position Held	Responsibilities/ Relevant experience

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

- Note:** 1. Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.
 2. In case of Joint Venture, separate sheet for each partner of Joint Venture should be used.

Details for sub-contracting elements amounting to more than 10% of bid price

Sl. No	Item Description	Qty. proposed to be bought-out/ Sub- contracted	Source of Supply
1.			
2.			
3.			
4.			
5.			

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

ANNEXURE – VII

DETAILS OF COMMERCIAL DEVIATIONS

Bidder's Name & Address

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Dear Sirs,

Sub: Commercial Deviation for Construction of Name of the project.

The following are the Commercial Deviations and variations from and exceptions to the specifications and documents for the subject Project. These deviations and variations are exhaustive. Except for these deviations, the entire work shall be performed as per your specifications and documents

Volume/Clause	Brief Description	As specified in the Specification	Commercial deviation and variation to the specification

Date: (Signature)

Place: (Printed Name)

(Designation)

(Common Seal)

Note: 1.Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.

2. This will be read out during opening of Part-I Bid.

ANNEXURE – VIII

DETAILS TECHNICAL DEVIATIONS

Bidder's Name & Address

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Sub: Technical Deviation for Construction of Name of the Project.

The following are the Technical Deviations and variations from and exceptions to the specifications and documents for the subject package. These deviations and variations are exhaustive. Except for these deviations, the entire work shall be performed as per your specifications and documents

Volume/Clause	Ref./Page No.	As specified in the Specification / Relevant ISS	Technical deviation and variation to the specification

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

- Note:** 1. Continuation sheets, of like size and format, may be used as per Bidder's requirements and annexed to this Schedule.
2. The deviations and variations, if any, shall be brought out separately for each of the equipment.
3. This will be read out during opening of Part – I bid.

ANNEXURE – IX

WORK COMPLETION SCHEDULE

Bidder's Name & Address

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Dear Sirs,

We hereby declare that the following Work Completion Schedule shall be followed by us for the purpose of subject package

Sl.No	Description of Work	Period in Months(from the date of LOA)
1	Completion of detailed engineering	
2	Procurement of raw materials	
3	Establishment of site office	
4	Erection (a) Commencement (b) Completion	
5	Testing & Pre-commissioning (a) Commencement (b) Completion	
6	Commissioning	

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

ANNEXURE - X

CHECK LIST

To,
The Superintending Engineer (Elect)
Electrical Circle Dhenkanal, CESU
Dhenkanal

Dear Sir,

Sl. No.	Item Description	Status of the Submission of data	Remarks
1	2	3	4
1.	DD for EMD & Cost of Bid Doc	Yes /No	
2.	Qualifying Experience Data	Yes /No	
3.	Audited Balance Sheet	Yes /No	
4.	Bank Certificate (for liquid assets)	Yes /No	
5.	Valid Electrical License (MV/ HT)	Yes /No	
6.	ESI, EPF, PAN, GSTIN Registration	Yes /No	
7.	All Annexure as per requirement	Yes /No	
8.	JV agreement & Power of attorney (If any)		

N.B.:- The contents of this schedule will be read out during opening of Part-I Bid.

Signature of Bidder

Date & Seal:

N.B :-

1) The bid guarantee one original shall be furnished in sealed envelope appropriately superscribed thereon.

2) All Schedules pertaining to prices (originals) shall be furnished in a sealed envelope duly superscribed thereon. Similarly one set of copies of such schedules shall be given in a separate sealed envelope (these are not to be opened during opening of Part –I)

3) All other schedules, one set original shall be submitted in sealed envelope (these are to be opened during Part –I bid opening)

Place.....

Date.....

(Signature)

ANNEXURE – XI

SELF DECLARATION FORM

Name Of The Purchaser :.....

Tender No :.....

Sir,

1. I/We the undersigned do hereby declare that, I/We have never been blacklist and/or there were no debarring actions against us for any default in supply of material/ equipments or in the performance of the contract entrusted to us in any of the electricity utilities of India.
2. In the event of any such information pertaining to the aforesaid matter found at any given point of time either during the course of the contract or at the bidding stage, may bid/ contract shall be liable for truncation/ cancellation /termination without any notice at the sole discretion of the purchaser.

Place :

Date :

Yours faithfully,

Signature of the bidder with seal.
(This form shall be duly filled-up and signed
by the bidder and submitted along with
the original copy of the bid).