



TENDER DOCUMENT

SOUTHERN ELECTRICITY SUPPLY COMPANY OF ORISSA LTD.

CORPORATE OFFICE: COURTPETA: BERHAMPUR- 760004.

DISTRICT: GANJAM.

e-mail-procurementmailbox@rediffmail.com

Fax no.(0680)-2233261

FOR SUPPLY OF MATERIALS

TENDER NOTICE NO: 09/2011-12

The last date and time for submission of tender: 27.03.2012 up to 4.00 PM.

Date of opening of Technical bid :28.03.2012 at 11.00 AM

Superintending Engineer (Store & Proc.)
SOUTHCO, Berhampur.

VOLUME - I

Section – I

INVITATION FOR BIDS (IFB)

(Tender Notification: 09/2011-12)

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

1.0 Southern Electricity Supply Company of Orissa Ltd. (SOUTHCO) invites sealed tenders in Two part Bids (“Technical Bids” & “Commercial Bids”) for supply of different materials as given below from reputed manufacturers having requisite experience and financial capabilities as specified in clause 6.0 below. The sealed envelopes shall be duly superscribed as “**TENDER NOTICE No. 09/2011-12, Group No-----, due for opening on DT: -----.2011.**”

Group	Sl. No.	Description of materials/ Equipment	Quantity	Cost of tender document(₹)	Bid security (₹)
Group-A	1	11KV,5/5A,0.5 Class, CTPT Combined Metering Units	75 No.	6000/- + 4% VAT extra	1% (One percent) of the Tender value
	2	11KV,10/5A,0.5 Class, CTPT Combined Metering Units	1 No		
Group-B	1	EHV grade Transformer oil (New)	5000 Liters	2000/- + 4% VAT extra	1% (One percent) of the Tender
Group-C	1	Disc insulator ,45 KN, T&C	1300 No.	4000/- + 4% VAT extra	1% (One percent) of the Tender value
	2	11 KV Post insulator	400 No.		
	3	LT shackle insulator	400 No.		
	4	LT stay insulator	400 No.		
Group-D	1	11 KV Rubber hand gloves(Type-3)	600 Pairs	600/- + 4% VAT extra	1% (One percent) of the Tender value
	2	33 KV Rubber hand gloves(Type-4)	150 Pairs		
Group-E	1	(3X35+1X25) mm ² XLPE AB Cable	5.45 km	10,000/-+ 4% VAT extra	1% (One percent) of the Tender value
	2	(3X50+1X35) mm ² XLPE AB Cable	46.11 km		
	3	(3X50+1X35+1x16) mm ² XLPE AB Cable	1.5 km		
	4	(3X95+1X70+1x16) mm ² XLPE AB Cable	0.7 km		

2.0 The tender documents can be downloaded from the website **www.southcoorissa.com**. The bidder has to enclose a demand draft covering the cost of bid documents as stated above in a separate envelope with suitable superscription “Cost of Bid Documents : Tender Notice Ref : 09/2011-12” & group name.

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This envelope should accompany the Bid Documents and to be enclosed in the envelope containing the “Technical Bid” & “Bid Security”. **The Bidder can quote for anyone or all of the above group.**

- 3.0 Offers will be received up to 27.03.2012 up to 4.00 PM & the “Technical Bid” will be opened on Dt-28.03.2012 at 11.00 AM, in presence of the bidder or their authorized representatives of the bidders. After evaluation of Technical Bids, the eligible bidders shall be intimated to attend the Opening of Commercial Bids.
- 4.0 The schedule of specifications with detail terms & conditions are enclosed. It is the sole responsibility of the bidder to ensure that the bid documents reach this office on or before the cut off due date of tender opening.
- 5.0 The Purchaser reserves the right to reject any or all Tenders without assigning any reason thereof and alter the quantity of materials mentioned in the Tender documents at the time of placing purchase orders. Tender will be summarily rejected if:
- (i). Bid security @ 1% (One percent) of the Tender value is not deposited in shape of Bank Draft in favour of Southern Electricity Supply Company of Orissa Ltd., payable at Berhampur. Bid security if any submitted against previous Tenders, will not be adjusted towards Bid security against this Tender.
 - (ii). The offer does not contain “FOR, SOUTHCO price indicating break-up towards all taxes & duties”.
 - (iii). Complete Technical details are not enclosed.
 - (iv). Tender is received after due time due to any reason.
- 6.0 **Qualification Criteria:-**
- a) The bidder should be a manufacturer for the materials specified.
 - b) The bidder may quote for either one or more Groups. However, the bidder has to quote for 100% quantity of the materials of the Group(s) for which he is submitting his offer. Bidders depositing the Cost of tender documents, shall quote for the respective group, otherwise the bid shall be rejected.
 - c) **The bidder should have already supplied material(s) of similar rating/Type covering 100% of the quantity offered during any one of the last three financial years (2008-09, 2009-10 2010-11). In proof of the same the bidder has to submit copies of purchase orders and sales invoices.**

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- d) The offered material(s) should have been type-tested at CPRI/ NABL accredited laboratory. The bid shall accompany with type-test reports conducted at Central Power Research Institute / NABL accredited laboratory for the offered materials conducted within five years before the date of opening of the tender. **Bids not accompanied with type test reports conducted within five years shall not be considered for evaluation.**

7.0 **Project Completion Schedules:-**

Description	Date
Submission of Bids	27.03.2012 up to 4.00 PM
Opening of Technical Bids	28.03.2012 at 11.00 AM
Opening of Commercial Bid (To be confirmed later)	09.04.2012(Tentative Date)
Supply completion for any Group(s)	To be completed within 45 days from the date of issue of LOI / Purchase Order.

- 8.0 All correspondences with regard to the above shall be made to the following address:

Superintending Engineer (Store & Procurement), Corporate Office, SOUTHCO, Courtpeta, Berhampur, Ganjam – 760004.

SECTION – II
INSTRUCTION TO BIDDERS (ITB)
(Tender Notification: 09/2011-12)

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A. GENERAL

1.0 SOUTHCO, hereinafter referred to as the “Purchaser” is desirous of implementing the various works at their respective licensed area in the state of Orissa. The Purchaser has now floated this tender for procurement of Metering Units, EHV Grade Transformer Oil, Insulator, Rubber hand gloves and AB Cable for various ratings.

2.0 SCOPE OF WORK

The scope shall include Design, Manufacture, Shop Testing at works of different materials conforming to the Technical Specifications enclosed along with Packing, Forwarding, Freight and Insurance and Unloading and proper stacking at Purchaser’s stores.

3.0 DISCLAIMER

3.01 This Document includes statements, which reflect various assumptions, which may or may not be correct. Each Bidder should conduct its own estimation and analysis and should check the accuracy, reliability and completeness of the information in this Document and obtain independent advice from appropriate sources in their own interest.

3.02 Neither the Purchaser nor its employees will have any liability whatsoever to any Bidder or any other person under the law or contract, the principles of restitution or unjust enrichment or otherwise for any loss, expense or damage whatsoever which may arise from or be incurred or suffered in connection with anything contained in this Document, any matter deemed to form part of this Document, provision of Services and any other information supplied by or on behalf of Purchaser or its employees, or otherwise arising in any way from the selection process for the Supply.

3.03 Though adequate care has been taken while issuing the Bid document, the Bidder should satisfy itself that documents are complete in all respects. Intimation of any discrepancy shall be given to this office immediately.

3.04 This Document and the information contained herein are Strictly Confidential and are for the use of only the person(s) to whom it is issued. It may not be copied or distributed by the recipient to third parties (other than in confidence to the recipient’s professional advisors).

4.0 COST OF BIDDING

The Bidder shall bear all costs associated with the preparation and submission of its Bid and Purchaser will in no case be responsible or liable for those costs.

B. *BIDDING DOCUMENTS*

5.0 BIDDING DOCUMENTS

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- 5.01 The Scope of Work, Bidding Procedures and Contract Terms are described in the Bidding Documents. In addition to the covering letter accompanying Bidding Documents, the Bidding Documents include:

Volume - I

- | | |
|--|--------------------------|
| (a) Invitation for Bids (IFB) | -Section – I(Pg-2-5) |
| (b) Instructions to Bidders (ITB) | -Section – II(Pg-6-14) |
| (c) General Conditions of Contract (GCC) | -Section – III(Pg-15-23) |
| (d) Technical Specifications (TS) | -Section – IV(Pg-24-85) |

Volume – II

- | | |
|---|----------------------------|
| (a) Abstract for General Terms & Conditions | - Annexure – I(Pg-87) |
| (b) Declaration Form | - Annexure- II(Pg-88) |
| (c) CPBG Formats | - Annexure – III(Pg-89-91) |
| (d) Price Scheduled | - Annexure – IV(Pg-92) |
| (e) Technical Deviation | - Annexure – V(Pg- |
| (f) Commercial Deviation | - Annexure-VI |

- 5.02 The Bidder is expected to examine the Bidding Documents, including all Instructions, Forms, Terms and Specifications. Failure to furnish all information required by the Bidding Documents or submission of a Bid not substantially responsive to the Bidding Documents in every respect will may result in the rejection of the Bid.

6.0 AMENDMENT OF BIDDING DOCUMENTS

- 6.01 At any time prior to the deadline for submission of Bids, the Purchaser may, for any reasons, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bidding Documents by Amendment.
- 6.02 The Amendment shall be part of the Bidding Documents, pursuant to Clause 5.01, and it will be notified with corrigendum followed with notification in Southco website-www.southcoorissa.com,and will be binding on the bidders.
- 6.03 In order to afford prospective Bidders reasonable time in which to take the Amendment into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of Bids.

C. PREPARATION OF BIDS

7.0 LANGUAGE OF BID

The Bid prepared by the Bidder, and all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the English Language. Any printed literature furnished by the Bidder may be written in another Language, provided that this

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literature is accompanied by an English translation, in which case, for purposes of interpretation of the Bid, the English translation shall govern.

8.0 DOCUMENTS COMPRISING THE BID

The Bid prepared and submitted by the Bidder shall comprise the following components:

- (a) Bid Form, Price & other Schedules (STRICTLY AS PER FORMAT) and Technical Data Sheets completed in accordance with Clause 9.0, 10.0, 11.0 and Technical Specification;
- (b) All the Bids must be accompanied with the required bid security as mentioned in the Section-I against each tender.
- (c) Power of Attorney indicating that the person(s) signing the Bid have the authority to sign the Bid and thus that the Bid is binding upon the Bidder during the full period of its validity, in accordance with clause 12.0.

9.0 BID FORM

9.01 The Bidder shall complete an 'Original' and another one 'Copy' of the Bid Form and the appropriate Price & Other Schedules and Technical Data Sheets furnished in the Volume-II of the Bidding Documents.

9.02 Bid Security

Pursuant to Clause 8.0 (b) above, the bidder shall furnish, as part of its bid, a bid security amounting to **1 % (One percent)** of the total bid value (FOR Destination) as already specified in the Section-I. The bid security is required to protect the Purchaser against the risk of Bidder's conduct which would warrant the security's forfeiture.

The bid security shall be denominated in the currency of the bid, and shall be in the following form:

- (a) Bank Draft in favor of Southern Electricity Supply Company of Orissa Ltd., payable at Berhampur.

Unsuccessful bidders' bid security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiration of the period of bid validity.

The successful bidder's bid security will be discharged upon furnishing the performance security as per clause 29.0.

The bid security may 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:

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- (i) to sign & accept the Contract, or
- (ii) to furnish the required Composite performance Bank Guarantee within the stipulated period.

10.0 BID PRICES

- 10.01 Bidders shall quote with a break-up of prices for individual items. The total Bid Price shall also cover all the Supplier's obligations mentioned in or reasonably to be inferred from the Bidding Documents in respect of Design, Supply, Transportation to site, all in accordance with the requirement of Bidding Documents. The Bidder shall complete the appropriate Price Schedules included herein, stating the Unit Price for each item & total Price.
- 10.02 The prices offered shall be inclusive of all costs as well as Duties, Taxes and Levies paid or payable during execution of the supply work, break up of price constituents, should be there.
- 10.03 Prices quoted by the Bidder shall be "Firm" and not subject to any price adjustment during the performance of the Contract. A Bid submitted with an adjustable price quotation will be treated as non-responsive and rejected.

11.0 BID CURRENCIES

Prices shall be quoted in Indian Rupees Only.

12.0 PERIOD OF VALIDITY OF BIDS

- 12.01 Bids shall remain valid for **180** days from the date of opening of the Commercial Bid.
- 12.02 Notwithstanding Clause 12.01 above, the Purchaser may solicit the Bidder's consent to an extension of the Period of Bid Validity. The request and the responses thereto shall be made in writing by Fax/e-mail.

13.0 ALTERNATIVE BIDS

Bidders shall submit Bids, which comply with the Bidding Documents. Alternative Bids will not be considered. The attention of Bidders is drawn to the provisions of Clause 22.03 & 22.04 regarding the rejection of Bids, which are not substantially responsive to the requirements of the Bidding Documents.

14.0 FORMAT AND SIGNING OF BID

- 14.01 The original Bid Form and accompanying documents (as specified in Clause 9.0), clearly marked "Original Bid", plus one copy must be received by the Purchaser at the date, time and place specified pursuant to Clauses 15.0 and 16.0. In the event of any discrepancy between the original and the copies, the original shall govern.
- 14.02 The original and copy of the Bid shall be typed or written in indelible ink and shall be signed by the Bidder or a person or persons duly authorized to sign on behalf of the Bidder. Such authorization shall be indicated by written Power-of-Attorney accompanying the Bid.
- 14.03 The Bid shall contain no interlineations, erasures or overwriting except as necessary to correct errors made by the Bidder, in which case such corrections shall be initialed by the person or persons signing the Bid.

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D. SUBMISSION OF BIDS

15.0 SEALING AND MARKING OF BIDS

- 15.01 Bid submission: One original & one Copy (hard copies) of all the Bid Documents shall be sealed and submitted to the Purchaser before the closing time for submission of the bid. One set print out of Section III & Section IV of the Bid Document duly signed and stamped at every page shall have to be submitted along with the bid.
- 15.02 The Technical Documents and the Bid Security shall be enclosed in a sealed envelope and the said envelope shall be superscribed with "Technical Bid & Bid Security". Envelope/s containing the price bid shall be contained inside another sealed envelope with superscription "Price Bid". Both these envelopes shall be sealed inside another big envelope. **Bid submitted for Group shall be mentioned** . All the envelopes should bear the Name and Address of the Bidder and marking for the Original and Copy. The envelopes should be super-scribed with "Tender Notice No. & Due date of opening".
- 15.03 The Bidders have the option of sending the Bids in person. Bids submitted by Telex/Telegram/Fax will not be accepted. No request from any Bidder to the Purchaser to collect the proposals from Airlines/Cargo Agents etc shall be entertained by the Purchaser.
- 15.04 **The bidders quoting against the materials of Group-C and Group-D have to submit one no. sample materials of each type of the said Groups. Otherwise their bids will not be taken into account.**

16.0 DEADLINE FOR SUBMISSION OF BIDS

- 16.01 The original Bid, together with the required copies, must be received by the Purchaser at the address specified no later than **4.00 PM. on 27.03.2012**
- 16.02 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Documents in accordance with Clause 9.0, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

17.0 ONE BID PER BIDDER

Each Bidder shall submit only one Bid either by itself, or as a partner in a Joint Venture. A Bidder who submits or participates in more than one Bid will cause all those Bids to be rejected.

18.0 LATE BIDS

Any Bid received by the Purchaser after the deadline for submission of Bids prescribed by the Purchaser, pursuant to Clause 16.0, will be declared "Late" and rejected and returned unopened to the Bidder.

19.0 MODIFICATIONS AND WITHDRAWAL OF BIDS

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- 19.01 The Bidder is not allowed to modify or withdraw its Bid after the Bid's submission.
- 19.02 No Bid may be modified to the deadline for Bids.

E EVALUATION OF BID

20.0 PROCESS TO BE CONFIDENTIAL

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

21.0 CLARIFICATION OF BIDS

To assist in the examination, evaluation and comparison of Bids, the Purchaser 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.

22.0 PRELIMINARY EXAMINATION OF BIDS / RESPONSIVENESS

- 22.01 Purchaser 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.
- 22.02 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.
- 22.03 Prior to the detailed evaluation, Purchaser 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.
- 22.04 A Bid determined as not substantially responsive will be rejected by the Purchaser and / or the Purchaser and may not subsequently be made responsive by the Bidder by correction of the non-conformity.

23.0 EVALUATION AND COMPARISON OF BIDS

- 23.01 The evaluation of Bids shall be done based on the delivered cost competitiveness basis.
- 23.02 The evaluation of the Bids shall be a stage-wise procedure. The following stages are identified for evaluation purposes:

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In the first stage, the Bids would be subjected to a responsiveness check. The Technical Proposals and the Conditional ties of the Bidders would be evaluated.

Subsequently, the Financial Proposals along with Supplementary Financial Proposals, if any, of Bidders with Techno-commercially Acceptable Bids shall be considered for final evaluation.

- 23.03 The Purchaser'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) Supply Schedule
 - (b) Deviations from Bidding Documents

Bidders shall base their Bid price on the terms and conditions specified in the Bidding Documents.

The cost of all quantifiable deviations and omissions from the specification, terms and conditions specified in Bidding Documents shall be evaluated. The Purchaser will make its own assessment of the cost of any deviation for the purpose of ensuring fair comparison of Bids.

- 23.04 Any adjustments in price, which result from the above procedures, shall be added for the purposes of comparative evaluation only to arrive at an "Evaluated Bid Price". Bid Prices quoted by Bidders shall remain unaltered.

24.0 CONTACTING THE PURCHASER

- 24.01 From the time of Bid opening to the time of contract award, if any Bidder wishes to contact the Purchaser on any matter related to the Bid, it should do so in writing.
- 24.02 Any effort by a Bidder to influence the Purchaser and / or in the Purchaser's decisions in respect of Bid evaluation, Bid comparison or Contract Award, will result in the rejection of the Bidder's Bid.

25.0 THE PURCHASER'S RIGHT TO ACCEPT ANY BID AND TO REJECT ANY OR ALL BIDS

The Purchaser reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Purchaser's action.

26.0 AWARD OF CONTRACT

The Purchaser will award the Contract to the successful Bidder whose Bid has been determined to be the lowest - evaluated responsive Bid, provided further that the Bidder has been determined to be qualified to satisfactorily perform the Contract. Purchaser reserves the right to award order other bidders in the tender, provided it is required for progress of project & provided he agrees to come to the lowest rate.

27.0 THE PURCHASER'S RIGHT TO VARY QUANTITIES

The Purchaser reserves the right to vary the quantity i.e. increase or decrease the numbers/ quantities without any change in terms and conditions during the execution of the Order.

28.0 LETTER OF INTENT/ NOTIFICATION OF AWARD

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The letter of intent / Notification of Award shall be issued to the successful Bidder whose bids have been considered responsive, techno-commercially acceptable and evaluated to be the Lowest (L1). The successful Bidder shall be required to furnish a letter of acceptance within 7 days of issue of the letter of intent /Notification of Award by Purchaser.

29.0 CORRUPT OR FRAUDULENT PRACTICES

29.01 The Purchaser requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Purchaser:

- (a) Defines, for the purposes of this provision, the terms set forth below as follows:
 - (i) "Corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them, or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and
 - (ii) "Fraudulent practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Purchaser, and includes collusive practice among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the Purchaser of the benefits of free and open competition.
- (b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;
- (c) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded an contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, an contract.

29.02 Furthermore, Bidders shall be aware of the provision stated in the General Conditions of Contract.

SECTION - III
(GENERAL CONDITION OF CONTRACT)
(Tender Notification: 09/2011-12)

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GENERAL CONDITION OF CONTRACT (GCC)

1.0 General Instructions

- 1.01 All the Bids shall be prepared and submitted in accordance with these instructions.
- 1.02 Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Purchaser will in no case shall be responsible or liable for these costs.
- 1.03 The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred / sold to any other party.
- 1.04 The Purchaser reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Purchaser, the data in support of Tender requirement is incomplete.
- 1.05 The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Purchaser's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Purchaser.

2.0 Definition of Terms

- 2.01 "Purchaser" shall mean Southern Electricity Supply Company of Orissa Ltd. (SOUTHCO).
- 2.02 "Bidder" shall mean the firm who quotes against this bid document issued by the Purchaser. "Contractor" or "Seller" shall mean the successful Bidder and/or Bidders whose bid has been accepted by the Purchaser and on whom the "Letter of intent" is placed by the Purchaser and shall include his heirs, legal representatives, successors and permitted assigns wherever the context so admits.
- 2.03 "Site" shall mean the Electricity Distribution Area of the Company.
- 2.04 "Specification" shall mean collectively all the terms and stipulations contained in those portions of this bid document known as Instruction to Bidder, Bid form and other forms as per Volume - III, General Conditions of Contract, Specifications and the Amendments, Revisions, Deletions or Additions, as may be made by the Purchaser from time to time.
- 2.05 "Letter of Intent" shall mean the official notice issued by the Purchaser notifying the Contractor that his proposal has been accepted and it shall include amendments thereto, if any, issued by the Purchaser. The "Letter of Intent" issued by the Purchaser shall be binding on the "Contractor". The date of Letter of Intent shall be taken as the effective date of the commencement of contract.
- 2.06 "Purchase Order" shall mean the Purchase Order and amendments thereof and the drawings, specifications and other documents / papers referred to therein which shall constitute the "Contract".
- 2.07 "Month" shall mean the calendar month and "Day" shall mean the calendar day.

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- 2.08 “Codes and Standards” shall mean all the applicable codes and standards as indicated in the Technical Specification.
- 2.09 “Offer Sheet” shall mean Bidder's firm offer submitted to Purchaser in accordance with the specification.
- 2.10 “Contract” shall mean THE “letter of Intent” issued by the Purchaser.
- 2.11 “Contract Price” shall mean the price referred to in the “Letter of intent”.
- 2.12 “Contract Period” shall mean the period during which the “Contract” shall be executed as agreed between the Contractor and the Purchaser in the Contract inclusive of extended contract period for reasons beyond the control of the Contractor and/or Purchaser due to force majeure.
- 2.13 “Goods” shall mean all items to be supplied under Purchase Order whether raw materials, processes materials, equipment, fabricated products, drawings or other documents as applicable.
- 2.14 “Store” shall mean the Purchaser store as defined elsewhere in this tender document.

3.0 Contract Documents & Priority

- 3.01 Contract Documents: The Specification, terms and conditions of the contract shall consist solely of these Tender conditions and offer sheet.
- 3.02 Priority: Should there be any discrepancy between any term hereof and any term of the Offer Sheet, the terms of these tender document shall prevail.

4.0 Scope of Work

- 4.01 The “Scope of Work” shall be on the basis of Bidder’s responsibility, completely covering the obligations, responsibility and workmanship, provided in this Bid Enquiry whether implicit or explicit.
- 4.02 The Purchaser reserves the right to vary the quantity i.e increase or decrease, which shall be communicated to successful bidder during project execution.
- 4.03 All relevant drawings, data and instruction manuals and other necessary inputs shall be under the scope of contract.

5.0 General Requirements

- 5.01 The contractor shall supply, deliver best quality goods.
- 5.02 The company also reserves the right to add from the scope of work or delete from the scope of work so assigned to the Supplier, if the circumstances so warrant.
- 5.03 The contractor shall be responsible for loading and unloading of all materials with proper material handling equipment.

6.0 Quality Assurance and Inspection

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- 6.01 Immediately on award of contract, the bidder shall prepare detailed quality assurance plan / test procedure identifying the various stages of manufacture, quality checks performed at each stage, raw material inspection and the Customer hold points. The document shall also furnish details of method of checking, inspection and acceptance standards / values and get the approval of Purchaser before proceeding with manufacturing. However, Purchaser shall have the right to review the inspection reports, quality checks and results of contractors in house inspection department which are not Customer hold points and the contractor shall comply with the remarks made by purchaser or his representative on such reviews with regards to further testing, rectification or rejection, etc.
- 6.02 Witness and Hold points are critical steps in manufacturing, inspection and testing where the contractor is obliged to notify the Purchaser in advance so that it may be witnessed by the Purchaser. Final inspection is a mandatory hold point. The contractor has to proceed with the work past a hold point only after clearance by purchaser or a witness waiver letter from Purchaser.
- 6.03 The performance of waiver of QA activity by Purchaser at any stage of manufacturing does not relieve the contractor of any obligation to perform in accordance with and meet all the requirements of the procurement documents and also all the codes & reference documents mentioned in the procurement document nor shall it preclude subsequent rejection by the purchaser.
- 6.04 On completion of manufacturing the items can be dispatched only after issue of shipping release by the Purchaser.
- 6.05 All testing and inspection shall be done without any extra cost.
- 6.06 Purchaser reserves the right to send any material out of the supply to any recognized laboratory for testing. In case the material is found not in order with the technical requirement / specification, the charges of testing along with any other penalty which may be levied is to be borne by the bidder. To avoid any conflict the Seller is advised to send his representative to the stores to see that the material sent for testing is being sealed in the presence of bidder's representative.

7.0 Packing, Packing List & Marking

- 7.01 **Packing:** Seller shall pack or shall cause to be packed all Commodities in such a manner as shall be reasonably suitable for shipment by road or rail to Orissa Distribution Companies without any risk of damage in transit. The packing shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage.
- 7.02 **Packing List:** One copy of the packing list shall be enclosed in each package delivered. There shall also be enclosed in one package a master packing list identifying each individual package, which is part of the shipment. On any packaging where it is not feasible to place the packing list inside the container, all pertinent information shall be stenciled on the outside and will thus constitute a packing list.
- 7.03 **Marking:** Seller shall mark each container, box or package for easy identification of his materials as follows:

Commodity Name:

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Name of the Supplier:

Net Weight:

Size:

8.0 Commissioning Spares: The Seller shall replace, free of cost, any spares which may be found defective at the time of commissioning.

9.0 Price Basis

Bidders shall quote individual price breakup for the quoted items.

The price shall be inclusive of all taxes, Duties and other Levies of whatsoever nature, transportation to site and vice versa and in-transit Insurances.

The above Prices shall also include unloading and proper stacking at/ from Purchaser Stores to site / stores.

10.0 Terms of Payment

10.01 The Payment shall be made as under:

- a) 100% Payment with taxes & duties shall be made after receipt of goods in our specified stores in good condition subject to detailed verification thereof and approval of guarantee & test certificate.
- b) For claiming 100% payment, a 10% Composite Performance Bank Guarantee of the entire order value is to be provided which shall remain valid for a period beyond 90 days from the warranty period as per clause no. 12.0.
- c) All Payments shall be made after certification from Purchaser's Engineer Incharge. All Payments are subject to receipt of correct Documents.

11.0 Price Validity

All bids submitted shall remain valid, firm and subject to unconditional acceptance by Purchaser for **180** days post bid opening date. For awarded Contract, the prices shall remain valid and firm till contract completion.

12.0 Warranty / Guarantee

- 12.01 a. The bidder shall guarantee for the equipments/workmanship of Group-B, Group-C, Group-D and Group-E for a minimum period of **24 months** from the date of commissioning **or 30 months** from the date of last receipt of consignments at the Purchaser's stores, whichever is earlier.
- b. The bidder shall guarantee for the equipments/workmanship of Group-A for a minimum period of **60 months** from the date of commissioning **or 66 months** from the date of last receipt of consignments at the Purchaser's stores, whichever is earlier.
- 12.02 The manufacturer shall guarantee to replace or repair to the satisfaction of the purchaser the defective parts at site free of cost within the above period. Should however, the manufacturer fails to do so within a reasonable time, the purchaser reserves the right to effect repair or replacement and recover such charges for repair or replacement from the contractor.

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12.03 If during the defect liability period any services performed found to be defective, these shall be promptly rectified by contract its own cost (including the cost of dismantling and reinstallation) on the instruction of Purchaser.

13.0 Composite Performance Bank Guarantee

13.01 Within Fifteen (15) days from the date of the Award notice, Seller shall submit a Composite Performance Bank Guarantee (CPBG) in favor of Purchaser equivalent to Ten percent (10%) of the total price of the Contract. The CPBG shall be valid for a period beyond 90 days from the warranty period as per clause no. 12.0.

13.02 The Performance Bank Guarantee established under Clause 13.01 shall be forfeited without recourse to the seller and payable against the presentation by Purchaser to the bank with a claim that the seller has failed to comply with any term or condition set forth in the Contract.

13.03 The Performance Bank Guarantee established under will be automatically and unconditionally forfeited without recourse if Purchaser in its sole discretion determines that Seller has failed to comply with any Terms or Condition set forth in the contract.

13.04 The Composite Performance Bank Guarantees will be released without interest within thirty (30) days from the last date up to which the Performance Bank Guarantee has to be kept valid (as defined in Clause 13.01).

14.0 TECHNICAL INFORMATION / DATA.

The company and the contractor, to the extent of their respective rights permitting to do so, shall exchange such technical information and data as is reasonably required by each party to perform its obligations and responsibilities. The company and the contractor agree to keep each other in confidence and to use the same degree of care as it uses with respect to its own proprietary data to prevent its disclosure to third parties of all technical and confidential information. The technical information, drawings, records and other document shall not be copied, transferred, traced or divulged and / or disclosed to third party in full / part not misused in any other form. This technical information, drawing etc. shall be returned to the company with all approved copies and duplicates. In the event of any breach of this contract, the contractor shall indemnify the company against any loss, cost of damages or claim by any party in respect of such breach

15.0 Effective Date of Commencement of Contract:

The date of the issue of the Letter of Intent/Purchase Order which ever is earlier shall be treated as the effective date of the commencement of contract.

16.0 Taxes & Duties:

All taxes, duties, levies of whatsoever nature, octroi, turnover tax, service tax, income tax, work contract tax etc., levied by State or Central Governments or local bodies shall be to the supplier's account including any taxes, duties and levies which may be levied fresh by the Governments during currency of the Contract. The supplier shall furnish their Excise/Sales Tax registration number, PAN No. etc. in the bid documents as well as Invoice/Challans etc.

17.0 Delivery Schedule:

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The full quantity of the equipments shall be delivered in a phased manner but not later than **45 days** from the date of issue of Letter of Award / Purchase Order which ever is earlier. The bidder must submit their delivery plan accordingly.

18.0 Time – The Essence of Contract

The time and the date of completion of the “Supply” as stipulated in the Letter Of Intent / Purchase order issued to the Contractor shall be deemed to be the essence of the “Contract”. The Supply has to be completed not later than the aforesaid Schedule and date of completion of supply.

19.0 Liquidated Damages (LD)

- 19.01 If supply of items / equipments is delayed beyond the supply schedule as stipulated in clause no. 17.0 or as mutually decided and stated in the purchase order/LOI, then the bidder shall be liable to pay to the Purchaser as LD for such delay, a sum of 0.5 % of the contract price for every week delay or part thereof. The LD shall be computed on the undelivered value of goods as per the delivery schedule.
- 19.02 The total amount of LD for delay under the contract will be subject to a maximum of five percent (5%) of the contract price
- 19.03 The Purchaser may, without prejudice to any method of recovery, deduct the amount for such damages from any amount due or which may become due to the Contractor or from the Performance Bank Guarantee or file a claim against the contractor.

20.0 The Laws and Jurisdiction of Contract:

- 20.01 The laws applicable to this Contract shall be the Laws in force in India.
- 20.02 All disputes arising in connection with the present Contract shall be settled amicably by mutual consultation failing which shall be finally settled as per the rules of Arbitration and Conciliation Act, 1996 at the discretion of Purchaser. The jurisdiction of arbitration shall be at Berhampur, Orissa, India

21.0 Events of Default

Each of the following events or occurrences shall constitute an event of default ("Event of Default") under the Contract:

- (a) Seller fails or refuses to pay any amounts due under the Contract;
- (b) Seller fails or refuses to deliver Commodities conforming to this Bid document / specifications, or fails to deliver Commodities within the period specified in P.O. or any extension thereof
- (c) Seller becomes insolvent or unable to pay its debts when due, or commits any act of bankruptcy, such as filing any petition in any bankruptcy, winding-up or reorganization proceeding, or acknowledges in writing its insolvency or inability to pay its debts; or the Seller's creditors file any petition relating to bankruptcy of Seller;

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- (d) Seller otherwise fails or refuses to perform or observe any term or condition of the Contract and such failure is not remediable or, if remediable, continues for a period of 30 days after receipt by the Seller of notice of such failure from Purchaser.

22.0 Consequences of Default.

- (a) If an Event of Default shall occur and be continuing, Purchaser may forthwith terminate the Contract by written notice.
- (b) In the event of an Event of Default, Purchaser may, without prejudice to any other right granted to it by law, or the Contract, take any or all of the following actions;
- (i) Present for payment, to the relevant bank the Performance Bank Guarantee;
 - (ii) Purchase the same or similar Commodities from any third party; and/or
 - (iii) Recover any losses and/or additional expenses Purchaser may incur as a result of Seller's default.

23.0 Force Majeure

- 23.01 The term "Force Majeure" as employed herein include, but are not limited to, acts of God or force of nature, landslide, earthquake, flood, fire, lightning, explosion, major storm (hurricane, typhoon, cyclone etc.) or major storm warning, tidal wave, shipwreck and perils of navigation, act of war (declared or undeclared) or public enemy, strike (excluding employee strikes, lockouts or other industrial disputes or action solely among employee of Contractor or its subcontractors) act or omission of sovereign states or those purporting to represent sovereign states, blockade, embargo, quarantine, public disorder, sabotage, accident or similar events beyond the control of the parties or either of them.

Force Majeure shall not include occurrences as follows:

- (a) Late delivery of materials caused by congestion at Seller's facilities or elsewhere, an oversold condition of the market, inefficiencies, or similar occurrences.
- (b) Late performance by Seller and/or Sub-Seller caused by unavailability of raw materials, supervisors or labour, inefficiencies or similar occurrences.
- (c) Mechanical breakdown of any item of Seller's or its Sub-Seller's equipment, plant or machinery.
- (d) Delays due to ordinary storm or inclement weather or
- (e) Non-conformance by Sub-Seller.

Unless the delay arises out of a Force Majeure occurrence and is beyond both Seller's and Sub-Seller's or Seller's control and an alternate acceptable source of services, equipment or material is unavailable. Additionally, Force Majeure shall not include financial distress of Seller or any Sub-Seller.

- 23.02 In the event of either party being rendered unable by Force Majeure to perform any obligation required to be performed by them under the Contract, the relative obligation of the party affected by such Force Majeure shall be suspended for the period during which such cause lasts. Time for performance of the relative obligation suspended by Force Majeure shall then stand extended by the period for which cause lasts.

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23.03 Upon the occurrence of any Force Majeure event, the party so affected in the discharge of its obligation shall promptly, but no later than seven (7) days give written notice of such event to the other party. The affected party shall make every reasonable effort to remove or remedy the cause of such Force Majeure or mitigate its effect as quickly as possible. If such occurrence results in the suspension of all or part of the Work for a continuous period of more than, the parties shall meet and determine the measures to be taken.

23.04 Any delay or failure in performance by either party hereto shall not give rise to any claims for damages or loss of anticipated profits it, and to the extent, such delay or failure is caused by Force Majeure.

24.0 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.

25.0 Third Party Insurance

Contractor shall take the Insurance of Equipment during Transit. Any Claim pertaining to this shall be the responsibility of the Contractor.

26.0 Recoveries

When ever under this contract any money is recoverable from and payable by the bidder, the purchaser shall be entitled to recover such sum by appropriating in part or in whole by detecting any sum due to which any time thereafter may become due from the Seller in this or any other contract. Should the sum be not sufficient to cover the full amount recoverable the bidder shall pay to the purchaser on demand the remaining balance.

27.0 Waiver

Failure to enforce any condition herein contained shall not operate as a waiver of the condition itself or any subsequent breach thereof.

28.0 Indemnification

28.01 Notwithstanding contrary to anything contained in this Tender, Contractor shall at his costs and risks make good any loss or damage to the property of the Purchaser and/or the other Contractor engaged by the Purchaser and/or the employees of the Purchaser and/or employees of the other Contractor engaged by the Purchaser whatsoever arising out of the negligence of the Contractor while performing the obligations under this contract.

28.02 Subject to this Clause 23.0 Purchaser shall, at its sole cost and expense, defend, indemnify and hold harmless Contractor and his assignees /or the employees of the Contractor whatsoever arising out of the negligence or willful act or omission or from the default of the Purchaser in the performance of the Contractor.

SECTION - IV

TECHNICAL SPECIFICATION OF DIFFERENT MATERIALS

**TECHNICAL SPECIFICATION FOR GROUP-A
MATERIALS**

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**TECHNICAL SPECIFICATION FOR 11KV CTPT COMBINED,OIL COOLED
METERING UNITS OF 0.5 CLASS**

1. SCOPE :

This specification covers design, engineering, manufacture, *assembly, stage testing, inspection*, testing before dispatch, supply and delivery of 11kV & 33kv CT PT Combined Metering unit Sets of class of accuracy **0.5** as per the particulars given in the schedule attached.

2. STANDARD :

Except where modified by this specification the component parts of the equipment shall comply with the following ISS available (the latest versions).

Current Transformers	: IS 2705/1992
Potential Transformers	: IS 3156/1992
HV Porcelain Bushing	: IS 2099/1986
Oil	: IS 335/1983
Galvanization	: IS 2633
Primary Terminals	: IS 10601

3. TYPE FOR 11 KV : The metering transformer equipment should be of pole mounting type for outdoor use. They are to be used in 11kV Three Phase with solidly earthed neutral and suitable for 3 Ø 4 Wire 50 cycles network. The equipment is required for operation of HT Trivector Meters and should be oil cooled.

The CTPT sets shall have the following ratings.

- i. Rated Voltage : 11 KV
- ii. Highest system voltage : 12 KV
- iii. Insulation level : 12 KV
- iv. Standard Impulse withstand voltage : 75 KV Peak
- v. One minute power frequency withstand Voltage
 - a. Primary: 28 KV
 - b. Secondary: 3 KV
- vi. Short time **thermal current** and its duration
 - a. 6 KA for 1 sec for CT ratio below 50/5 A
 - b. 13 KA for 1 sec for CT ratio \geq 50/5 A
- vii. Class of Accuracy: 0.5 (Negative errors will not be acceptable)
- viii. Rated burden per Phase
 - a. For CTs : 15 VA

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- b. For PTs : 50 VA
- ix. Frequency : 50 Hz
- x. Maximum attainable winding temperature =80 ° C
- xi. Minimum Phase to Phase distance=255 mm
- xii. Shortest distance between metal part & earth = 190 mm
- xiii. Creepage distance of HV bushing 300mm (Min)
- xiv. Gauge of MS Tank Min 5mm for top cover & 3.15 mm bottom & all other side
- xv. Entire tank shall be hot dip galvanized
- xvi. Bi-metallic terminal connector with a nut, plane washer, spring washer & check nut suitable for aluminium conductor required for different rating of metering units. Six no. to be provided with each metering units.
- xvii. Minimum volume of oil shall not be less than 45 Ltr.

5. DESIGN:

- a. The equipment shall be designed to ensure satisfactory operation under all conditions of service to facilitate easy inspection, cleaning and repairs.
- b. The design shall incorporate every reasonable precaution and provisions for safety of all those concerned in the operation and maintenance of the equipment. A pressure relief valve shall be invariably provided to the CTPT set. It shall be provided at the top cover of the tank.
- c. All outdoor apparatus shall be so designed that water cannot collect at any point and enter the CT/PT set. The top cover of the tank, secondary terminal cover, inspection chamber cover plate may be designed accordingly.
- d. All connections and terminals shall be of sufficient size for carrying the specified currents continuously without undue heating.
- e. All bolts, nuts, washers in contact with non-ferrous parts shall be of brass.
- f. All ferrous parts including bolts & nuts liable to corrosion, forming integral part of the equipment shall be smoothly and continuously hot dip galvanized.
- g. The secondary terminal box with double door arrangement (Inner & Outer) detail at (10-J), inspection cover and oil gauge shall be provided with MU.
- h. The core shall be high grade non-ageing electrical silicon laminated steel of low hysteresis loss and high permeability to ensure high accuracy, at both normal and over current/ voltage.
- i. All winding shall be of insulated high grade Electrolytic copper wire and the manufacturing of the units shall be done in completely closed and air-conditioned room otherwise Fibre glass insulation sleeves are to be provided for primary winding. Details of winding and core shall be furnished.
- j. The CTPT set should have Three CTs and One three phase PTs with star / star **connection.**

6. SEALING :

Sealing bolts for sealing at 4 points on the secondary terminal box (both inner & outer door), inspection cover, the top cover of the tank shall be **provided**. This may be made by

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providing a hole *on tail of corner bolts* of adequate size to pass the sealing wire of above 13 SWG.

7. **FLUCTUATION IN VOLTAGE AND FREQUENCY** : For continuous operation, entire equipment shall be subjected to variation of voltage up to (+)20% to (-) 30% and frequency of (±) 5 %.

8. INSTRUMENT TRANSFORMERS :

- a) The voltage and current transformers shall have normal continuous rating as per the schedule of requirement.
- b) The voltage transformer shall be so designed that the increased magnetizing currents due to any persisting over voltage, does not produce injurious over heating. Phase barriers shall be provided.
- c) The peak value of the rated dynamic current shall not be less than 2.5 times the rated short time thermal current unless stated otherwise. (6.62 of ISS : 2705/Part-I of 1992, latest version).
- d) Modified polyester enamel copper wire is to be used for winding and it shall conform to IS-4800/Part-V (latest version).
- e) The terminals of the instrument transformer shall be clearly marked by distinctive letters as stated in Annex "C" of ISS : 3156/Part.I/1992 (latest version) for voltage transformer and Annex "C" of IS-2705/Part.I/1992 (latest version) for current transformers.
- f) The winding shall be neatly laid and anchored.
- g) The metering set tank and other metal parts shall be galvanised both inside & outside as per latest IS applicable.

9. INCOMING SIDE:

- a) **TERMINALS** : Brass rods 12 mm dia up to 20A & 16mm dia >20A for Primary and 6 mm dia for secondary.
- b) **Bushing for outgoing side of CT/PT set** :
The porcelain portion of HT bushings shall be of standard make and conform to IS-2099/1996. The dimensions of the bushings shall conform to IS- 3347/Part.III/1972. The minimum phase-to-phase clearance shall be as per IS/GTP.

The tests as per IS-2099/1962 shall be conducted on the MU bushings as detailed below:

- i. Dry flash over voltage.
- ii. Wet flash over voltage
- iii. Dry 1 Minute withstand voltage
- iv. Impulse withstand voltage (1.2/50 Micro Seconds –ve wave)
- v. Manufacturer's test certification may be furnished for every lot of offer

The bushings shall be of reputed manufacturers like M/s. Jayashree Insulators, M/s. WS Industries, M/s. BHEL, M/s. Allied Ceramics, M/s. India Potteries, M/s. Venkateshwara Ceramic Industries and M/s. IEC which are having complete testing facilities. The firm has to furnish the bushing test certificates during inspection.

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The bushing stems shall be provided with suitable bimetallic connectors so as to connect the jumper without disturbing the bushing stem. The bush rod stem length should be at least 40 mm and 3 nuts with 2 flat washers of brass material should be provided with each bush rod.

10. STEEL TANK :

- a) The oil filled container incorporating the voltage transformers and current transformers should be fitted with incoming and outgoing primary terminals and secondary terminal box. The secondary terminal box shall be arranged on sides. The general arrangement drawing with 3 bushing on the incoming side and 3 bushings on the outgoing side shall be submitted along with tender. Adequate level of oil shall be maintained in the tank for proper cooling & curb flashover.
- b) The tank shall be built with a plate of 5 mm thick top and 3.15 mm sides and bottom and with all fittings shall be capable of withstanding without leakage or distortion at the standard test pressure. All joints of the tank and fittings shall be hot oil tight and no leakage should occur during service. Both side of the joint should have continuous welding.
- c) It shall be provided with an oil gauge as shown. The oil gauge glass shall be fixed to the side of the raised wall of the inspection box. The tank shall be provided with necessary lifting lugs. Tank including top cover shall be hot deep Galvanised.
- d) The secondary terminal box cover, tank cover and inspection cover and other vertical joints where gaskets are used may be suitably bent **at least 25 mm bent** with necessary sealing arrangement **with sealing bolts at all corners and bolts should be at least 10 mm diameter GI bolts spaced maximum 70 mm apart**. This is to safeguard against seepage of water into tank in case of damaged gasket.
- e) The **6 mm** gaskets shall be dovetailed without joints to prevent moisture entry. In case of dovetailed joint, they shall not be more than two. The gaskets shall be of good quality Neoprene or **superior quality** rubberized gasket.
- f) **EARTHING:** Two earthing terminals shall be adequate size protected against corrosion and metallicity clean and identified by means of the sign marked in a legible and indelible manner on or adjacent to the terminals.
- g) All bolts should be provided with 2 flat washers and a spring washer with a nut.
- h) Conservator should not be provided for these CTPT sets.
- i) The Secondary terminal box incoming hole should be 32 mm diameter and at a suitable height from bottom to avoid replacement/ modification of secondary wires pipe when CTPT set is replaced.. The secondary terminals size should be 6 mm diameter, 25 mm stem length, 2 flat washers with 3 nuts of brass material should be provided. The terminals should be provided at least 70 mm height from incoming hole and clearances shall be as per IS to avoid shorting terminals due to secondary wires pipe.
- j) Secondary chamber shall have double door (inner & outer) with suitable arrangement for sealing of both the doors. The inner door shall be of transparent polycarbonate so that secondary terminal connections can be viewed with out breaking the inner door seals.
- k) The following details of equipment shall be engraved on tank with at least 10 mm letters. 1. Make, 2. Ratio, 3. Class of accuracy, 4.Serial No:, 5. Month & year of manufacturing.

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D) Guarantee period embossed plate shall be welded opposite side of name plate.

11. MOUNTING ARRANGEMENT :

The under base of all CTPT sets shall be provided with two 75x40mm GI channels and foundation dimensions shall be suitable placing with tank base uniform for all sets with only +/- 2 mm tolerance, to avoid modification of structure/ plinth, whenever CTPT set is replaced.

12. OIL : The insulation oil used in the tank shall comply with the requirements specified in latest relevant IS : 335/93 and as per Annexure-c.

13. GUARANTEED TECHNICAL PARTICULARS:

The Technical Particulars as specified in IS shall be guaranteed. Every tenderer should furnish the particulars required and guarantee the values so furnished for the supplies.

14. TESTS :

TYPE TESTS: The equipment offered shall be fully type tested from recognized standard govt. national laboratory by the bidder as per the relevant standards. The bidder shall furnish copies of type test certificates with the bid (for 0.2 class,3P4W, 11kv & 33kv MU). These type test certificates shall be got approved by the purchaser before commencement of supply. The bidders also furnish type test certificates for bushings and oil along with the bid. **The type test certificates shall be not older than (3) years from the date of opening of bid.**

TYPE TESTS FOR CTs :

- a) Verification of terminal marking and polarity
- b) Short time current Test.
- c) Temperature rise test.
- d) Lightning Impulse Test.
- e) High Voltage Power frequency wet withstand voltage test.
- f) Determination of errors or other characteristics according to the requirements of the appropriate designation or accuracy class.

TYPE TESTS FOR PTs :

- a. Verification of terminal marking and polarity.
- b. High voltage Power frequency wet withstand voltage test.
- c. Power frequency dry withstand tests on Primary winding.
- d. Power frequency dry withstand test on Secondary winding.
- e. Determination of errors according to the requirements of the appropriate accuracy class.
- f. Temperature rise test.
- g. Impulse Voltage test.
- h. Lightning Impulse test

TYPE TESTS FOR TRANSFORMER BUSHINGS :

- a) Dry flash over voltage.
- b) Wet flash over voltage.
- c) Dry 1 Minute withstand voltage.
- d) Impulse withstand voltage (1.2/50 Micro Seconds –ve wave)

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ACCEPTANCE AND ROUTINE TESTS :

The following shall be conducted as per IS:3156 (Latest version).

- a) Verification of Terminal marking and polarity.
- b) Power frequency/ dry withstand tests on primary windings.
- c) Power frequency dry withstand tests on secondary windings.
- d) Determination of errors according to the requirements of the appropriate accuracy class.
- e) Air pressure test on empty tank of transformer opened for physical verification test (Once for every lot offered for pre-dispatch inspection)

All acceptance and routine tests as stipulated in the relevant standards for CTs & PTs shall be carried out by the supplier in presence of purchaser's representatives. Immediately after finalization of the programme of acceptance/ routine testing, the manufacturer shall give advance intimation to the purchaser, to enable him to depute his representative for witnessing the tests.

15. DRAWINGS AND LEAFLETS :

Two sets of drawings showing clearly the general arrangements, sectional views, fitting details, electrical connections, *foundation details, overall dimensions* (length, breadth & height) and design features of each component part should accompany the tender. The bidder has to submit clear & detail drawing with description how he will arrange the double door system in secondary chamber with sealing. Technical leaflets giving the operating instructions should also be furnished along with tender. Tenders without details are liable to be rejected.

16. DEVIATIONS:

The deviations between tendered CTPT sets specifications and Standard Lab (CPRI, ERDA, etc..) type tested CTPT set along with detailed reasons for deviations shall be submitted along with tender.

17. TOLERANCES:

Unless otherwise specified herein the test value of the transformers supplied should be within the tolerance permitted in the IS on the guarantee values.

18. SEALING OF CTPT SETS AFTER TESTING AND INDIVIDUAL TEST REPORTS:

After witnessing testing on sample quantity and physical inspection of all offered CTPT sets, the purchaser's representative will provide numbered plastic seals to two opposite corners of tank, Secondary Chamber and inspection cover of all offered CTPT sets, for delivery of correct inspected materials only. The manufacturer has to provide test report duly mentioning all test results, seals numbers and name & address of purchaser's representative after inspection is over. The seals numbers shall also be mentioned in the test reports signed by purchaser's representative submitted for delivery instructions.

19. INSPECTION AND TESTING OF TRANSFORMER OIL :

To ascertain the quality of transformer oil the manufacturer's test report should be submitted at the time of inspection. Arrangements should also be made for testing the transformer oil, after taking out the samples from the manufactured CTPT sets and tested in the presence of CESU representative (or) if desired, in an independent laboratory.

20. DEPARTURE FROM SPECIFICATION :

If the tenderer wishes to depart from this specification in any respect, he shall draw the attention to such points of departure explaining fully the reasons thereof. Unless this is done the requirements of this specification will be deemed to have been accepted in every respect.

21. NAME PLATE :-

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The Purchase order No. and Date of purchase order, the words “PROPERTY OF SOUTHERN ELECTRICITY SUPPLY COMPANY OF ORISSA” should be etched on the Name Plate. **The name plate shall be non-detachable type & fixed with rivets, not with bolts & nuts. The nameplate should bear year & month of manufacture& other data as per IS.**

22. WARRANTY :

The supplier will warrant for the satisfactory functioning of the material / equipment as per specification for a **minimum period of 5 years from the date of last supply** of the material / equipment in good condition.

23. The tenderer shall indicate the source of all materials. He shall also indicate the name of the supplier and make of conductor, Transformer oil Electrical Steel Laminations, Construction Steel etc.

24. FITTINGS :

The following standard fittings shall be provided.

- a) Rating and terminal marking plates non detachable -1No.
- b) Earthing terminals with bolt, nuts & washers for connecting earth wire - 2Nos.
- c) Lifting lugs -4Nos.for main tank and 2Nos. for top cover.
- d) Pressure relief valve. – 1 No.
- e) Bimetallic terminal connectors on the HV bushings – 6 Nos.
- f) HV bushings Outdoor – 6 Nos.
- g) Secondary terminals bushings – as per requirement of CT ratio.
- h) Base channels 75 x 40 mm.
- i) 5 years guarantee embossed plate welded to tank opposite side of name plate.

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**GUARANTEED TECHNICAL PARTICULARS OF OUTDOOR OIL IMMERSED
3P4W,11 KV,5A&1A,0.2 Class MU (CT: PT UNITS).**

Sl. No.	Particulars	Requirements	Bidder's offer
1	Maker's name & adress	To be indicated	
2	Manufacturer's Type & Design	To be indicated	
3	Type of cooling	To be indicated	
4	Nominal System Voltage	11 KV	
5	Highest System Voltage	12 KV	
6	Frequency.	50 Hz	
7	Specification of CT & PT of Metering Unit		
A	Current Transformer		
i.	Type	Oil immersed	
ii.	Accuracy Class	0.5	
iii.	Rated output	15 VA	
iv.	Insulation level	28KVrms/ 75 KVpk	
v.	Short time thermal current rating for 1 sec	CT Primary 6 KA for less than 50/5A & 13KA for \geq 50/5A	
vi.	Saturation factor	To be indicated	
vii.	Normal current density of primary winding	\leq 1.6 Amps per Sq.mm	
viii.	Knee Point Voltage	To be indicated	
ix.	Continuous percentage over load	120%	
x.	ISF	As per IS	
B.	Potential Transformer		

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	Type	Oil immersed	
	PT ratio	11 KV/ $\sqrt{3}$ V /110/ $\sqrt{3}$ V	
	Rated output VA/phase	50	
	Class of accuracy	0.5	
	Insulation level	28KVrms/ 75 KVpk	
	Winding connection	Star/Star	
	Rated voltage factor & duration	To be indicated	
8	Dimension of MS hot dip Galvanized tank		
a.	Height mm	To be indicated in separate sheet	
b.	Breadth mm		
c.	Length mm		
9. a.	Thickness of MS Tank Side walls, Bottom	3.15mm	
b.	Top	5 mm	
c.	Edge bending in the Top Cover	To be provided	
d.	Standard pressure & duration that can be withstand.	To provided	
10	Weight of core and winding		
A	Current transformer		
	Core	To be indicated	
	Primary winding	To be indicated	
	Secondary winding	To be indicated	
B	Potential transformer		
	Core	To be indicated	
	Primary winding	To be indicated	
	Secondary winding	To be indicated	

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11	Quantity of oil in Ltr (Min 45 Ltrs)	To be indicated	
	Grade of oil	To be indicated	
12	Total weight of complete MU including all accessories and oil	To be indicated	
13	Resistance of primary & secondary winding per phase at 75° C:-		
	CT Winding (i) Primary	To be indicated in separate sheet	
	(ii) Secondary		
	PT Winding (i) Primary	To be indicated	
	ii. Secondary	To be indicated	
14	Maximum attainable winding temperature	85°C	
15.a.	Minimum phase to phase distance	255 mm	
b	Shortest distance between metal part & earth	190 mm	
16 a.	Make & type of HT bushing	To be indicated	
b.	Creepage distance of HV bushing	300 mm (Minimum)	
17	Bi-metallic terminal connector with nut, plain washer, spring washer & check nut suitable for aluminum conductor as per CT rating	6 no. to be provided	
18	Type of core material	To be indicated	
19	Type & thickness of gasket used on		
a	Top cover tank	To be indicated	
b	Secondary terminal box	To be indicated	
c	HV bushing	To be indicated	
20	Details of Metering Unit		
A	CT details		
a	Cross section area of each turn of CT winding (in sq. mm.)		
i	Primary winding	To be indicated in	

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ii	Secondary winding	separate sheet for each rating	
b	No. of turns		
	Primary winding	To be indicated	
	Secondary winding	To be indicated	
c	Winding material		
	Primary winding	To be indicated	
	Secondary winding	To be indicated	
B	PT details		
a	Cross Section area of each turn of PT (in sq. mm.)		
i	Primary winding	To be indicated	
ii	Secondary winding	To be indicated	
	Number of turns		
b	Primary winding	To be indicated	
	Secondary winding	To be indicated	
c	Winding materials		
	Primary winding	To be indicated	
	Secondary winding	To be indicated	
21	Identification/marketing of		
a	Primary terminals		
i	Incoming	RM, YM, BM	
ii	Outgoing	RL, YL, BL	
b	Secondary terminals		
I	CTs	1s1- 1s2, 2s1-2s2, 3s1-3s2	
ii	PTs	r,y,b,n	

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22	Size and material of		
a	Primary studs	M12 up to 20A & M16 >20A	
b	Secondary studs		
23	Secondary Chamber shall have double door type & sealing arrangement in both the doors.	To be provided	

Signature of Bidder with seal

**TECHNICAL SPECIFICATION OF GROUP-B
MATERIALS**

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

TECHNICAL SPECIFICATION FOR EHV GRADE TRANSFORMER OIL(NEW)

1. SCOPE :

This specification covers the testing, supply, delivery and performance requirements of EHV grade transformer oil(New) quantity indicated in our Schedule of Requirements for use in the power transformers under SOUTHCO.

The materials offered shall have been successfully type tested and shall have been in satisfactory operation for a period of not less than two years on the date of bid opening. Compliance shall be demonstrated by submitting with the bid (i) authenticated copies of the type test reports and (ii) performance certificates from the users.

The above materials shall conform in all respects to highest standards of engineering, design, workmanship, this specification and the latest revisions of relevant standards at the time of offer and the Purchaser shall have the power to reject any work or material, which, in his judgment is not in full accordance therewith.

2. SERVICE CONDITIONS:

Equipment to be supplied against the specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

- | | |
|--|-----------------------|
| a) Maximum ambient air temperature | 50 ° C |
| b) Maximum daily average air temperature | 40 ° c |
| c) Maximum yearly average ambient air temperature | 32 ° c |
| d) Maximum temperature attainably by a body | |
| e) Exposed to the Sun. | 60 ° C |
| f)Minimum ambient air temperature | -5 ° C |
| g) Maximum relative humidity | 100% |
| h) Minimum number of rainy days per annum | 70 |
| i)Average number of rainy days per annum | 120 |
| j)Average annual rain fall | 150cm. |
| k) Number of months of tropical monsoon conditions | 4 |
| l)Maximum wind pressure | 260Kg./m ² |
| m) Degree of exposure to atmospheric pollution | normally |
| n) Atmosphere. | Polluted. |

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Environmentally, the region where the work will take place includes coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor materials. Therefore, outdoor material shall be designed and protected for use in exposed, heavily polluted salty corrosive and humid coastal atmosphere

3.APPLICABLE STANDARDS:

The insulating oil for the transformer shall be of EHV grade, generally conforming to IEC: 296/ BS: 148/ REC: 39/ 1993 or latest version of IS: 335/ 1983 whichever is more stringent. No inhibitors shall be used in the oil. The dielectric strength of the oil shall not be less than 60 KV at 2.5 mm. gap when tested in accordance with IS: 6792/ 1972. If an anti-oxidant inhibitor is recommended, its use shall be subject to the purchaser's approval.

The bidder may propose alternative standards, provided it is demonstrated that they give a degree of quality and performance equivalent to or better than the referenced standards. The purchaser shall adjudge whether to accept or reject any standards. The Bidder shall furnish a copy of the alternative standard proposed along with his bid. If the alternative standard is in a language other than English, an English translation shall be submitted with the standard. In case of conflict the order of the precedence shall be (1) IEC or ISO standards, (2) Indian Standards, (3) Other alternative standards. This list is not to be considered exhaustive and reference to a particular standard or recommendation in this specification does not relieve the Contractor of the necessity of providing the goods complying with other relevant standards or recommendation.

4.GENERAL REQUIREMENTS:

The contractor shall warrant that oil furnished is in accordance with the following specifications.

S.No	Characteristic	Requirement	Method of Test
01	Appearance	The oil shall be clear & transparent & free from suspended matter or sediment	A representative sample of oil shall be examined in a 100 mm thick layer at ambient temp.
02	Density at 20 ⁰ C	0.89 g/cm ³ Max.	IS:1448
03	Kinematic Viscosity at 27 deg. C Max	27 CST	IS:1448

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04	Interfacial tension at 27deg.C Min.	0.03 N/m	IS:6104
05	Flash Point	136 ⁰ C	IS:1448
06	Pour Point Max.	-6 ⁰ C	IS:1448
07	Naturalization Value (Total Acidity) Max.	0.03 mg KOH/gm	IS:335
08	Electric strength Breakdown (voltage) Min.	72.5 KV	IS:6792
09	Dielectric dissipation factor tan delta at 90 ⁰ C	0.03 Max	IS:6262
10	Min specific resistance (resistively) at 90 deg.C	35X10 ¹² ohm cm (min.)	IS:6103
11	Oxidation stability		
12	Neutralization value after oxidation	0.40mg KOH/g	
13	Total sludge after oxidation	0.10% by weight max.	
14	Presence of oxidation Inhibitor	The oil shall not contain anti-oxidant Additives.	IS:335
15	Water content Max:	Less than 14 ppm	IS:2362

5. TEST CERTIFICATE :

The Bidder shall furnish detailed type test reports of the offered transformer oil as per IS done at the NABL approved laboratories to prove that the transformer oil offered meet the requirements of the specification. These Type Tests should have been carried out within five years prior to the date of opening of this tender.

- i) Their offered transformer oil is already fully type tested at NABL approved Laboratory within five years prior to the date of opening of this tender.
- ii) There is no change in the design of type tested transformer oil and those offers against this tender.

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GUARANTEED TECHNICAL PARTICULARS OF EHV GRADE TRANSFORMER OIL

Sl. No.	Characteristics	As per IS 335		Bidder's offer
		Minimum	Maximum	
1	Appearance	The oil shall be clear & transparent & free from suspended matter or sediment		
2	Density at 20 ⁰ C	-	0.89 g/cm ³ Max	
3	Kinematic Viscosity at 27 ° C	-	27 CST	
4	Interfacial tension at 27deg.C Min.	0.03 N/m	-	
5	Flash Point	140 ° C	-	
6	Pour Point.	-	-6 ° C	
7	Naturalization Value a. Total acidity (mg- KOH/ gm) b. Inorganic acidity/alkalinity	- -	0.03 Nil	
8	Corrosive Sulphur	Non- corrosive		
9	Electric strength Breakdown (voltage) Min.			
A	New unfiltered oil	30	-	
B	After filtration	60	-	
10	Dielectric dissipation factor (tan delta) at 90 ⁰ C	-	0.01	
11	Specific resistance			

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	(resistively) at (Ω -cm)			
A	90 ⁰ C	35X10 ¹²	-	
B	27 ⁰ C	1500X10 ¹²	-	
12	Oxidation stability 164 hours @ 100 ⁰ C			
a	Neutralization value after oxidation, mgKOH/gm	-	0.40	
B	Total sludge, wt % after oxidation	-	0.10	
13	Accelerated Ageing test 96 Hrs @ 115 °C (Open breaker Method)			
A	Specific resistance (resistively) at 90 ⁰ C (Ω -cm)	2 X 10¹²	-	
B	Specific resistance (resistively) at 27 ⁰ C (Ω -cm)	2.5 X 10¹²	-	
C	Dielectric Dissipation factor @ 90 ⁰ C	-	0.2	
D	Total acidity, mg-KOH/gm	-	0.05	
E	Total sludge	-	0.05	
14	Presence of oxidation inhibitor % wt	The oil shall not contain antioxidant additives	-	
15	Water content ppm	-	35	
16	S.K. Value, %	8 max	-	

Name & Signature of Bidder with seal

**TECHNICAL SPECIFICATION OF GROUP-C
MATERAILS**

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

TECHNICAL SPECIFICATION OF INSULATORS

1. GENERAL:

This specification covers the design, manufacturing, testing, supply, delivery and performance requirements of different types of insulators indicated in our Schedule of requirements for use in the distribution network of SOUTHCO.

The materials offered shall have been successfully type tested and the design shall have been in satisfactory operation for a period of not less than two years on the date of bid opening. Compliance shall be demonstrated by submitting with the bid (i) authenticated copies of the type test reports and (ii) performance certificates from the users.

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

2.SERVICE CONDITIONS:

Equipment to be supplied against the specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

a) Maximum ambient air temperature	50 ° C
b) Maximum daily average air temperature	40 ° c
c) Maximum yearly average ambient air temperature	32 ° c
d) Maximum temperature attainably by a body	
e) Exposed to the Sun.	60 ° C
f)Minimum ambient air temperature	-5 ° C
g) Maximum relative humidity	100%
h) Minimum number of rainy days per annum	70
i)Average number of rainy days per annum	120
j)Average annual rain fall	150cm.
k) Number of months of tropical monsoon conditions	4
l)Maximum wind pressure	260Kg./m2
m) Degree of exposure to atmospheric pollution	normally
n) Atmosphere.	Polluted.

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Environmentally, the region where the work will take place includes coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor materials. Therefore, outdoor material shall be designed and protected for use in exposed, heavily polluted salty corrosive and humid coastal atmosphere

3.APPLICABLE STANDARDS:

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

The Bidder may propose alternative standards, provided it is demonstrated that they give a degree of quality and performance equivalent to or better than the referenced standards. The purchaser shall adjudge whether to accept or reject any standards. The Bidder shall furnish a copy of the alternative standard proposed along with his bid. If the alternative standard is in a language other than English, an English translation shall be submitted with the standard. In case of conflict the order of the precedence shall be (1) IEC or ISO standards, (2) Indian Standards, (3) Other alternative standards. This list is not to be considered exhaustive and reference to a particular standard or recommendation in this specification does not relieve the Contractor or the necessity of providing the goods complying with other relevant standards or recommendation.

The insulators shall be of porcelain. These shall be non-absorbent and vitreous throughout. The exposed surface shall be glazed. Unless otherwise it is specified, the glaze is of brown 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. The insulators shall have adequate mechanical strength, high degree of resistance to electrical puncture, resistance to climatic & atmospheric conditions prevailing at site and made from one piece of moulded porcelain.

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

A.TECHNICAL SPECIFICATION 11 KV DISC INSULATOR 45 KN (T&C TYPE):

1. **Scope-** This specification covers the manufacture, testing and works supply and delivery of 11 KV Disc insulators. The Porcelain insulators shall conform to IS:731-1971 ammended upto date. Insulators shall be of Tongue & Clevis type (T&C).Disc insulators made of glazed porcelain shall be used as insulators on dead ends or on suspension type lines of 11 KV and above. Tongue & Clevis type (T & C) disc insulators of mechanical strength not less than 45KN shall be used confirming to IS: 731/1971. These shall be mounted on metallic cross-arms with the help of suitable non-magnetic galvanised iron hardware fittings. Small fittings like spring washers, nuts etc may be electro-galvanised.

2. **System conditions:**

- Frequency : (50 ± 3%)Hz
- Nominal System Voltage : 11 K V
- Maximum System Voltage : 12 KV
- No. of phases : 3
- Power frequency one minute withstand(Dry) : 75 KV
- Neutral Earthing arrangement: Effectively Earthed

3. **General Requirements**

i. Conductors :

The Disc Insulators will be used on lines on which the conductors will be AAA Conductor of size up to 100 sq. mm. The insulators should withstand the conductor tension, the reversible wind load as well as the high frequency vibrations due to wind.

ii. Type:

Diameter of porcelain disc insulator shall be 255mm. The center to center distance between T & C shall be 145mm.

iii. Insulator Ends.

Disc Insulators shall have Tongue and Clevis ends. The security clips will have to be provided as per fig. 25 of I.S. 2486 (Part-2) 1989 (amended up to date) and REC Specification 3/1971 (Revised 1993)

iv. The colour of the units shall be brown for 45 KN Disc Insulators.

4. **Electromechanical & Mechanical Strength :**

The electromechanical strength of the individual and the complete Disc shall be 45 KN applied axially.

5. **Creepage Distances :**

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The minimum creepage distance for each disc Insulator shall 400 mm.

6. Tests :

Suitable number of individual units shall be subject to the following tests in accordance with IS:731/1971 with its latest amendments.

a. Type Tests :

Following Type test shall be carried out on porcelain insulators as specified in IS: 731 / 1971 amended up to date.

1. Visual Examination.
2. Verification of dimensions.
3. Visible Discharge Test.
4. Impulse voltage withstand test.
5. Impulse voltage flashover test.
6. Wet one Minute Power Frequency withstand test and West Flashover test.
7. Temperature Cycle test.
8. Electromechanical failing load test.
9. Power frequency puncture withstand test.
10. Porosity test.
11. Galvanizing test.

b. Acceptance Tests :

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

1. Verification of dimensions.
2. Temperature Cycle test.
3. Twenty four hour mechanical test.
4. Electromechanical failing load test.
5. Power Frequency puncture withstand test.
6. Porosity test.
7. Galvanizing test.

C. Routine Tests:

- i. 1. Visual Examination
- ii. Mechanical test
- iii. Electrical test
- iv. Twenty four hours mechanical test
- v. Electro mechanical failing load test

7. Test Certificate :

The Bidder shall furnish detailed type test reports of the offered Disc Insulators as per clause 6. A of the Technical Specifications at the NABL approved laboratories to prove that the Disc Insulators offered meet the requirements of the specification. These Type Tests should have been carried out within five years prior to the date of opening of this tender.

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iii) Their offered Disc Insulators are already fully type tested at approved Laboratory within five years prior to the date of opening of this tender.

iv) There is no change in the design of type tested Disc Insulators and those offers against this tender.

8. Testing Facilities :

The Bidder must clearly indicate what testing facilities are available in the works of the manufacturer and whether facilities are adequate to carry out all Routine & acceptance Tests. These facilities should be available to Purchaser's Engineers if deputed or carry out or witness the tests in the manufacturer works. If any test cannot be carried out at the manufacturer's work, the reasons should be clearly stated in the tender. The insulators shall be tested in accordance with the procedure detailed in IS-731/1971 amended up to date.

9. Mechanical Design :

The design shall be such that stresses due to expansion and contraction in any part of insulator shall not lead to deterioration. Cement used in manufacture of the insulators shall not cause fracture due to expansion or loosening due to contraction.

10. Drawings :

The tender shall be accompanied with the detailed drawings showing the dimensions of the individual Disc, giving all the design dimensions of various component parts. Generally it shall be as per IS.

11. Markings :

Each insulator shall be legibly and indelibly marked to show the following :

- a) Name or trade mark of the manufacturer.
- b) Voltage Type
- c) Month and year of manufacturing.
- d) Electromechanical strength in KN
- e) Country of Manufacturer
- f) ISI certificate mark

12. Packing :

All insulators shall be packed in crates or boxes suitable for rough handling. Packing shall be marked with the strength and KV rating.

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GUARANTEED TECHNICAL PARTICULARS FOR 45 KN DISC. INSULATOR

(T&C TYPE)

Sl. No.	Requirement	Requirement	Bidder's offer
1	Name of Manufacturer. & Address	To be specified by the bidder	
2	Location of type testing	To be specified by the bidder	
3	Applicable standard	IS-731/1971 with latest amendment	
4	Nominal System Voltage	11 KV	
5	Highest System voltage	12 KV	
6	Visible discharge Test voltage (Minimum)	9 KV	
7	Dry Impulse withstand voltage +(1.2/50 microsecond wave)	75 KV	
8	Dry Impulse flashover voltage+(1.2/50 microsecond wave)	90 KV	
9	Dry 1 min. power frequency withstand Voltage	60 KV	
10	Wet 1 min. power frequency withstand Voltage	35 KV	
11	1min. power frequency flashover Voltage kV. (Dry)	65 KV	
12	1min. power frequency flashover Voltage kV.(Wet)	45 KV	
13	Power frequency puncture voltage	105 KV	
14	Mechanical Routine test load	18 KN	
15	Mechanical impact strength	45 KN	
16	Electromechanical Failing Load	45 KN	

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17	Safe working load	18 KN	
18	Minimum Failing Load	45 KN	
19	Creepage Distance	400 mm	
20	Type and Grade of Materials :		
a.	Insulators	Porcelain	
b.	Cap	Malleable Casting or S.G	
c.	Pin	Forged pin	
d.	Locking	Split pin	
E	Cement	Portland	
21	Type of semi conducting Glaze	Ceramic	
22	Color of Insulators	Dark brown	
23	Weight of single disc. kg.	4 Kg (Approx.)	
24	Number of Insulators per crate	4/6 No.	
25	Cross weight of Loaded crate	20-30 Kg	
26	Whether drawing showing dimensional details have been furnished along with bid.	To be enclosed by bidder	

NB- Every insulator should bear the marking of manufacturer's name and ISI mark

Name & Signature of Bidder with seal

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

B. TECHNICAL SPECIFICATION 11 KV POST INSULATOR

1. **Scope-** This specification covers the manufacture, testing and works supply and delivery of 11 KV post insulators. The Porcelain insulators shall conform to IS:731-1971 amended upto date. Small fittings like spring washers, nuts etc may be electro-galvanised.

2. **System conditions:**

- Frequency : (50 ± 3%)Hz
- Nominal System Voltage : 11 K V
- Maximum System Voltage : 12 KV
- No. of phases : 3
- Power frequency one minute withstand(Dry) : 75 KV
- Neutral Earthing arrangement System : Effectively Earthed

3. **Requirements:**

The post type insulators shall be suitable for outdoor use and cap & base type. Caps & base shall have plain machined faces & zigs shall be used for drilling bolt holes on the cap & in the base for easy & perfect assembly. Regarding Test for Mechanical strength for post Insulators, all the necessary tests are as per 9.6.5.1, 9.6.5.2, & 9.6.5.3 of IS:2544-1973 with latest amendments are to be carried out at the manufacturer's premises.

For each of the Post Insulators / Insulator sets Bolts, Nuts, Set Screws & Washers shall be supplied as follows :

- i. Requisite numbers of set Screws & Spring Washers for assembling the Post Insulator unit.
- ii. Requisite numbers of set screws & spring washers for fixing bus-bar Support to the cap in the top Post Insulator.
- iii. One set of Bolts, Nuts & Washers or Lock nuts & plain washers for mounting the Insulators on the support steel structures of bus support.
- iv. 5% spare Nuts & Bolts with washers shall have to be supplied of no extra cost by the purchaser with each consignment.

4. **Creepage Distances :**

The minimum creepage distance shall 31mm/KV.

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5. **Tests:**

Suitable number of individual units shall be subject to the following tests in accordance with IS:731/1971 with its latest amendments

6. **Test Certificate :**

The Bidder shall furnish detailed type test reports of the offered post Insulators at the NABL approved laboratories to prove that the Disc Insulators offered meet the requirements of the specification. These Type Tests should have been carried out within five years prior to the date of opening of this tender.

v) Their offered Insulators are already fully type tested at approved Laboratory within five years prior to the date of opening of this tender.

vi) There is no change in the design of type tested Insulators and those offers against this tender.

7. **Testing Facilities :**

The Bidder must clearly indicate what testing facilities are available in the works of the manufacturer and whether facilities are adequate to carry out all Routine & acceptance Tests. These facilities should be available to Purchaser's Engineers if deputed or carry out or witness the tests in the manufacturer works. If any test cannot be carried out at the manufacturer's work, the reasons should be clearly stated in the tender. The insulators shall be tested in accordance with the procedure detailed in IS-731/1971 amended up to date.

8. **Drawings :**

The tender shall be accompanied with the detailed drawings showing the dimensions of the individual insulator, giving all the design dimensions of various component parts. Generally it shall be as per IS.

9. **Markings :**

Each insulator shall be legibly and indelibly marked to show the following :

- a) Name or trade mark of the manufacturer.
- b) Voltage Type
- c) Month and year of manufacturing.
- d) Country of Manufacturer
- e) ISI certificate mark

10. **Packing :**

All insulators shall be packed in crates or boxes suitable for rough handling. Packing shall be marked with the strength and KV rating.

GUARANTEED TECHNICAL PARTICULARS FOR 11 KV POST INSULATOR

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

Sl. No.	Requirement	Requirement	Bidder's offer
1	Name of Manufacturer. & Address	To be specified by the bidder	
2	Location of type testing	To be specified by the bidder	
3	Applicable standard	IS-731/1971 with latest amendment	
4	Nominal System Voltage	11 KV	
5	Highest System voltage	12 KV	
6	Visible discharge Test voltage (Minimum)	9 KV	
7	Impulse withstand voltage +(1.2/50 microsecond wave)	90 KVp (+ve) and 105 KVp (-ve)	
8	Impulse flashover voltage+(1.2/50 microsecond wave)	95 KVp (+ve) and 120 KVp (-ve)	
9	1min. power frequency flashover Voltage kV. (Dry)	70 KV	
10	1min. power frequency flashover Voltage kV.(Wet)	45 KV	
11	Cantilever strength		
	a. Upright	65 Kg(Min)	
	b. Inverted	400 Kg(Min)	
12	Tensile strength	2050 Kg	
13	Torsion strength	34 m-Kg	
14	Compression strength	3600 Kg	
15	Conforming standard	As per IS	

NB- Every insulator should bear the marking of manufacturer's name and ISI mark

Name & Signature of Bidder with seal

C. LT GUY STRAIN INSULATORS (STAY INSULATORS)

1. SCOPE:

The specification covers porcelain guy strain insulators for use in LT distribution system.

2. APPLICABLE STANDARDS:

Except when they conflict with the specific requirements of this specification, the insulators shall comply with IS: 5300-1969 or the latest version thereof.

3.GENERAL REQUIREMENTS:

The porcelain shall be sound, free from defects, thoroughly vitrified and smoothly glazed. The design of the insulators shall be such that the stresses due to expansion and contraction in any part of the insulator shall not lead to its deterioration. The glaze shall be brown in color for insulators. The glaze shall cover the entire porcelain surface parts except those areas that serve as supports during firing.

4. SYSTEM CONDITIONS:

- Frequency : 50 Hz
- Nominal System Voltage : 400/230 V
- Maximum System Voltage LT System : 440/250 V
- Minimum LT Voltage : 370 V
- Power frequency one minute withstand(Dry) : 3 KV
- Neutral Earthing arrangement LT System : Solidly Earthed

5. TYPE OF INSULATORS:

The standard guy strain insulators shall be of designation 'A' and 'C' as per IS: 5300/1969 or its latest revision. The recommended type of guy strain insulators for use on guy wires of LT overhead lines are Type-A.

6. TESTS:

a. Type tests:

- a) Visual examination
- b) Verification of dimensions
- c) Temperature cycle test

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- d) Dry one minute power frequency withstand test
- e) Wet one minute power frequency withstand test
- f) Mechanical strength test
- g) Porosity test

6.2 Acceptance test:

The insulators, after having withstood the routine test shall be subjected to the following acceptance tests in the order given below:

- a) Verification of Dimensions.
- b) Temperature cycle test
- c) Mechanical strength test
- d) Porosity test

6.3 Routine tests:

- i) Visual examination

7. TESTING FACILITIES:

- a. The Bidder must clearly indicate what testing facilities are available in the works of the manufacturer and whether the facilities, are adequate to carry out all the routine as well as type tests. These facilities should be made available to Purchaser's Engineers if deputed to carry out or witness the tests. If any tests cannot be carried out at the manufacturer's works, the reasons should be clearly stated in the tender.
- b. The Bidder shall furnish detailed type test reports of the offered L.T. Stay Insulators as per clause 6.1 of this specification. All the above Type Tests shall be carried out at laboratories, which are accredited, by the National Accreditation Board of Testing and Calibration Laboratories (NABL) of Government of India to prove that the insulators offered meet the requirements of the specification. These Type Tests should have been carried out within five years prior to the date of opening of this tender.
- c. There offered L.T. Stay Insulators are already fully Type Tested at Laboratories accredited by the National Accreditation Board of Testing and Calibration Laboratories (NABL) within five years prior to the date of

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opening of the tender. There is no change in the design of Type tested L.T.

Stay Insulators and those offers against this tender.

8. Drawings :

The tender shall be accompanied with the detailed drawings showing the dimensions of the individual insulator, giving all the design dimensions of various component parts. Generally it shall be as per IS.

9. MARKING:

a. Each insulator shall be legibly and indelibly marked to show the following:

- a) Name or trade mark of the manufacturer
- b) Year of manufacturer
- c) ISI certificate, mark, if any.

b. Marking on porcelain shall be applied before firing.

10. Packing :

All insulators shall be packed in crates or boxes suitable for rough handling. Packing shall be marked with the strength and voltage rating.

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**GUARANTEED TECHNICAL PARTICULARS FOR LT GUY STRAIN
INSULATOR (TYPE A)**

Sl. No.	Requirement	Requirement	Bidder's offer
1	Name of Manufacturer. & Address	To be specified by the bidder	
2	Location of type testing	To be specified by the bidder	
3	Applicable standard	IS: 5300-1969 or the latest version thereof	
4	Nominal System Voltage	400/230 V	
5	Highest System voltage	440/250 V	
6	Length	90 mm	
7	Diameter	65 mm	
8	Cable hole diameter	16 ± 5%	
9	1min. power frequency withstand Voltage (Dry)	18 KV (rms)	
10	1min. power frequency withstand Voltage (Wet)	8 KV	
11	Minimum failing load	44 KN	
12	Minimum creepage distance	41 mm	
13	Drawing	To be submitted by bidder	
14	Conforming standard	As per IS	

NB- Every insulator should bear the marking of manufacturer's name and ISI mark

Name & Signature of Bidder with seal

D. LT SHACKLE INSULATORS

1. SCOPE:

The specification cover the manufacture, testing at works supply and delivery of Porcelain insulators for overhead power lines with a nominal voltage below 1000 volts. Both Pin and Shackle type insulators are covered.

2. APPLICABLE STANDARDS:

Except when they conflict with the specific requirements of this specification, the insulators shall comply with IS : 1445/1977 or the latest version thereof.

3. GENERAL REQUIREMENTS:

The porcelain shall be sound, free from defects, thoroughly vitrified and smoothly glazed. The design of the insulators shall be such that the stresses due to expansion and contraction in any part of the insulator shall not lead to its deterioration. The glaze shall be brown in color for insulators. The glaze shall cover the entire porcelain surface parts except those areas that serve as supports during firing. The insulators shall be suitable for use with all Aluminum Conductor or Copper conductor or ACSR upto 100 sq.mm. The insulators should withstand the conductor tension the reversible wind load as well as the high frequency vibrations set due to wind.

4. SYSTEM CONDITIONS:

- Frequency : 50 Hz
- Nominal System Voltage : 400/230 V
- Maximum System Voltage LT System : 440/250 V
- Minimum LT Voltage : 370 V
- Power frequency one minute withstand(Dry) : 3 KV
- Neutral Earthing arrangement LT System : Solidly Earthed

5. TYPE OF INSULATORS:

The standard shackle insulators shall be of designation Type -1 & Type-2 or its latest revision. The recommended type of shackle insulators for use on LT overhead lines are Type-1.

6. TESTS:

a. Type tests:

- a) Visual examination
- b) Verification of dimensions

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- c) Temperature cycle test
- d) Dry one minute power frequency withstand test
- e) Wet one minute power frequency withstand test
- f) Mechanical strength test
- g) Porosity test

6.2 Acceptance test:

The insulators, after having withstood the routine test shall be subjected to the following acceptance tests in the order given below:

- a) Verification of Dimensions.
- b) Temperature cycle test
- c) Mechanical strength test
- d) Porosity test

6.3 Routine tests:

- ii) Visual examination

7. TESTING FACILITIES:

- a. The Bidder must clearly indicate what testing facilities are available in the works of the manufacturer and whether the facilities, are adequate to carry out all the routine as well as type tests. These facilities should be made available to Purchaser's Engineers if deputed to carry out or witness the tests. If any tests cannot be carried out at the manufacturer's works, the reasons should be clearly stated in the tender.
- b. The Bidder shall furnish detailed type test reports of the offered L.T. shackle Insulators as per clause 6.1 of this specification. All the above Type Tests shall be carried out at laboratories, which are accredited, by the National Accreditation Board of Testing and Calibration Laboratories (NABL) of Government of India to prove that the insulators offered meet the requirements of the specification. These Type Tests should have been carried out within five years prior to the date of opening of this tender.
- c. There offered L.T. shackle Insulators are already fully Type Tested at Laboratories accredited by the National Accreditation Board of Testing and Calibration Laboratories (NABL) within five years prior to the date of opening of the tender.

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There is no change in the design of Type tested L.T. shackle Insulators and those offers against this tender.

8. Drawings :

The tender shall be accompanied with the detailed drawings showing the dimensions of the individual insulator, giving all the design dimensions of various component parts. Generally it shall be as per IS.

9. MARKING:

- a. Each insulator shall be legibly and indelibly marked to show the following:
 - a) Name or trade mark of the manufacturer
 - b) Year of manufacturer
 - c) ISI certificate, mark, if any.
- b. Marking on porcelain shall be applied before firing.

10. Packing :

All insulators shall be packed in crates or boxes suitable for rough handling. Packing shall be marked with the strength and voltage rating.

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GUARANTEED TECHNICAL PARTICULARS FOR LT SHACKLE INSULATOR

(TYPE-1)

Sl. No.	Requirement	Requirement	Bidder's offer
1	Name of Manufacturer. & Address	To be specified by the bidder	
2	Location of type testing	To be specified by the bidder	
3	Applicable standard	IS-1455/1977 with latest amendment	
4	Nominal System Voltage	400/230 V	
5	Highest System voltage	440/250 V	
6	1min. power frequency withstand Voltage (Dry)	22 KV (rms)	
7	1min. power frequency withstand Voltage (Wet)	10 KV	
8	Power frequency flashover Voltage (Dry)	25 KV (rms)	
9	Power frequency flashover Voltage (Wet)	10 KV (rms)	
10	Minimum failing load	11.5 KN	
11	Minimum creepage distance	41 mm	
12	Drawing	To be submitted by bidder	
13	Conforming standard	As per IS	

NB- Every insulator should bear the marking of manufacturer's name and ISI mark

Name & Signature of Bidder with seal

**TECHNICAL SPECIFICATION OF GROUP-D
MATERIALS**

Technical specification of Rubber hand gloves

1.Scope- This specification covers rubber hand insulated hand gloves used for protection of electrical workers from electric shock.These gloves are intended for working on live low and medium voltage lines and equipments.These are also used for the operation of 11 KV and 33 KV AB switches operating handles etc. as a precaution.

2.Applicable standard: Unless otherwise modified in this specification, the rubber hand gloves shall comply with the Indian Standards specification IS:4770-1991 or its latest version.

3. Manufacturing process:

The loves made from liquid rubber by dipping process shall be acceptable.The gloves should be seamless, soft and flexible to allow easy movement of hands.

4.Physical properties:

The allowable values of Tensile strength, Elongation at Break,Tension set and Ageing Properties shall be as stipulated in the IS.

6. Packing and Marking:

The gloves shall be marked with following information:

- i. Size and type of gloves.
- ii. Maximum working potential followed by the word 'working' in brackets.
- iii. Manufacturer's name
- iv. Month and year of manufacture.
- v. ISI Mark.

7. Tests:

7.1 Routine Tests:

Each and every glove shall be subjected to following routine tests in accordance with the details indicated in IS:4770.

- i. Visual examination
- ii. Thickness
- iii. Proof of voltage and leakage current.

7.2 Acceptance Tests:

The following acceptance tests will be carried out.

- i. Thickness
- ii. Tensile strength
- iii. Puncture resistance

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- iv. Moisture absorption
- v. Test potential and leakage current
- vi. Breakdown voltage

7.3 Type Tests:

In addition to the routine and acceptance tests, the following type tests shall be made.

- i. Thickness
- ii. Tensile strength
- iii. Elongation at break
- iv. Tensile set
- v. Tensile stress at 200% elongation
- vi. Tear strength
- vii. Tensile strength and elongation at break after heat ageing
- viii. Puncture resistance
- ix. Moisture absorption.
- x. Nitrogen content(For natural rubber only)
- xi. Ash content (For natural rubber only)
- xii. Test potential and leakage current
- xiii. Breakdown voltage

8. Packing:

The gloves may be packed in polyethylene bags and sealed or as agreed to between purchaser and supplier.

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Guaranteed Technical Particulars of Rubber Hand Gloves		
Sl. No.	Description `	Guaranteed Value
1	Max Working Potential (RMS)	Type 3-7500 V , Type 4-17000 V
2	Test Potential (RMS)	Type 3-17000 V Type 4-25000 V
3	Leakage Current (RMS) at working voltage micro amps (Max.)	Type 3-4000 V Type 4-8000 V
4	Leakage Current (RMS) at test potential	Type 3-14mA Type 4-16 mA
5	Minimum Break Down Voltage	Type 3-20,000V Type 4-30,000 V
6	Dimension (from the tip of second finger to the edge of the cuff)	400mm
7	Max , Min thickness	As per ISS
8	Rubber Hand Gloves for 33 Kv & 11 Kv AB Switch Operating Handles	As per IS 4770-1991

NB- Every rubber hand glove should bear the marking of manufacturer's name and ISI mark

Name & Signature of Bidder with seal

**TECHNICAL SPECIFICATION OF GROUP-E
MATEREIALS**

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TECHNICAL SPECIFICATION FOR L.T. XLPE AERIAL BUNCHED CABLES
1.SCOPE :

This specification covers the design, manufacturing, testing, supply, delivery and performance requirements of LT overhead ISI marked Aerial Bunched Cable (ABC) of different sizes indicated in our Schedule of Requirements for use in the LT network of SOUTHCO.

The materials offered shall have been successfully type tested and the design shall have been in satisfactory operation for a period of not less than two years on the date of bid opening. Compliance shall be demonstrated by submitting with the bid (i) authenticated copies of the type test reports and (ii) performance certificates from the users.

The scope of supply includes the provision of type tests. Rates for type tests shall be given in the appropriate price schedule of the bidding document and shall be considered for evaluation. The purchaser reserves the right to waive type tests as indicated in the section on Quality Assurance, Inspection and Testing in this specification.

The Aerial Bunched Cable shall conform in all respects to highest standards of engineering, design, workmanship, this specification and the latest revisions of relevant standards at the time of offer and the Purchaser shall have the power to reject any work or material, which, in his judgment is not in full accordance therewith.

RATED VOLTAGE :

The rated voltage of the cables shall be 1100 Volts.

2. SERVICE CONDITIONS:

Equipment to be supplied against the specification shall be suitable for satisfactory continuous operation under the following tropical conditions.

- a) Maximum ambient air temperature 50 ° C
- b) Maximum daily average air temperature 40 ° c
- c) Maximum yearly average ambient air temperature 32 ° c
- d) Maximum temperature attainably by a body
- e) Exposed to the Sun. 60 ° C
- f) Minimum ambient air temperature -5 ° C

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g) Maximum relative humidity	100%
h) Minimum number of rainy days per annum	70
i) Average number of rainy days per annum	120
j) Average annual rain fall	150cm.
k) Number of months of tropical monsoon conditions	4
l) Maximum wind pressure	260Kg./m ²
m) Degree of exposure to atmospheric pollution	normally
n) Atmosphere.	Polluted.

Environmentally, the region where the work will take place includes coastal areas, subject to high relative humidity, which can give rise to condensation. Onshore winds will frequently be salt laden. On occasions, the combination of salt and condensation may create pollution conditions for outdoor materials. Therefore, outdoor material shall be designed and protected for use in exposed, heavily polluted salty corrosive and humid coastal atmosphere

3.APPLICABLE STANDARDS:

Except where modified by this specification, the Aerial Bunched Cable shall be designed, manufactured and tested in accordance with the latest editions of the following standards.

IEC/ISO	Indian Standard	Materials
IEC: 1089	IS: 398/1994	Round wire concentric lay Overhead electrical Stranded Conductors
	IS: 398(Part-4)/1994	All Aluminum Alloy Conductor
	IS: 8130/1984	Conductors for insulated Electric cables.
	IS: 10810/1984	Method of Tests for cables
IEC: 502	IS:7098/1998	XLPE Insulated PVC. Sheathed power cables.
	IS:14255/1995	Aerial Bunched Cables for working voltage up to and including 1100 volts

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The Bidder may propose alternative standards, provided it is demonstrated that they give a degree of quality and performance equivalent to or better than the referenced standards. The purchaser shall adjudge whether to accept or reject any standards. The Bidder shall furnish a copy of the alternative standard proposed along with his bid. If the alternative standard is in a language other than English, an English translation shall be submitted with the standard. In case of conflict the order of the precedence shall be (1) IEC or ISO standards, (2) Indian Standards, (3) Other alternative standards. This list is not to be considered exhaustive and reference to a particular standard or recommendation in this specification does not relieve the Contractor or the necessity of providing the goods complying with other relevant standards or recommendation.

4.SYSTEM CONDITIONS:

- Frequency : 50 Hz
- Nominal System Voltage : 400/230 V
- Maximum System Voltage LV System : 440/250 V
- Minimum LV Voltage : 370 V
- Power frequency one minute withstand(Dry) : 3 KV
- Neutral Earthing arrangement LV System : Solidly Earthed

5.The design of Aerial Bunched Cable offered shall comprise a compacted, standard, hard drawn H2 / H4 grade aluminum phase conductor as applicable under IS-8130 / 84 with cross linked polyethylene (XLPE) insulation of 1.1. KV class, having of carbon black content 2.5% \pm 0.5%.

The sizes and number of cores required are:

The type of Bunched Cables shall be three phase and street lighting insulated bundled. All Aluminum Conductors combined with a neutral and catenaries (bare) which shall be of heat treated aluminum magnesium silicon alloy wires containing approximately 0.5% each of magnesium and silicon respectively. The catenaries must have an ultimate tensile stress of not less than that specified in the table of technical requirements. The Bidder shall specify the standard to which this bundle shall be manufactured. The conductor bundle offered shall be designed to meet the requirements set out in this specification taking note of safety factors pertaining to conductor or catenaries tensioning and NESC specification: General Technical Requirements for LV overhead lines. However, a bid of Aerial Bunched Cables shall not be considered, unless it is accompanied by a list of all special tools and equipments necessary to complete the installation.

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9.CONDUCTORS:

A . PHASE CONDUCTORS:

- i) The phase conductors and street lighting conductors shall be made of aluminium & shall be stranded in construction and shall be insulated with black weather resistant polyethylene suitable for 1100 Volts insulation. The insulated conductors shall generally conform to the standards quoted in clause 3 above.
- ii) The phase conductors shall be suitably compacted circular cross section. The outer diameter shall be within the limit as specified in 5.5 below :
- iii) The phase conductors shall be provided with one, two and three ridges for quick identification.
- iv) The tensile strength of the aluminium wires used in the conductors shall not be less than 90 N/mm².
- v) The standard size and technical characteristics of the phase and street lighting conductors shall be as shown in the following table :

Specified Cross Sectional Area(mm²)	Diameter of each strand (mm) (Min)	Min overall Diameter of compacted conductor (mm)	Max.DC resistance at 20 °C (Ω/km)	Insulation thickness (mm)	Minimum No. of Strands
(1)	(2)	(3)	(4)	(5)	(6)
16	1.75	5.25	As per ISS/GTP	1.2	7
25	2.14	6.42		1.2	7
35	2.54	7.6		1.2	7
50	3.05	9.15		1.5	7
95	2.54	12.7		1.5	19

B. MESSENGER (NEUTRAL CONDUCTOR) :

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- i. The bare messenger wire shall be made of aluminium alloy generally conforming to IS - 398 (part - IV) – 1994 or the latest version thereof composed of 7 strands and shall be suitably compacted to have smooth round surface to avoid damage to the polyethylene insulation of the phase conductors twisted around the messenger.
- ii) There shall be no joints in any wire of the stranded messenger conductor except those made in the base rod of wires before final drawing.
- iii) The sizes and other technical characteristics of the messenger wire shall be as given in the following table :

Phase Conductor Size of the LT AB Cable (mm²)	Specified Cross Sectional Area of the Messenger Conductor (mm²)	Diameter of each strand (mm)	Diameter of compacted conductor (mm)	Max.DC resistance at 20 °C (Ω/km)	Approx mass (kg/Km)	No. of Strands
(1)	(2)	(3)	(4)	(5)	(6)	(7)
16	25	2.14	6.42	As per ISS/GTP	65	7
50	35	2.54	7.6		95	7
70	50	3.05	9.15		136	7
95	70	3.6	10.8		191.8	7

C. The bidder must take required precaution to ensure that the average diameter of each strand of conductor shall be ascertained through physical measurement of dimensions of finished cables at ambient temperature during pre-dispatch inspection or / and verification at SOUTHCO Store by consignee and the value so obtained shall have a tolerance limit with reference to the nominal diameter of each strand of conductor as stated in the tables above.

10. TOLERANCES:

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The measurement of strand diameter of the finished AB Cable shall not be less 0.03mm for strands up to and including 3.00mm diameter. For strands above that size, measurement of strand diameter shall not be less than 1% of the nominal strand diameter. For the purpose of checking compliance with the above requirement, the diameter shall be determined by two measurements at right angles taken at the same cross section. The physical measurement of strands shall be conducted after opening the strands of a finished AB Cable offered for inspection.

11. SPLICES IN WIRES:

Splices in Wires shall generally comply with requirements of IEC 1089. The aluminum alloy rods may be spliced by cold pressure but welding before drawing provided the manufacturer can guarantee that the splice can develop 90% of the tensile strength of the un sliced rod. Wires which break during stranding may be sliced by cold pressure butt-welding provided that: No two splices in the completed conductor occur within 15m of each other and no two splices in any individual wire are less than 150 m apart. The splice shall be done with high skilled workmanship. The finished splice shall be smooth and at no point shall the cross sectional area be less than that of the un sliced wire. Splicing of the alloy wires on the stranding machine in order to utilize lengths of wires on reels shall not be permitted.

12. STRANDING AND CORE LAY:

The conductor cores shall be stranded and the direction of lay must be as defined in IEC: 1089.

13. XLPE INSULATION :

The Aerial Bunched Cables shall be insulated for a voltage class of 0.65/1.1 KV and shall be capable of operating permanently at 1.2KV. The insulation wall thickness shall be determined in accordance with Table-4 (Clause- 7.2 and Clause 7.3) of IS: 14255/1995. The insulating material shall be black and suitable to resist ultra violet radiation, salt laden sprays, chemical pollution, ageing effects, abrasion and mechanical shocks and mechanical and electrical stress at temperature up to 90°C in normal operation and 2500C under short circuit conditions per IEC: 502/1994. The carbon black content in the XLPE insulation shall be 2.5% ± 0.5%.

14. PHASE IDENTIFICATION:

The individual insulated conductors within a bundle shall be identified by means of longitudinal projections. The three phase conductors shall be marked by one, two or three longitudinal projections, indicating the red, yellow and blue phases. The projections shall have the following dimensions.

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- The distance between the tips of two adjacent projections, where there is more than one, shall be between 1.0 and 1.5.
- The width of the projection at the base shall be 1.0mm; and
- The height of the projections shall be 0.5mm.

15. INSULATION MARKINGS:

Each individual conductor comprising a bundle shall have the range of non-erasable distinct markings listed below legibly printed on the insulation surface at one meter intervals. The embossing should be very clear & easily visible to naked eye.

- ISI Mark, IS 14255-95, Manufacturer's B.I.S License No. legibly embossed on the insulation
- Name of the Purchaser.
- P.O No. & Date
- Manufacturer's trademark identification for example
- Year of manufacture: last two digits are sufficient:
- Designation of conductor type
- Size: for example "3x50"
- Shape of conductor.
- Rated voltage class: 0.65/1.1KV
- Conductor identification: conductors with one, two and three projections shall be marked R, Y and B respectively. The conductor with no projection shall be marked N.
- The height of the printed lettering shall be not less than 20% of the overall diameter of the conductor.

The markings shall be made in the sequence indicated above. Thus if the manufacturer were XY, the aerial bunched cable had been manufactured in 1994, size 3x50mm² + 1x35mm² + 1x16mm² with conductors of circular cross section and with a bundle of the self supporting type, manufactured to a recognized international standard then the core with two projections would be marked as follows:

XY-94-NFA-3x50+1x35+1x16-r-m-0.65/1.1KV-Y

Where, N is the international standard, F indicates overhead cable, A is aluminum alloy conductor and 2X refers to XLPE insulation, 'r' means round core, 'm' self-supporting and 'Y' the phase identification.

16. TWIST:

The direction of lay of the conductors comprising the bundle shall be left-handed and the lay ration shall comply with IEC: 1089. With a bare catenaries configuration the insulated phase cables together with the street lighting cores shall be twisted round the neutral catenaries to form the ABC. This cable bundle is then strung directly onto the distribution poles supported by the catenaries with standard approved hardware.

17. CABLE DRUM LENGTH:

The cable shall be supplied in 500m .Drum Lengths as the case may be for different sizes of LT XLPE AB Cable.

18. TESTS:

Where not specified, all tests and test results shall conform to the requirements of IEC 502/1994 or IS 7098 (Part-I) 1998, IS 10810/1984, IS: 398(Part-IV) and IS: 14255/1955. Unless expressly stated otherwise, the ambient temperature for routine tests as well as voltage tests shall be $20 \pm 15^{\circ}\text{C}$ and for all other tests be $20 \pm 15^{\circ}\text{C}$. The frequency of the alternating test voltage shall be 49 Hz to 51Hz. The voltage wave form should be sinusoidal.

18.1 Type Tests:

The test sample shall be 10m to 15m in length. All cores of the bundles shall be tested.

- Insulation resistance at ambient temperature
- Insulation resistance at operating temperature
- AC voltage test.

The insulation resistance test at ambient temperature shall be carried out in a water bath at ambient temperature. The insulation resistance test at a operating temperature shall be conducted in a water bath at 90°C . The longitudinal projections used for phase identification shall be ignored. The results of this test shall be used to calculate the volume receptivity and the results conform to the requirements of IEC:502/1994 or IS 10810 (Part-43). The AC voltage test shall be carried out by applying 1.95KV (3U0) for four hours to the sample, which shall be submerged in a water bath at ambient temperature, having been steeped for a period not less than one hour. The test shall only be deemed to have been passed if no breakdown occurs. Furthermore, the following non-electrical type tests shall also be carried out:

- Insulation wall thickness: the longitudinal projections used for phase 1 identifications shall be ignored as per IS 10810 (Part-6);

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- Ageing test, consisting of an evaluation of the retention of the mechanical properties of the insulation after ageing.
- Wrapping test: as per IS 10810 (Part-3);
- Tests for bleeding and blooming of pigment as per IS 10810 (Part-9)
- Thermal expansion of insulation.
- Measurement of carbon black content as per IS 10810 (Part-32).
- Water absorption by the XLPE insulation, shrinking of the XLPE insulation.
- Tensile test: adhesion between conductor and insulation.

The adhesion test requires a tensile testing machine. A sample of at least 300mm length shall be selected and straightened out. The insulation shall be removed for a length of 150mm. The insulated end shall be held in the upper grip head and the bare conductor on the lower grip head. Tension shall be applied at a speed of 500 mm/ min until the conductor first begins to slide within the insulation. The test shall have been passed if the conductor and insulation combination can stand 75N/mm² without slippage occurring. The neutral conductor/catenaries shall be type tested in accordance with the requirements of IS 398 (Part-IV) 1994.

18.2 Routine Tests

The following measurement or tests shall be carried out on all drums and coils of Bunched cable:

- Conductor resistance
- Voltage test.

The conductor to be tested for conductor resistance shall be stored for at least 12 hours in a room at particular constant temperature. If it cannot be established that the conductors have reached the room temperature, the test should be postponed for a period of further 12 hours. Alternatively, the test can be carried out on short sample after remaining one hour in a temperature controlled water bath. The test shall be carried out and the conversion factors used to convert the resistance value to a base of 200 °C and one Km. The DC resistance of each conductor shall not exceed the appropriate maximum values specified in IEC:228/IS:6474. The voltage test shall be conducted by applying to each core 3.5KV AC (2.5 U₀ plus 2 KV) or 8.4 KV DC for 5 minutes with the specimen lying in a water bath at ambient temperature. The conductor shall pass the test if no electrical breakdown occurs.

18.3 Acceptance Tests

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The following sample check, measurements and test shall be carried out in addition to the Acceptance Tests as per IS 14255 – 1955, IS : 398 (Part – IV) 1994, IS 8130 / 1984.

- Measurement of insulation wall thickness;
- Measurement of diameter of each strand, overall outside dia & Cross Sectional Area of the conducting Part out of the finished product during pre-dispatch inspection.
- Thermal expansion test;
- Check of physical characteristics
- Tensile strength of individual wires of conductor.
- High Voltage Test on drums immersed in water(apply voltage 3.5 KV AC for 5 min)

These tests should be carried out on one length from each production batch of the same sample. The thickness of the insulation wall shall be measured on a piece removed from each end of the sample length. If either means or minimum values are not met, two further samples shall be removed at 0.5m from the end corresponding to the failed specimen. If these samples do not satisfy the mean and minimum thickness requirements, the test shall be deemed to have been failed. The longitudinal projections used for phase identifications shall be ignored. The thermal expansion test need only be carried out on one core. In relation to the tensile test, the tensile strength of the aluminum wires before stranding and that of the finished conductor shall comply with IEC:1089.

18.4 Test on the Catenary (messenger) Conductor:

Breaking load, elongation and resistance tests shall be completed on the aluminum alloy catenaries conductor in accordance with the requirements of IS:398 (Part- IV)/1994 or IEC:1089.

18.5 Bending Test on a complete cable

This test shall be performed on a sample of completed cable. The sample shall be bent around a test mandrel at room temperature for at least one turn. It shall then be unwound and the process shall be repeated after turning the cable sample around its axis by 180°. This process shall be repeated twice more. There shall be no signs of breaking or cracking of the cable insulation during this test.

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The diameter of the mandrel shall be:

$$10 (D+d)$$

Where D = Actual diameter of the cable (mm) d = Actual diameter of the conductor (mm)

18.6 Rejection and Retests:

Should any one of the test pieces first selected fail to pass the tests, two further samples from the same batch shall be selected for testing, one of which shall be from the length from which the original test sample was taken unless the length has been withdrawn by the supplier. Should the test pieces from both of these additional samples satisfy the requirements of the tests, the batch represented by these samples shall be deemed to comply with the standard. Should the test pieces from either of the two additional samples fail, the batch represented shall be deemed to have failed.

16. COMPLIANCE WITH SPECIFICATION:

The Aerial Bunched Cable shall comply in all respects with the requirements of this specification. However, any minor departure from the provisions of the specification shall be disclosed at the time of bidding in the Non-compliance Schedule of this document.

17. COMPLIANCE WITH REGULATIONS:

All the cables shall comply in all respects with the Indian Regulations and Acts in force. The cables and connections shall be designed and arranged to minimize the risk of fire and any damage, which might be caused in the event of fire.

18. Non-conforming Product The Purchaser reserves the right for decisions regarding acceptance, modification or rejection of non-conforming items.

19. Inspection and Testing

The Purchaser or his authorized representative has free entry at all times, while work on the contract is being performed, to all parts of the manufacturer's works which concerns the processing of the cables ordered. The manufacturer shall afford the purchaser or his authorized representatives without charge, all reasonable facilities to ensure that the cable being furnished is in accordance with these specifications.

The cables shall successfully pass all the type tests, routine tests & acceptance Tests referred to in the section on tests and those listed in the most recent edition of the standards given in the specification. The Purchaser reserves the right to reject any of the cables if the test results do not comply with the values specified or with the date given in the Technical data schedule. Type

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tests shall be carried out at an independent testing laboratory or at the manufacturer's works if such facilities are available and to be witnessed by the purchaser. The contractor, at no extra cost at the manufacturer's work shall carry out routine and Acceptance tests in presence of the Purchaser's representatives. Type Test Certificates for the tests conducted earlier shall be submitted with the bid for evaluation. The requirements of additional type tests will be at the discretion of the Purchaser The Purchaser may witness routine and type tests. In order to facilitate this, the contractor shall give the purchaser of 15days notice that the material is ready for inspection & testing. The supplier shall extend all assistance to the representative of the Purchaser during his inspection & testing of samples at his works. The materials shall be dispatched only after approval of such Test Reports and issue of Dispatch clearance by the Purchaser. However the Purchaser reserves the right to retest the materials after delivery at any NABL Accredited Testing Laboratory in case of any disputes regarding size & quality of supplied materials at a later date during guarantee period. The cost of such retesting shall be borne by the supplier. All costs in connection with the testing, including any necessary retesting shall be borne by the Contractor, who shall provide the Purchaser with all the test shall have the right to select the samples for test and shall also have the right to ensure that the testing apparatus is correct. Measuring apparatus for routine tests shall be calibrated at the expense of the contractor at an approved laboratory and shall be approved by the purchaser before testing.

The Contractor shall be responsible for the proper testing of the materials supplied by sub-Contractor to the same extent as if the materials were completed or supplied by the contractor.

Any cost incurred by the Purchaser in connection with inspection or retesting as a result of failure of the equipment under test or damaged during transport or off loading shall be to the account of the Contractor. The Contractor shall submit to the Purchaser three signed copies of the test Certificates, giving the results of the tests as required. No materials shall be dispatched until the Purchaser has received the test certificate and the contractor has been informed that they are acceptable. The test certificate must show the actual values obtained from the tests, in the units used in this specification, and must merely confirm that the requirements have been met. In the case of components for which specific type tests or routine tests are not given in this specification, the Contractor shall include a list of the tests normally required for these components. All materials used in the Contract shall withstand and shall be certified to have satisfactorily passed such tests. No inspection or lack of inspection or passing by the

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Purchaser's representative of equipment or materials whether supplied by the Contractor or sub-Contractor, shall relieve the contractor from his liability to complete the contract works in accordance with contract or exonerate him from any of his guarantees.

20. GUARANTEE

The contractor shall guarantee the following:

- Quality and strength of materials used
- Satisfactory operation during the guarantee period of 24 months from the date of commissioning or 30 months from the date of receipt of the cables at SOUTHCO, whichever is earlier.
- Performance figures as supplied by the bidder in the technical data sheet.

21. PACKING AND SHIPPING:

21.1 The cable shall be wound in non-returnable drums conforming to IS:1778-1961 or the latest version thereof. The drum shall be marked with the followings:

- a. Manufacturer's name
- b. Trade mark if any.
- c. Drum number or identification number.
- d. Size of conductor
- e. Size of messenger
- f. Voltage grade
- g. Number and lengths of piece of cable in each drum
- h. Gross mass of packing
- i. Net mass of cable
- j. ISI mark if any.

21.2 The drum shall be of such construction as to assure delivery of conductor in the field free from displacement and damage and should be able to withstand all stresses due to handling and the stringing operation. So that cable surface is not dented, scratched or damaged in any way during transportation and erection. The cable should properly lagged on the drum.

21.3 The cable drum shall be suitable for wheel mounting.

21.4 The normal length of each cable shall be 500 meter. Shorter lengths not less than

22. PERMANENT EMBOSSING:

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All equipments and materials supplied/erected shall bear distinct mark of “ SOUTHCO and Purchase Order No & Date “by way of embossing/punching/casting etc.including other information mentioned in GTP. This should be clearly visible to naked eye.

GUARANTEED TECHNICAL PARTICULARS FOR LT XLPE AB CABLES

Sl No	Description	(3X35+1X25) mm ²	(3X50+1X35) mm ²	(3X50+1X35+ 1X16) mm ²	(3X95+1X70 +1X16)mm ²
		Requirement	Requirement	Requirement	Requirement
1	Ref. ISS / IEC followed	IS 14255/95, IS 398 Part IV	IS 14255/95, IS 398 Part IV	IS 14255/95, IS 398 Part IV	IS 14255/95, IS 398 Part IV
2	Phase Conductor material / Insulation type	H2 / H4 E.C grade aluminium as per IS 8130/84 / XLPE insulation (IS 14255/95)	H2 / H4 E.C grade aluminium as per IS 8130/84 / XLPE insulation (IS 14255/95)	H2 / H4 E.C grade aluminium as per IS 8130/84 / XLPE insulation (IS 14255/95)	H2 / H4 E.C grade aluminium as per IS 8130/84 / XLPE insulation (IS 14255/95)
3	Material of Neutral Catenary	Aluminum alloy as per IS 398 Pt - IV	Aluminum alloy as per IS 398 Pt - IV	Aluminum alloy as per IS 398 Pt - IV	Aluminum alloy as per IS 398 Pt - IV
4	Voltage Class	0.65/1.1 KV	0.65/1.1 KV	0.65/1.1 KV	0.65/1.1 KV
5	No. of Strands of Phase Conductor	7	7	7	19
6	No. of strands/ Average /Minimum Strand Dia. In	7/2.54	7/3.05	7/3.05	19/2.54

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	mm. (Finished Phase conductor.)				
7	Approximate Overall Dia. Of compacted phase conductor after removal of insulation.(in mm.)	7.6	9.15	9.15	12.7
8	No. Of Strands / Average Strand Dia. In mm. (Neutral Catenary.)	7/2.14	7/2.54	7/2.54	7/3.6
9	Minimum Overall Dia. Of compacted Bare Neutral Caternary .(in mm.)	6.42	7.6	7.6	10.8
10	No. Of Strands / Average strand dia. / Nominal cross sectional area of conducting part In mm ² . (St. Light Conductor)	NA	NA	7/1.75/16 mm²	7/1.75/16 mm²
11	Minimum average thickness of insulation of phase Cond. (mm)	1.2	1.5	1.5	1.5
12	Minimum thickness of insulation of Phase Cond. At any point (mm)	0.98	1.25	1.25	1.25
13	Minimum thickness of insulation at any point in street light conductor (mm)	NA	NA	0.98	0.98
14	Maximum DC resistance of Phase conductor at 20 °C Ω/ KM	0.868	0.64	0.64	0.320
1	Maximum DC resistance	NA	NA	1.91	1.91

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5	of street light conductor Ω / Km				
1 6	Maximum DC resistance of neutral cond. Ω / Km	1.38	0.986	0.986	0.493
1 7	Ultimate tensile strength of neutral conductor (KN)	7	10	10	20
1 8	Maximum temperature (Continuous)	90°C for phase and 75 °C for neutral	90°C for phase and 75 °C for neutral	90°C for phase and 75 °C for neutral	90°C for phase and 75 °C for neutral
1 9	Embossing on insulation at each one meter interval	Distinct Non- erasable ISI Mark, IS 14255-95, Manufacturer's B.I.S License No., Name of the Purchaser, Name of the manufacturer, Size of cable, voltage Grade along with sequential marking of length.	Distinct Non- erasable ISI Mark, IS 14255- 95, Manufacturer's B.I.S License No., Name of the Purchaser, Name of the manufacturer, Size of cable, voltage Grade along with sequential marking of length.	Distinct Non- erasable ISI Mark, IS 14255-95, Manufacturer's B.I.S License No., Name of the Purchaser, Name of the manufacturer, Size of cable, voltage Grade along with sequential marking of length.	Distinct Non- erasable ISI Mark, IS 14255-95, Manufacturer's B.I.S License No., Name of the Purchaser, Name of the manufacturer, Size of cable, voltage Grade along with sequential marking of length.
2	Cable drum length	500 m	500 m	500 m	500 m
2 1	Volume Resistivity of insulation at 27°C	$1 \times 10^{13} \Omega \text{-cm}$ min	$1 \times 10^{13} \Omega \text{-cm}$ min	$1 \times 10^{13} \Omega \text{-cm}$ min	$1 \times 10^{13} \Omega \text{-cm}$ min
2 2	Volume Resistivity of insulation at 70°C	$1 \times 10^{11} \Omega \text{-cm}$ min.	$1 \times 10^{11} \Omega \text{-cm}$ min	$1 \times 10^{11} \Omega \text{-cm}$ min.	$1 \times 10^{11} \Omega \text{-cm}$ min.

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N.B : 1) For values not available in relevant ISS, values indicated in our GTP / Tender Specification shall be valid.

2) In case of discrepancies between values of ISS & GTP, better will prevail.

3) Average diameters of strands of each cable shall be ascertained by physical measurement after opening the strands of each phase of a finished AB Cable offere

PAST PERFORMANCE DETAILS

Group	FY	Name/Address of the Costumer	Order Ref	Order Qty	Supply Qty	Date of Supply	Performance Certificate Ref
	2005-06						
	2006-07						
	2007-08						
	2008-09						
	2009-10						

Note:

- 1) Copies of necessary documents in support of above details need to be submitted along with the bid.
- 2) The Purchaser reserves the right to make correspondence with the customers regarding confirmation of any/all of the above facts.

VOLUME – II
FORMS & FORMATS

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ANNEXURE - I

ABSTRACT OF GENERAL TERMS AND CONDITIONS

(For supply of Distribution Transformers)

1. Whether the bidder is a Manufacturer & furnished relevant documents: Yes / No
2. Required Cost of Tender Furnished Yes / No
3. Required Earnest Money Furnished in Demand Draft Yes / No
4. Whether Type test certificates enclosed with the bid: Yes / No
5. Manufacturer's past supply experience including user's certificate furnished or not: - Yes / No
6. Audited annual reports for the last 3 years furnished or not: Yes / No
7. Deviation to the specification , if any (List enclosed or not):- Yes / No
8. Whether agreed to Purchaser's Delivery schedule: Yes / No
If agreed,
 - a) Date of commencement :
 - b) Rate of delivery per month :
9. Whether agreed to Purchaser's Guarantee clause:- Yes / No
10. Whether agreed for 180 days' validity period of Prices Yes / No
11. Whether the Prices are **FIRM**? Yes / No
12. Whether agreed to furnish security deposit in shape of B.G. encashable at Bhubaneswar in case his tender is successful: - Yes / No
13. Whether agreed to penalty for delayed delivery: - Yes / No
14. Whether agreed to Purchaser's standard terms of payment or not: Yes / No
15. Valid ITCC & STCC furnished or not: Yes / No

Signature of the bidder
With seal of the Bidder

This form is to be duly filled up & signed by the Bidder along with seal & submitted along with the Part-I of tender.

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TENDER NOTICE NO: 09/2011-12

Annexure – II

DECLARATION FORM

To

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 thereon 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 undertake 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 furnished 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 THE <PURCHASER>& for the sum as applicable to me / us as per clause No.23 in Annexure-III(A) 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.....200....

Yours faithfully,

(Signature of Bidder with Seal)

(This form should be duly filled up & signed by the bidder & submitted along with the original copy of the bid)

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ANNEXURE – III

PROFORMA FOR COMPOSITE PERFORMANCE BANK GUARANTEE

This Guarantee Bond is executed this ____ day of _____ by us the _____ Bank at _____
P.O. _____ P.S. _____ Dist _____ State _____
(Indicate designation of Purchaser)

Whereas Southern Electricity Supply Company of Orissa Ltd.(SOUTHCO) , Corporate Office: Courtpeta, Berhampur, Ganjam - 760004 registered under the Company Act 1956 (here in after called “the Purchaser”) has placed Purchase Order No. _____ Dt. _____ (hereinafter called “the Agreement”) with M/s _____ (hereinafter called “the Contractor”) for supply of _____ (name of the material) and whereas NESCO/WESCO/SOUTHCO (as the case may be) 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 the SOUTHCO 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 SOUTHCO 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 SOUTHCO an amount not exceeding Rs. _____ (Rupees _____) only against any loss or damage caused to or suffered by SOUTHCO 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 SOUTHCO stating that the amount claimed is due by way of loss or damage caused to or suffered by SOUTHCO 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.

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

3. We, the _____ Bank also undertake to pay to SOUTHCO 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 affect 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 SOUTHCO under by virtue of the said Agreement have been fully paid and its claim satisfied or discharged or till SOUTHCO 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 _____
_____ (Local Bank Name, address and code No.)
_____, Bhubaneswar in writing on or before
_____ (date) we shall be discharged from all liability under this guarantee thereafter.

5. We, the _____ Bank further agree that SOUTHCO 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 SOUTHCO or any indulgence by SOUTHCO 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 SOUTHCO in writing.

Dated _____ the _____ day of Two thousand _____ .

Notwithstanding anything contained herein above.

CORPORATE OFFICE ,SOUTHCO,BERHAMPUR

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

The Bank Guarantee shall be valid up to _____ only.

We are 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 a written claim or demand and received by us 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) Validity period or date up to which the agreement is valid:
- (8) Signature of the Constituent Authority of the Bank with seal:
- (9) Name & addresses of the Witnesses with signature:
- (10) The Bank Guarantee shall be accepted only after getting confirmation from the respective Banks.

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Annexure-IV

TENDER NOTICE NO. 09/2011-12.

Price scheduled for Goods offered

Name of Bidder

1	2	3	4	5	6							7	8
Group	Sl No	Item Description	Tender Qty (in No.)	Offered Qty (in No.)	Ex Works	Excise Duty Amnt @ of	Sales Tax / VAT Amnt @ of with surcharge (If any)	Packing & Forwarding	Inland transportation, in surface & other local costs incidental to delivery	Entry Tax @ of	Any other taxes & duties	Unit Price (a+b+c+d+e+f+g) in Rs.	Total Price (Col 4x6) in Rs.
					(a)	(b)	©	(d)	(e)	(f)	(g)		

Signature of Bidder -----

Note: 1. In case of discrepancy between unit price & total the unit shall prevail.

(TECHNICAL DEVIATION FORMAT)

Clause No	Prescribed as per Tender Specification	Deviation in the bidder's Offer

Bidder's Signature with Seal.

N.B :

The bidder has to mention all technical deviations in his offer which differs from the Technical Requirement of this Tender in above format. Deviations not mentioned in above format but mentioned in any other format or in any other part of the offer document shall not be considered as deviation and the bidder shall be deemed to have accepted our technical requirement without deviation.

(COMMERCIAL DEVIATION FORMAT)

Clause No	Prescribed as per Tender Specification	Provided in the bidder's Offer

Bidder's Signature with Seal.

N.B :

The bidder has to mention all commercial deviations in his offer which differs from the Commercial Requirement of this Tender in above format. Deviations not mentioned in this format but mentioned in any other format or in any other part of the offer document shall not be considered as deviation and the bidder shall be deemed to have accepted our commercial requirement without deviation.