



ODISHA POWER TRANSMISSION CORPORATION LIMITED

OFFICE OF THE SENIOR GENERAL MANAGER

CENTRAL PROCUREMENT CELL

JANAPATH, BHUBANESWAR-751022

TEL NO 0674-2541801 FAX NO 0674-2542964

**TENDER SPECIFICATION NO**  
**Sr.G.M.-CPC-Control & power Cable-61 /2014-15**

**FOR**

**PROCUREMENT OF CONTROL & POWER CABLES**

- SECTION-I : INSTRUCTION TO TENDERERS.  
SECTION-II : GENERAL CONDITIONS OF CONTRACT  
SECTION-III : LIST OF ANNEXURE (SCHEDULES & PROFORMA)  
SECTION-IV : TECHNICAL SPECIFICATION.

Request for online tender documents –From dt-24.10.2014 (10.00 Hrs) to dt- 24.11.2014(16.00 Hrs)

Last date of submission of online tender – Up to dt.25.11.2014 (12.30 Hrs)

Date of opening of Tender - dt. 25.11.2014(15.00 Hrs)



**ODISHA POWER TRANSMISSION CORPORATION LTD.  
REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,  
ODISHA**

**e- TENDER NOTICE NO: CPC- 61 / 2014-15**

For and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD, Sr.G.M. [C.P.C.] invites Tenders from reputed manufacturers in two part bidding system for supply of Control & Power Cables. Bidders would be required to enroll themselves on the tender portal [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) for participating in the above tender .Complete set of bidding documents are available in [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) from 24.10.2014 (10.00 Hrs) up-to 24.11.2014 (16.00 Hrs). Interested manufacturers may visit OPTCL's official web site <http://www.optcl.co.in> and [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) for detail specification.

N.B:-All subsequent addendums / corrigendum to the tender shall be hosted in the OPTCL's official web site <http://www.optcl.co.in> and [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) only.

SENIOR GENERAL MANAGER [C.P.C.]



**NOTICE INVITING TENDER**  
**ODISHA POWER TRANSMISSION CORPORATION LIMITED**  
**REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,**  
**ODISHA, INDIA.**  
**TENDER NOTICE NO CPC-61/2014-15**

For and on behalf of the Odisha Power Transmission Corporation Limited, the undersigned invites bids from manufacturers under two-part bidding system in e-Tender mode only for supply of items as per the following details.

| <i>Sl. No</i> | <i>Tender Specification No.</i>                                 | <i>Pack- age</i> | <i>Description of materials.</i>  | <i>Qty. In Kms.</i>  | <i>Earnest Money Deposit (in INR)</i> | <i>Cost of Tender Spec. Document (in INR)</i>    | <i>Tender Processing Fee (in INR)</i>                      | <i>Last date of receipt &amp; opening of tender</i>            |
|---------------|---|------------------|---|--|---------------------------------------|--|--|--|
| 1.            | SR.G.M.-<br>C.P.C. -<br>Control &<br>power Cable-<br>61/2014-15 |                  | (a) 3&1/2 CX300 Sq.mm<br>Power Cable.<br>(b) 3&1/2 CX120 Sq.mm<br>Power Cable<br>(c) 3&1/2 CX95 Sq.mm<br>Power Cable.<br>(d) 3&1/2 CX25 Sq.mm<br>Power Cable.<br><br>.(e) 2CX2.5 Sq.mm control<br>cable.<br>(f)4CX2.5 Sq.mm control<br>cable.<br>(e)4C X 4 Sq.mm control<br>cable.<br>(f)7C X 2.5 Sq.mm control<br>cable.<br>(g)9C X 2.5 Sq.mm control<br>cable.<br>(h)12C X 2.5 Sq.mm<br>control cable<br>(i) 19C X 2.5 Sq.mm<br>control cable<br>(j) 24C X 2.5 Sq.mm<br>control cable | 21.00<br>16.00<br>04.00<br>04.00<br><br>82.00<br>65.00<br>25.00<br>46.00<br>47.00<br>26.00<br>17.00<br>03.00 | Rs.<br>713000/<br>-                   | Rs.<br>10,000+<br>5% VAT<br><br>(Rs<br>10,500/-) | Rs 5,000/<br>+ service<br>Tax @<br>12.36%<br>Rs<br>5,618/- | 25.11.2014<br>(12.30<br>Hrs) &<br>25.11.2014<br>(15.00<br>Hrs) |

The bidders can view the tender documents from Tender Portal free of cost.

The bidders who want to submit bids shall have to pay non-refundable amount of Rs. 10,500/- (Rupees Ten thousand five hundred) only including VAT @ 5%) towards the tender cost, in the form of Demand draft/Pay order/Cash only, drawn in favour of the D.D.O Head Qrs, OPTCL, Bhubaneswar.

The bidders shall have to submit non-refundable amount of Rs.5,618/- (Rupees Five thousand six hundred eighteen) only including Service Tax @ 12.36%) towards the tender processing fee to K.S.E.D.C.Ltd, in e-payment mode. The e-payment of above amount is to be made to enable the bidder to down load the bid proposal sheets & bid document in electronic mode.

The bidder shall deposit the tender cost, tender processing fee & EMD BG prior to last date & time for submission of bid as notified in tender notice. Local micro & small enterprisers (MSEs) register with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate without payment of the cost of tender specification. They have to submit notarized hard copy of valid registration as local MSE as above on or before the date & time of opening of techno-commercial bid.

The demand draft/pay order for tender cost , processing fee are to be submitted along with the EMD at the office of the undersigned on or before the last date & time of submission of tender.

The bidders shall scan the Demand Draft/Pay order/ Bank guarantee, towards EMD, Tender Cost and tender processing fee and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original as stated above.

The prospective bidders are advised to register their user ID, Password, company ID from website [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) by clicking on hyper link "Register Me".

Any clarifications regarding the scope of work and technical features of the tender can be had from the undersigned during office hours.

***Minimum qualification criteria of bidders: AS STIPULATED IN SECTION-II, (G.T.C.C) OF THE TENDER SPECIFICATION.***

**SENIOR GENERAL MANAGER,  
CENTRAL PROCUREMENT CELL**

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# COMMERCIAL SPECIFICATION

## PART - I

### SECTION - I

#### INSTRUCTIONS TO TENDERER

##### **1. Submission of Bids:-**

The bidder shall submit the bid in Electronic Mode only i.e [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL). The bidder must ensure that the bids are received in the specified website of the OPTCL by the date and time indicated in the Tender notice. Bids submitted by telex/telegram will not be accepted. No request from any bidder to the OPTCL to collect the Bids in physical form will be entertained by the OPTCL.

The OPTCL reserves the right to reject any bid, which is not deposited according to the instruction, stipulated above. The participants to the tender should be registered under ODISHA Sales Tax, Act, VAT Act / Central sales Tax Act.

- (i) For all the users it is mandatory to procure the Digital Signatures.
- (ii) Contractors / Vendors / Bidders / Suppliers are requested to follow the below steps for **Registration**:
  - (a) Click "Register", fill the online registration form.
  - (b) Pay the amount of **Rs. 5,618/-** through DD in favour of K S E D C Ltd Payable at Bangalore.
  - (c) Send the acknowledgment copy for verification.
  - (d) As soon as the verification is being done the e-tender user id will be enabled.
- (iii) After viewing Tender Notification, if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs.
- (iv) If any Bidder wants to participate in the tender he will have to follow the instructions given below:
  - (a) Insert the PKI (which consist of your Digital Signature Certificate) in your System.

(Note: Make sure that necessary software of PKI be installed in your system).
  - (b) Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer).
  - (c) Go to Start > Programs > Internet Explorer.



- (d) Type [www.tenderwizard.com/OPTCL](http://www.tenderwizard.com/OPTCL) in the address bar, to access the Login Screen.
- (e) Enter e-tender User Id and Password, click on “Go”.
- (f) Click on “Click here to login” for selecting the Digital Signature Certificate.
- (g) Select the Certificate and enter DSC Password.
- (h) Re-enter the e-Procurement User Id Password
- (v) To make a request for Tender Document Bidders will have to follow below mentioned steps.
- Click “Un Applied” to view / apply for new tenders.
  - Click on Request icon for online request.
- (vi) After making the request Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps:
- Click to view the tender documents which are received by the user.
  - Tender document screen appears.
  - Click “Click here to download” to download the documents.
- (vii) After completing all the formalities Bidders will have to submit the tender and they must take care of following instructions.
- Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.
  - Note down / take a print of bid control number once it displayed on the screen
- (viii) Tender Opening event can be viewed online.
- (ix) Competitors bid sheets are available in the website for all.
- (x) **For any e-tendering assistant contact help desk number mentioned below.**

- Bangalore – 080- 40482000.

The participants to the tender should be registered under ODISHA Sales Tax Act, VAT Act/Central sales Tax Act.

## **2. Division of Specification:**

The Specification is mainly divided into two parts viz. Part-I and Part-II.

### **Part- I Consists of**

- (i) Section-I : Instructions to Tenderers.
- (2) Section-II : General conditions of supply (commercial)
- (iii) Section-III : Schedules and forms etc.
- (iv) Section-IV : Technical Specification.

### **Part-II Consists of**

Schedule of prices as per Annexure-V.

### **3. Tenders shall be in Two Parts**

The Tenderers are required to submit the tenders in two parts Part-I( techno-commercial) and Part-II (Price Bid).

### **4. Opening of Bids.**

- (a) The part-I shall be opened on the date and time fixed by the OPTCL. Bids will be opened in Electronic mode in presence of the Tenderers or their authorized representatives [limited to one person only] on the due date of opening of tender. After scrutiny of the technical particulars and other commercial terms, clarifications, if required, shall be sought for from the bidders. The Tenderers shall be allowed 15 days time for such activity.
- (b) On receipt of technical clarification the bids shall be reviewed/evaluated and those not in conformity with the technical Specification/qualifying experience, shall be rejected. If any of the technical proposals requires modification to make them comparable, discussion will be held with the participating bidders.

All the responsive bidders shall be given opportunity to submit the revised technical and revised price proposals as a follow up to the clarification on the technical proposals. The qualified bidders shall be given opportunity to submit revised price proposals within 15 days from the date of such discussion or within time frame mutually agreed, whichever is earlier.

- (c) When the revised price proposals are received, Only the revised technical and price proposals will be considered for bid evaluation. The price bids [Part-II] of such of the Tenderers, whose tenders have been found to be technically and commercially acceptable, including those supplementary revised price bids, submitted subsequently, shall be opened in the presence of the bidder's representative on a date and time which will be intimated to all technically and commercially acceptable Tenderers.
- (d) The bidders are required to furnish sufficient information to the Purchaser to establish their qualification/capability to manufacture and/or supply the materials/perform the work. Such information shall include details of bidder's experience, its financial, managerial and technical capabilities.

- (e) The bidders are also required to furnish details of availability of appropriate technical staff and capability to perform after sales service where applicable. The above information shall be considered during the first stage of scrutiny and evaluation of bids and any bid which does not satisfactorily meet these requirements, shall not be considered for price bid evaluation.
- (f) The price bids of the technically and otherwise acceptable bids, shall only be evaluated as per the norms applicable in terms of this Specification.

**5. Purchaser's Right Regarding Alteration of Quantities Tendered.**

The Purchaser may alter the quantities of materials/equipment at the time of placing orders. Initially the Purchaser may place order for lesser quantity with full freedom to place extension orders for further quantity under similar terms and conditions of the original orders. Order may also be split among more than one Tenderer for any particular item if considered necessary in the interest of the Purchaser.

**6. Procedure & Opening Time of Tenders:**

Tenders will be opened in the office of the Sr. General Manager (CPC) on the specified date and time in presence of such of the Tenderers or their authorized representatives (limited to one person only) in case of each bidders who may desire to be present, at the time of opening the bids.

**7. Bidder's Liberty to Deviate from Specification:**

The Tenderer may deviate from the Specification while quoting if in his opinion such deviation is in the line with the manufacturer's standard practice and conducive to a better and more economical offer. All such deviations should however be clearly indicated giving full justifications for such deviation. (Read with Clause-9, Section-II of the Specification).

**8. Eligibility for Submission of Bids.**

Only those manufacturers who have deposited the cost of tender specification are eligible to participate in the tender. They should upload the scanned copy of the D.D/ money receipt as a proof of such payment. The local Micro & Small Enterprises (MSEs) register with respective DICs, Khadi, Village, Cottage & Handicraft Industries, OSIC and NSIC can participate without payment of the cost of tender specification.

**9. Purchaser's Right to Accept/Reject Bids.**

The purchaser reserves the right to reject any or all the tenders without assigning any reasons what so ever if it is in the interest of OPTCL under the existing circumstances. (Read with Clause-10, Section-II of the Specification).

**10. Mode of Submission of Bids.**

(A)Tenders shall be submitted in electronic mode only.  
(www.tenderwizard.com/OPTCL)

(B)Telegraphic or FAX tenders shall not be accepted under any circumstances.

**11. Earnest Money Deposit.**

(i) Earnest Money Deposit of value specified in the notice inviting tenders against each lot/bid is to be submitted on or before the last date and time of submission of tender.Tenders without the required E.M.D. or without documentary proof for exemption from furnishing E.M.D. as indicated at Annexure-X will be rejected outright and their Part-II envelope will be returned to them. The local Micro & Small Enterprises (MSEs) register with respective DICs, Khadi, Village, Cottage & Handicraft Industries, OSIC and NSIC can participate by submitting the EMD @ 50% of the amount indicated in the notice inviting tender.

The earnest money deposit shall be furnished in one of the following forms subject to the conditions mentioned below:

(a)Cash: Payable to Drawing & Disbursing Officer, OPTCL (Hrs. Office, Bhubaneswar-751022.

(b) Bank Draft: To be drawn in favour of the Drawing & Disbursing Officer, OPTCL (Hqrs. Office), Bhubaneswar-751022.

(c) Bank Guarantee from any nationalized/scheduled Bank strictly as per enclosed proforma vide Annexure-VI to be executed on non-judicial stamp paper of appropriate value to be accompanied by the confirmation letter of the issuing Bank.

**Note:**

(i) The validity of the E.M.D. Bank Guarantee shall be 240 days from the date of opening of tender, failing which the tender will be liable for rejection.

No interest shall be paid on the Earnest Money Deposit. Up to Rs.25, 000/- (Rupees twenty-five thousand) only the Earnest Money Deposit may be made either in cash or Bank Draft. Above Rs.25, 000/- (Rupees Twenty Five Thousand only) the Earnest Money Deposit shall be furnished in shape of EMD Bank Guarantee, as per proforma attached.

- (ii) No adjustment towards Earnest Money Deposit shall be permitted against any outstanding amount with the OPTCL.
- (iii) The chart showing particulars of E.M.D. to be furnished by Tenderers of different categories is placed at Annexure-X.
- (iv) In the case of un-successful Tenderer the Earnest Money will be refunded immediately after the tender is decided. In the case of successful tenderer, EMD will be refunded only after furnishing of security money referred to at Clause-19 of section –II. Suits if any, arising out of this Clause shall be filed in a Court of law to which the jurisdiction of high court of Odisha extends.
- (v) Earnest Money will be forfeited if the Tenderer fails to accept the letter of intent and/or purchase orders issued in his favour.
- (vi) Tenders not accompanied by Earnest Money/documentary proof of Exemption of E.M.D. shall be summarily rejected.

12. **Validity of the Bids**

The tenders should be kept valid for a period of 180 days from the date of opening of the tender as notified in the tender notice failing which the tenders will be rejected.

13. **PRICE**

i) Tenderers are requested to quote-‘FIRM’ Price. No deviation from FIRM PRICE will be entertained irrespective of deviation clause No.7 of this part of the specification.

14. **Revision of Tender Price By Bidders**

a) After opening of tenders and within the validity period, no reduction or Enhancement in price will be entertained. If there is any change in price, the tender shall stand rejected and E.M.D. deposited shall be forfeited. In case of bidders who are exempted from depositing E.M.D. and who revise their price within the validity period, the bids for similar items against subsequent tender call notice of OPTCL, may not be considered.

b)after opening of price bid if the validity period is not sufficient to place purchase order ,the tenderers may be asked by the purchaser to extend the validity period of the bid under the same terms and condition as per the original tender.

However ,the tender are free to change any or all conditions including price except delivery period of their bids at their own risk, if they are asked by the purchaser to extend the validity period of the bid prior to opening of price bid.

15. **Tenderers to be fully Conversant with the Clauses of the Specification.**

Tenderers are expected to be fully conversant with the meaning of all the Clauses of the Specification before submitting their tenders. In case of doubt regarding the meaning of any Clause the Tenderer may seek clarification in writing from the Sr. General Manager (CPC) OPTCL. This however, does not entitle the Tenderer to ask for time beyond due date fixed for receipt of tender.

16. **Documents to Accompany Bids**

Tenderers are required to upload the Scanned/.pdf copy of the following document as vender generic document and also upload the .xls bid documents as mentioned below:-

**Part-I (vender generic document)**

| Sl.No | Document Details   | File Name       |
|-------|--|-----------------|
| 1     | Declaration Form duly filled in and signed.<br>(As per Annexure -I)  | Attachment1.pdf |
| 2     | (a)Earnest Money(As per Annexure-VI) or Documents in support of exemption from Earnest Money Deposit if any (b)Tender cost (c)Tender Processing fee.                                       | Attachment2.pdf |
| 3     | Technical Specification conforming to the Purchaser's Specification along with drawings and literature.  | Attachment3.pdf |
| 4     | Photostat copies of latest type test certificate of materials/equipment offered. (Type tests should have been conducted within 5 years prior to the dated tender opening and not earlier). | Attachment4.pdf |
| 5     | List of orders executed for similar items during preceding four years indicating the customer's name &   | Attachment5.pdf |

|      |   |                  |
|------|---|------------------|
|      | P.O. copies.  |                  |
| 6    | Data on past experience as per Clause-7 of Section -II of the Specification.  | Attachment6.pdf  |
| 7    | Sales Tax, Income Tax clearance certificates, for the previous year.  | Attachment7.pdf  |
| 8    | Audited Balance Sheet & Profit Loss Accounts for the previous two years.  | Attachment8.pdf  |
| 9    | Schedule of quantity and delivery in the prescribed proforma vide Annexure-III.   | Attachment9.pdf  |
| 10   | Abstract of price components as per Annexure-VI   | Attachment10.pdf |
| 11   | Any other required document as per tender specification   | Attachment11.pdf |
| 12   | The notarized hard copy & soft copy of valid registration as local MSE (if any) on or before the date & time of opening of technical bid. |                  |
| note | Any attachment having size more than 5Mb is to be divided into parts like Attachment1partI, Attachment1partII etc.                        |                  |

**Part-I (Techno-commercial Bid Sheet)**

|   |   |  |
|---|---|--|
| 1 | All the.xls sheets are to be down loaded and filled in completely and uploaded without any modification to the file name. | .xls sheet name /file name is not to be modified |
|---|---|--|

17. **Documents/Papers to Accompany Part -II Bid**

Part -II of the tender shall consist of the following.

**Part-II (Price Bid Sheet).**

|   |  |  |
|---|--|--|
| 1 | All the .xls sheets are to be down loaded and filled in completely and uploaded without any modification to the file name. | .xls sheet name /file name is not to be modified |
|---|--|--|

18. **Conditional Offer**

Conditional offer shall not be accepted.

19. **General**

- i) In the event of discrepancy or arithmetical error in the schedule of price, the decision of the Purchaser shall be final and binding on the Tenderer.

- ii) For evaluation the price mentioned in words shall be taken if there is any difference in figure and words in the price bid.
- iii) Notice inviting tender shall form part of this Specification.
- iv) The price bids of the technically and otherwise acceptable bids shall only be evaluated.
- v) It should be distinctly understood that the part-II of the bid shall contain only details/documents relating to price, as outlined in clause-17 mentioned herein above. Inclusion of any of the documents/information etc. shall render the bid liable for rejection.
- vi) The tenderer must submit the EMD amount, cost of tender document (Form Fee) and Tender processing fee in a sealed cover envelope super-scribing the tender specification number, Tender Notice No & Date opening of tender clearly on the cover envelope. The said envelope is to be submitted in the office of the purchaser on or before the last date and time of submission of Bids.

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**Expenses in respect of OPTCL's representative for witnessing the inspection & testing of the offered equipment/materials at the inspection and testing site.**

The expenses under the following heads, in respect of OPTCL's representative for witnessing the inspection & testing of the offered equipment/materials at the inspection and testing site, shall be borne by the contractor / supplier.

**a) Hotel Accommodation:**

I. Single room accommodation in 4 star hotel for the OPTCL inspecting officer of the rank of Assistant General Manager (Grade E-6) and above.

II. Single room accommodation in 3 star hotel for the OPTCL inspecting officer of the rank below Assistant General Manager (Grade E-6).

**N.B.:** It is the responsibility of the contractor to arrange the hotel accommodation matching with their inspection and testing schedule, so that the inspecting officer can check-in the hotel one day prior to the date of inspection and check out after the completion of the inspection, subject to availability of the return travel ticket. In case of extended duration of inspection or non-availability of the return travel ticket, Contractor/supplier/manufacturer shall arrange for the extended stay of the inspecting officer in the Hotel accordingly. In case there is no hotel with prescribed standard in and around the place of inspection, the



contractor/supplier/manufacturer shall suggest alternative suitable arrangement at the time of offer for inspection, which is subjected to acceptability of OPTCL inspecting officer.

**b) Journey of the inspecting officer:**

(i) To and fro travel expenditure from the Head Quarters of the inspecting officer to the place of inspection/testing shall be borne by the contractor/supplier/manufacturer. Journey from the Head Quarters of the inspecting officer to the nearest Air Port by train (Ist/IIInd A.C) & A/C Taxi then by Air to the place of inspection/testing or to the nearest place of inspection/testing and then by train (Ist/IIInd A.C) & A/C taxi to the place of inspection/testing shall be arranged by the contractor/supplier/manufacturer.

(ii) For train journey, inspecting officer of the rank Assistant General Manager and above shall be provided with 1st class AC ticket and inspecting officer below the rank of Assistant General Manager shall be provided with 2nd class AC ticket.

(iii) The Air-ticket / train-ticket booking/cancellation is the responsibility of the contractor / supplier.

(iv) Moreover, if during the journey there is an unavoidable necessity for intermediate travel by road/ waterway/sea-route, the contractor/supplier shall provide suitable conveyance to the inspecting officer for travel this stretch of journey or bear the cost towards this. Any such possibilities shall be duly intimated to OPTCL at the time of their offer for inspection.

**c) Local Conveyance:**

At the place of the inspection/testing, for local journey of the inspecting officer between Hotel and inspection/testing site and or any other places, Air-conditioned four wheeler vehicle in good condition shall be provided by the contractor/supplier/manufacturer.

**d) Following points are also to be considered:**

(i) All the above expenses shall be deemed to be included in the bidder's quoted price for that supply item. Bidder shall not be eligible to raise any extra claim in this regard.

(ii) Contractor/supplier/manufacturer may assume that only in 40% of the inspection and testing offer cases, OPTCL inspecting officer, not below the rank of Assistant General Manager will witness the inspection and testing.

(iii) In case of inspection and testing of some critical equipment/materials like Power transformers, OPTCL may depute more than one inspecting

officer. (iv) Contractor/supplier/manufacturer shall judiciously plan the inspection/testing schedule and place of inspection/testing, so that optimum number of inspection/testing and minimum time shall be required to cover all the equipment/materials of the relevant contract package.

(v) It shall be the responsibility of the Contractor/Supplier to organize the above tour related matters of OPTCL inspecting officer including the matters related to overseas inspection/testing, if any.

**PART-I**  
**SECTION-II**

**GENERAL TERMS AND CONDITIONS OF CONTRACT [G.T.C.C.]**

1. **Scope of the contract:**

The scope of the contract shall be to design, manufacture, supply of equipments as per the specification at the consignee's site, and rendering services in accordance with the enclosed technical specification and bill of quantity.

2.0 **Definition of terms:**

For the purpose of this specification and General Terms and Conditions of contract [GTCC], the following words shall have the meanings hereby indicated, except where otherwise described or defined.

2.1 "The Purchaser" shall mean the Senior General Manager[Central Procurement Cell] for and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD., Bhubaneswar.

2.2 "The Engineer" shall mean the Engineer appointed by the Purchaser for the Purpose of this contract.

2.3 "Purchaser's Representative" shall mean any person or persons or consulting firm appointed and remunerated by the Purchaser to supervise, inspect, test and examine workmanship and materials of the equipment to be supplied.

2.4 "The supplier" shall mean the bidder whose bid has been accepted by the purchaser and shall include the bidder's executives, administrators, successors and permitted assignees.

2.5 "Equipment" shall mean and include all machinery, apparatus, materials, and articles to be provided under the contract by the suppliers.

2.6 "Contract Price" shall mean the sum named in or calculated the bid.

2.7 "General Condition" shall mean these General Terms and Conditions of Contract.

2.8 "The Specification" shall mean both the technical as well as commercial parts of the specification annexed to or issued with GTCC and shall include the schedules and drawings, attached thereto as well as all samples and pattern, if any.

- 2.9 “Month” shall mean “Calendar month”.
- 2.10 Writing” shall include any manuscript, type written, printed or other statement reproduction in any visible form and whether under seal or under hand.
- 2.11 “FOR Destination costs ”shall mean the cost of equipment and material at the consignee’s store/site. The cost is inclusive of Excise duty, Sales tax and other local taxes, packing, forwarding and insurance and freight charges.
- 2.12 The term “Contract document” shall mean and include GTCC, specifications, schedules, drawings, form of tender, Notice Inviting Tender, covering letter, schedule of prices or the final General Conditions, any special conditions, applicable to the particular contract.
- 2.13 Terms and conditions not herein defined shall have the same meaning as are assigned to them in the Indian Contract Act, failing that in the Odisha General Clauses Act.

**3. Manner of execution:**

All equipments supplied under the contract shall be manufactured in the manner, set out in the Specification or where not set out, to the reasonable satisfaction of the Purchaser’s representative.

**4. Inspection and Testing:**

- [i] The purchaser’s representative shall be entitled at all reasonable times during manufacture to inspect, examine and test at the supplier’s premises, the materials and workmanship of all equipments/materials to be supplied under this contract and if part of the said equipment/material is being manufactured in. other premises, the supplier shall obtain for the purchaser’s representative permission to inspect, examine and test as if the equipment/material were being manufactured in the contractor’s premises. Such inspection, examination and testing shall not relieve the supplier from his obligations under the contract.
- [ii] The Supplier shall give to the purchaser adequate time/notice (at least clear 15 days for inside the state suppliers and 20 days for outside the state suppliers) in writing for inspection of materials indicating the place at which the equipment/material is ready for testing and inspection and shall also furnish the shop Routine Test Certificate, Calibration certificates of

Testing instruments, calibrated in Govt. approved laboratory with authenticity letter of that laboratory along with the offer for inspection. A packing list along with the offer, indicating the quantity which can be delivered in full truck load/Mini truck load to facilitate issue of dispatch instruction shall also be furnished.

- [iii] Where the contract provides for test at the Premises of the supplier or any of his sub-vendors, the supplier shall provide such assistance, labour, materials, electricity, fuel and instruments, as may be required or as may be reasonably demanded by the Purchaser's representative to carry out such tests efficiently. The supplier is required to produce shop routine test Certificate, calibration certificates of Testing Instruments before offering their materials/equipment for inspection & testing. The test house/laboratory where tests are to be carried out must be approved by the Govt. A letter pertaining to Govt. approved laboratory must be furnished to the purchaser along with the offer for inspection.
- [iv] After completion of the tests, the Purchaser's representative shall forward the test results to the Purchaser. If the test results conform to the specific standard and specification, the Purchaser shall approve the test results and communicate the same to the supplier in writing. The supplier shall provide at least five copies of the test certificates to the Purchaser.
- [v] The Purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is dispute regarding the quality of supply.
- [vi] If the firm fails to present the offered items for inspection/testing as per their inspection call due to any reason(s) during the visit of inspecting officer at the testing site, the firm shall have to bear all expenses towards repetition of inspection and testing of the total offered quantity or part thereof.
- [vii] For PHASE-II delivery inspection call is to be offered by the bidder after 01.04.2015

5. **Training facilities.**

The supplier shall provide all possible facilities for training of Purchaser's Technical personnel, when deputed by the Purchaser for acquiring first hand knowledge in assembly of the equipment, its erection, commissioning

and for its proper operation and maintenance in service, wherein it is thought necessary by the purchaser.

6. **Rejection of Materials**

In the event any of the equipments/material supplied by the manufacturer is found defective due to faulty design, bad workmanship, bad materials used or otherwise not in conformity with the requirements of the Specification, the Purchaser shall either reject the equipment/material or ask the supplier in writing to rectify or replace the defective equipment/material free of cost to the purchaser. The Supplier on receipt of such notification shall either rectify or replace the defective equipment/material free of cost to the purchaser within 15 days from the date of issue of such notification by the purchaser. If the supplier fails to do so, the Purchaser may:-

- [a] At its option replace or rectify such defective equipments/materials and recover the extra costs so involved from the supplier plus fifteen percent and/or.
- [b] Terminate the contract for balance work/supplies, with enforcement of penalty Clause as per contract for the un-delivered goods and with forfeiture of Performance Guarantee/ Composite Bank guarantee.
- [c] Acquire the defective equipment/materials at reduced price, considered equitable under the circumstances.

7. **Experience of Bidders:**

The bidders should furnish information regarding experience particularly on the following points:

- [i] Name of the manufacturer:
- [ii] Standing of the firm and experience in manufacture of equipment/material quoted:
- [iii] Description of equipment/material similar to that quoted, supplied and installed during the last two years with the name(s) of the Organizations to whom supplies were made wherein, at least one (1) certificate shall be from a state/central P.S.U.
- [iv] Details as to where installed etc.
- [v] Testing facilities at manufacturer's works.

- [vi] If the manufacturer is having collaboration with another firm [s], details regarding the same.
- [vii] A list of purchase orders of identical material/equipments offered as per technical specification executed during the last two years along with users certificate. User's certificate shall be legible and must indicate, user's name, address, designation, place of use, and satisfactory performance of the equipment/materials for at least two years from the date of commissioning. Wherein at least one (1) certificate shall be from a State/Central or P.S.U. Bids will not be considered if the past manufacturing experience is found to be un-satisfactory or is of less than 2 (two) years on the date of opening of the bid and bids not accompanying user's certificate will be rejected.

8. **Language and measures:**

All documents pertaining to the contract including specifications, schedule, notices, correspondence, operating and maintenance instructions., drawings or any other writing shall be written in English language. The metric system of measurement shall be used exclusively in this contract.

9. **Deviation from specification:**

It is in the interest of the tenderers to study the specification, specified in the tender schedule thoroughly before tendering so that, if any deviations are made by the Tenderers,(both commercial and Technical), the same are prominently brought out on a separate sheet under heading "Deviations Commercial" and "Deviations Technical".

A list of deviations shall be enclosed with the tender. Unless deviations in scope, technical and commercial stipulations are specifically mentioned in the list of deviations, it shall be presumed that the tenderer has accepted all the conditions, stipulated in the tender specification, not withstanding any exemptions mentioned therein.

10. **Right to reject/accept any tender:**

The purchaser reserves the right either to reject or to accept any or all tenders if the situation so warrants in the interest of the purchaser. Orders may also be split up between different Tenderers on individual merits of the Tenderer. The purchaser has exclusive right to alter the quantities of materials/ equipment at the time of placing final purchase order. After

placing of the order, the purchaser may defer the delivery of the materials. It may be clearly understood by the Tenderer that the purchaser need not assign any reason for any of the above action [s]

11. **Supplier to inform himself fully:**

The supplier shall examine the instructions to tenderers, general conditions of contract, specification and the schedules of quantity and delivery to satisfy himself as to all terms and conditions and circumstances affecting the contract price. He shall quote price [s] according to his own views on these matters and understand that no additional allowances except as otherwise provided there in will be admissible. The purchaser shall not be responsible for any misunderstanding or incorrect information, obtained by the supplier other than the information given to the supplier in writing by the purchaser.

12. **Patent rights Etc.**

The supplier shall indemnify the Purchaser against all claims, actions, suits and proceedings for the infringement of any patent design or copy right protected either in the country of origin or in India by the use of any equipment supplied by the manufacturer. Such indemnity shall also cover any use of the equipment, other than for the purpose indicated by or reasonably to be inferred from the specification.

13. **Delivery:-**

[a] Time being the essence of the contract; the equipment shall be supplied within the delivery period, specified in the contract. The Purchaser, however, reserves the right to reschedule the delivery and change the destination if required. The delivery period shall be reckoned from the date of placing the Letter of Intent/Purchase order, as may be specified in LOI/Purchase order.

[b] The desired delivery period shall be as indicated at Appendix-II (Quantity & Delivery Schedule) of Section-IV (Technical Specification). .

14. **Dispatch instructions.**

I] The equipment/ materials should be securely packed and dispatched directly to the specified site at the supplier's risk by Road Transport only.



II] **Loading & unloading of Ordered Materials.**

It will be the sole responsibility of the supplier for loading and unloading of materials both at the factory site and at the destination site/store.

The Purchaser shall have no responsibility on this account.

15. **Supplier's Default Liability.**

[i] The Purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed hereunder.

[a] If in the judgment of the Purchaser, the supplier fails to make delivery of equipment/material within the time specified in the contract or within the period for which if extension has been granted by the Purchaser in writing in response to written request of the supplier.

[b] If in the judgment of the Purchaser, the supplier fails to comply with any of the provisions of this contract.

[ii] In the event, Purchaser terminates the contract in whole or in part as provided in Clause-15 (I) of this section, the Purchaser reserves the right to purchase upon such terms and in such a manner as he may deem appropriate in relation to the equipment/material similar to that terminated and the supplier will be liable to the Purchaser for any additional costs for such similar equipment/material and/or for penalty for delay as defined in clause-22 of this section until such reasonable time as may be required for the final supply of equipment.

[iii] In the event the Purchaser does not terminate the contract as provided in clause 15(I) of this Section, supplier shall be liable to the Purchaser for penalty for delay as set out in Clause-22 of this section until the equipment is accepted. This shall be based only on written request of the supplier and written willingness of the Purchaser.

16 **Force Majeure:**

The supplier shall not be liable for any penalty for delay or for failure to perform the contract for reasons of force majeure such as acts of god, acts of the public enemy, acts of Govt., Fires, floods, epidemics, Quarantine restrictions, strikes, Freight Embargo and provided that the supplier shall within Ten (10)days from the beginning of delay on such account notify the purchaser in writing of the cause of delay. The purchaser shall verify the facts and grant such extension, if facts justify .

17 **Extension of time:-**

If the delivery of equipment/material is delayed due to reasons beyond the control of the supplier, the supplier shall without delay give notice to the purchaser in writing of his claim for an extension of time. The purchaser on receipt of such notice may or may not agree to extend the contract delivery date as may be reasonable but without prejudice to other terms and conditions of the contract.

18. **Guarantee period: -**

[i] The stores covered by this specification should be guaranteed for satisfactory operation and against defects in design, materials and workmanship for a period of at least 18 [eighteen] months from the last date of delivery or 12 [twelve] months from the date of commissioning whichever is earlier. The above guarantee certificate shall be furnished in triplicate to the purchaser for his approval. Any defect noticed during this period should be rectified by the supplier free of cost to the purchaser provided such defects are due to faulty design, bad workmanship or bad materials used, within one month upon written notice from the purchaser failing which provision of clause 22 (ii) shall apply.

[ii] Equipment/material failed or found defective during the guarantee period shall have to be guaranteed after repair/replacement for a further period of 12 months from the date of commissioning or 18 months from the date of receipt at the store/site after such repair/replacement which ever is earlier. The Bank Guarantee is to be extended accordingly. Date of delivery as used in this clause shall mean the date on which the materials are received in OPTCL'S stores/site in full & good condition which are released for Despatch by the purchaser after due inspection

19. **B.G. towards security deposit, 100% payment and performance guarantee:**

[i] For manufacturers situated Inside & out side the state of Odisha.

A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for 10% [ten percent] of the total FORD cost of the purchase order, shall be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of Sr. General

Manager [Central Procurement Cell] OPTCL within 15 days from the date of issue of the purchase order,. (In case of successful bidder who is a local Micro and Small Enterprise(MSEs) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC 5% (five percent)), shall be furnished from any nationalized/scheduled bank having a place of business at Bhubaneswar, to the office of Sr.General Manager [Central Procurement Cell] OPTCL within 15 days from the date of issue of the purchase order,. The BG shall be executed on non-judicial stamp paper worth of Rs.29.00 [Rupees twenty nine] only or as per the prevalent rules, valid for a period of 20 months from the last date of stipulated delivery period, for scrutiny and acceptance, failing which the supply order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at Bhubaneswar, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.

- [ii] No interest is payable on any kind of Bank Guarantee.
- [iii] In case of non-fulfillment of contractual obligation, as required in the detailed purchase order/Specification, the composite Bank guarantee shall be forfeited.
- [iv] B.G is to be furnished on the total quantity for both PHASE-I & PHASE-II delivery.

**20. Import License**

In case imported materials are offered, no assistance will be given for release of Foreign Exchange. The firm should arrange to import materials from their own quota. Equipment of indigenous origin will be preferred.

**21. (A) Terms of Payment.**

- (i) 100% value of each consignment with 100% Excise duty, Entry Tax, if any, and sales tax in full as applicable along with freight & Insurance charges

will be paid on receipt of materials in good condition at stores/desired site and verification thereof, subject to furnishing and approval of Composite Bank Guarantee at the rate of 10% (Ten percent) of the cost of supplied materials, as stipulated under clause-19 of this specification & on prior approval of guarantee certificate & Test certificate by the Purchaser.

(ii) **Payment of Freight & Insurance charges and Entry Tax.**

Freight & Insurance Charges & Entry Tax if any, incorporated in the Purchase contract shall be paid after receipt of materials at stores/desired site in good condition and on production of authenticated documentary evidence, otherwise no Freight, Insurance charges & entry taxes shall be payable.

**[B]** The supplier shall furnish Composite Bank Guarantee of appropriate amount to OPTCL covering 10% of F.O.R. Destination cost of the purchase order well in advance (within 15 days from the date of issue of the purchase order) before despatch of materials.

**22. Penalty for Delay in Completion of Contract**

- I) If the Supplier fails to deliver the materials/equipments within the delivery schedule, specified in the contract including delivery time extension, if any, granted thereto, the Purchaser shall recover from the Supplier, penalty for a sum of half percent (0.5 percent) of the Ex-works price of the un-delivered equipment for each calendar week of delay or part thereof. For this purpose, the date of receipted challan shall be reckoned as the date of delivery. The total amount of penalty shall not exceed five percent (5%) of the ex-works price of the unit or units so delayed. Equipment will be deemed to have been delivered only when all its components and accessories as per technical Specification are also delivered. If certain components & accessories are not delivered in time, the equipment will be considered delayed until such time as the missing parts are delivered.
- II) If the Supplier fails to rectify /replace the equipment/material within 30 days from the date of intimation of the defect, so noticed by the purchaser within the guarantee period then the penalty for sum of one half of the one percent (0.5%) of the total Purchase order amount for each calendar week of delay shall be recovered by the purchaser within the guarantee period. For this purpose, penalty date will start from the 30<sup>th</sup>. Day from the date of

issue of letter on defectiveness of equipment/material, so supplied, by the purchaser. The total amount of penalty in this case shall not exceed 10% (TEN PERCENT) of the purchase order amount. The purchase order amount shall mean ex-works price + freight & insurance and all taxes & duties. If the defects so intimated will not be rectified by the supplier within the guarantee period, then whole of the B.G. will be forfeited by the purchaser, without any intimation to the Supplier.

**23. Insurance**

The Supplier shall undertake insurance of stores covered by this Specification unless otherwise stated. The responsibility of delivery of the stores at destination in good condition rests with the Supplier. Any claim with the Insurance Company or transport agency arising due to loss or damage in transit has to be settled by the supplier. The Supplier shall undertake free replacement of materials damaged or lost, which will be reported by the consignee within 30 days of receipt of the materials at destination without waiting for the settlement of their claims with the carriers and underwriters.

**24. Payment Due from the Supplier.** All costs and damages, for which the supplier is liable to the purchaser, will be deducted by the purchaser from any money, due to the supplier, under any of the contract (s), executed with OPTCL.

**25. Sales Tax clearance certificate and Balance sheet and profit & Loss Account:**

- i. Sales Tax clearance certificate for the previous year shall be enclosed with the tender.
- ii. Audited Balance Sheet and Profit & Loss Account of the bidder for the previous three years shall be enclosed to assess the financial soundness of the bidder(s).

**26. Certificate of Exemption from Excise Duty/Sales tax.**

Offers with exemption from Excise duty including sales tax shall be accompanied with authenticated proof of such exemption. Authenticated proof for this clause shall mean attested Photostat copy of exemption

certificate. Any claim towards Excise duty/ Sales Tax shall be paid on actual basis subject to production of authenticated documentary evidence.

**27. Supplier's Responsibility.**

Notwithstanding anything mentioned in the Specification or subsequent approval or acceptance by the Purchaser, the ultimate responsibility for design, manufacture, materials used and satisfactory performance shall rest with the Tenderers. The Supplier(s) shall be responsible for any discrepancy noticed in the documents, submitted by them along with the bid(s).

**28. Validity**

Prices and conditions contained in the offer should be kept valid for a minimum period of 180 days from the date of opening of the tender, failing which the tender shall be rejected.

**29. EVALUATION.**

**(I)** Evaluation of bids will be on the basis of the FOR DESTINATION PRICE (By Road Transport) including Excise Duty, sales Tax & other levies as may be applicable. The FORD PRICE shall consist of the following components

- a) Ex-works price.
- b) Packing & Forwarding charges.
- c) Freight.
- d) Insurance.
- e) Excise Duty.
- f) Sales Tax.
- g) Other levies.
- h) Mandatory spares, if any for maintenance of equipment. (At the discretion of the purchaser).
- i) Test charges, if any.
- j) Supervision of erection, testing and commissioning charges, if any.
- k) Any other items, as deemed proper for evaluation by the purchaser.
- l) Loading factors will be taken in to account during evaluation if the prices of some of the items, not quoted.

**(II) Weightage shall be given to the Following factors in the Evaluation & Comparison of Bids.**

In comparing bids and in making awards, the Purchaser will consider other factors such as compliance with Specification, minimum qualification criteria as per clause-30, outright rejection of tenders clause-34 of this tender, relative quality, adaptability of Supplies or services, experience, financial soundness, record of integrity in dealings, performance of materials/equipments earlier supplied, ability to furnish repairs and maintenance services, the time of delivery, capability to perform including available facilities such as adequate shops, plants, equipment and technical Organization.

**(III)** The local MSE bidders shall be required to furnish their willingness to match their bid price with that of the lowest evaluated bidder without any price preference and in case they agree, they shall be eligible to get up to 30% of the tendered quantity to be distributed suitably among the willing MSE bidders failing which the said 30% of the tendered quantity be awarded to the lowest evaluated bidder.

**30. Minimum Qualification Criteria of Bidders.**

All the prospective bidders are requested to note that their bids for tendered equipment can only be considered for evaluation if:

- i) The bidder should have manufacture and supply experience of above rated or higher capacity equipments for a minimum period of 2 (two) years as on the date of opening of the tender
- ii) At least 50% of the tendered quantity. Of above rated or higher capacity equipment should have been supplied within the above-stipulated period.
- iii) The above rated or higher capacity equipment should have at least 2 (two) years successful performance from the date of commissioning. At least one of the performance certificates shall be submitted from Govt.of India/State Govt.(s) or their undertakings.
- iv) The bidder should have conducted type tests on the tendered equipments in Government approved laboratory within five years from the date of opening of the tender.

**31. Jurisdiction of the High Court of Odisha.**

Suits, if any, arising out of this contract shall be filed by either Party in a court of Law to which the jurisdiction of High court of Odisha extends.

**32. Correspondences.**

- i) Any notice to the supplier under the terms of the contract shall be served by Registered Post or by hand at the Supplier's Principal Place of Business.
- ii) Any notice to the Purchaser shall be served at the Purchaser's Principal Office in the same manner.

**33. Official Address of the Parties to the Contract**

The address of the parties to the contract shall be specified:-

- [i] **Purchaser:** Senior General Manager (Procurement)(CPC) OPTCL  
Bhubaneswar-751022 (Odisha)

Telephone No. 0674 - 2541801

FAX No. 0674 - 2542964

- [ii] **Supplier:** Address

Telephone No.

Fax No.

**34. Outright Rejection of Tenders**

Tenders shall be out rightly rejected if the followings are not complied with.

- [i] The tenderer shall submit the bid in electronic mode only and shall submit the cost of tender document and Tender processing fee on or before the date and time of opening of technical bid. In case of local Micro & Small Enterprises (MSEs) registered with respective DICs, Khadi, Village, Cottage & Handicraft Industries, OSIC and NSIC participating in the tender have to submit notarized hard copy of valid registration as local MSE as above on or before the date & time of opening of the techno-commercial.
- [ii] The tenderer shall submit the bid in electronic mode only
- [iii] The Tender shall not be submitted telegraphically or by FAX.
- [iv] The prescribed EMD shall be submitted on or before the date and time of opening of technical bid.
- [v] The Tender shall be kept valid for a minimum period of 180 days from the date of opening of tender.
- [vi] The Tender shall be submitted in two parts as specified.



- [vii] The Tenders shall be accompanied by a list of major supplies effected prior to the date of opening of tender. Data of at least 2 (two) years shall be furnished.
- [viii] The tenderer shall upload the scanned copy of latest type test certificates (for the tests, carried out on the tendered equipments, being offered). Such type tests should have been conducted within last five years from the date of opening of this tender in a Government approved laboratory/CPRI in presence of any Government Organization's representative(s).
- [ix] The schedule of prices should be filled up fully to indicate the break-up of the prices including taxes and duties. Incomplete submission of this schedule will make the tender liable for rejection. Vide Clause-4(ii) of Part-II..
- [x] The Tenderer should quote 'FIRM' price only and the price should be kept valid for a minimum period of 180 days from the date of opening of the tender.
- [xi] The tenderer shall upload the scanned copy legibly written user's certificate to prove the satisfactory operation of the offered equipments/materials for a minimum period of 2 (two) years from the date of commissioning/use as per the tender specification. User's certificate shall include the detailed address of the user with Equipment/Material, Name and type as per this specification, number of years of satisfactory use/operation & date of issue of this user's certificate with official seal written in English only & clearly visible must be furnished. At least one of the user's certificates shall be from state or Central Govt. or their Undertakings.
- [xii] Guaranteed Technical particulars & Abstract of terms and Conditions should be filled in completely.

**35. Documents to be treated as confidential.**

The supplier shall treat the details of the specification and other tender documents as private and confidential and these shall not be reproduced without written authorization from the Purchaser.

**36. Scheme/Projects**

The materials/equipment covered in this specification shall come under "O&M" works.

## **PART-I**

### **SECTION - III**

#### **(LIST OF ANNEXURES)**

The following Schedules and proforma are annexed to this Specification and contained in Section - III as referred to in the relevant Clauses.

|        |  |                 |
|--------|--|-----------------|
| Sl no. | Declaration Form   | ANNEXURE-I      |
| 1      | Abstract of Terms & Conditions to accompany Section – II of Part – I               | ANNEXURE-II     |
| 2      | Schedule of Quantity & Delivery  | ANNEXURE-III    |
| 3      | Abstract of Price Component  | ANNEXURE-IV     |
| 4      | Schedule of prices to accompany Part – II  | ANNEXURE-V      |
| 5      | Bank Guarantee form for Earnest Money Deposit.                                     | ANNEXURE-VI     |
| 6      | Composite Bank Guarantee form for security Deposit, Payment & Performance.         | ANNEXURE-VII    |
| 7      | Chart showing particulars of E.M.D. forms label by Tender of different categories. | ANNEXURE-VIII   |
| 8      | Data on experience   | ANNEXURE-IX     |
| 9      | Schedule of spare parts  | ANNEXURE-X      |
| 10     | Schedule of Installations.   | ANNEXURE-XI     |
| 11     | Deviation from specification(Technical)  | ANNEXURE-XII(A) |
| 12     | Deviation from specification(Commercial)   | ANNEXURE-XII(B) |

**ANNEXURE – I  
DECLARATION FORM**

To

Sir,

1. Having examined the above specification together with Tender conditions referred to therein I/We the undersigned hereby offer to supply the materials covered thereon complete in all respects as per the Specification and General Conditions, at the rates entered in the attached contract schedule of prices in the Tender.
2. I/We hereby undertake to have the materials delivered within the time specified in the Tender.
3. I/We here guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. I/We certify to have purchased/down loaded a copy of the Specification by remitting Cash/Money order/ D.D./ remitting the cost of tender, herewith and this has been acknowledged by your letter No. \_\_\_\_\_ Dated \_\_\_\_\_
5. In the event of Purchase order being decided in my/our favour, I/We agree to furnish the Security Deposit in the manner acceptable to GRID CORPORATION OF ODISHA LTD. and for the sum as applicable to me/us per Clause-19 of Section – II of this Specification within 15 days of issue of Letter of intent/Purchase order failing which I/We clearly understand that the said Letter of intent/Purchase order will be liable to be withdrawn by the Purchaser.

Signed this \_\_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_\_

Yours faithfully,

Signature of Tenderer  
With Seal of the Company

**(This form should be fully filled up by the Tenderer and uploaded along with the Tender in the vender generic document.)**

**ANNEXURE-II**

**ABSTRACT OF GENERAL TERMS AND CONDITIONS OF CONTRACT  
[COMMERCIAL] TO ACCOMPANY PART-I**

|   |   |   |   |  |  |       |  |  |  |   |          |  |   |  |
|---|---|---|---|--|--|-------|--|--|--|---|----------|--|---|--|
| 1   | (a) OPTCL Money Receipt No. & Date towards purchase of Tender.<br>(b) Earnest money furnished.<br><b>(A)</b> Bank Guarantee, <b>(B)</b> Bank Draft.   |   |   |  |  |       |  |  |  |   |          |  |   |  |
| 2   | Manufacturer's supply experience including user's certificate furnished or not.[As per clause No.7 of Section-II.]  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 3   | <table border="0" style="width:100%"> <tr> <td style="width:40%">Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II]</td> <td style="width:10%">PHASE-I</td> <td style="width:20%">(a) Commercial<br/>(b)Technical.<br/>(a)Commercial<br/>(b) Technical.</td> <td style="width:30%">a)Yes/No<br/>b)Yes/No<br/>a)Yes/No<br/>b)Yes/No</td> </tr> <tr> <td colspan="4">-----</td> </tr> <tr> <td>Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II]</td> <td>PHASE-II</td> <td>(a) Commercial<br/>(b)Technical.<br/>(a)Commercial<br/>(b) Technical.</td> <td>-<br/>a)Yes/No<br/>b)Yes/No<br/>a)Yes/No<br/>b)Yes/No</td> </tr> </table> | Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II] | PHASE-I   | (a) Commercial<br>(b)Technical.<br>(a)Commercial<br>(b) Technical. | a)Yes/No<br>b)Yes/No<br>a)Yes/No<br>b)Yes/No | ----- |  |  |  | Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II] | PHASE-II | (a) Commercial<br>(b)Technical.<br>(a)Commercial<br>(b) Technical. | -<br>a)Yes/No<br>b)Yes/No<br>a)Yes/No<br>b)Yes/No |  |
| Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II] | PHASE-I   | (a) Commercial<br>(b)Technical.<br>(a)Commercial<br>(b) Technical.                              | a)Yes/No<br>b)Yes/No<br>a)Yes/No<br>b)Yes/No      |  |  |       |  |  |  |   |          |  |   |  |
| -----   |   |   |   |  |  |       |  |  |  |   |          |  |   |  |
| Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II] | PHASE-II  | (a) Commercial<br>(b)Technical.<br>(a)Commercial<br>(b) Technical.                              | -<br>a)Yes/No<br>b)Yes/No<br>a)Yes/No<br>b)Yes/No |  |  |       |  |  |  |   |          |  |   |  |
| 4   | <b>Delivery</b> (period in months from the date of purchase order)<br>PHASE-I<br>PHASE-II   |   |   |  |  |       |  |  |  |   |          |  |   |  |
| 5   | <b>Guarantee:-</b> Whether agreeable to OPTCL's terms.<br>[As per clause-18 of Section-II]  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 6   | Whether agreeable to furnish Composite B.G. in case his tender be successful [As per clause-19 of Section-II]   | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 7.  | <b>Terms of payment:-</b> Whether agreeable to OPTCL's terms or not<br>[As per clause-21 of Section-II]   | Yes/No.   |   |  |  |       |  |  |  |   |          |  |   |  |
| 8.  | Nature of price:- FIRM  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 9.  | <b>Penalty:-</b> Whether agreeable to OPTCL's terms or not (As per clause-22 of Section-II)   | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 10.   | Whether STCC/ P&L A/C, Balance Sheet for the required period are furnished as per clause-25 of Section-II   | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 11.   | <b>Validity:</b> - Whether agreeable to OPTCL's terms or not<br>[As per clause-28 of Section-II]  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 12.   | Whether recent type test certificates from any Government approved laboratory are furnished or not. [As per clause-34[viii] of section-II]  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 13.   | Whether guaranteed technical particulars in complete shape are furnished or not   | <b>Yes/No</b>   |   |  |  |       |  |  |  |   |          |  |   |  |
| 14.   | Whether dimensional design/drawings furnished or not  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 15.   | Whether materials are ISI/ISO marked.   | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 16.   | Manufacturer's name and it's trademark.   |   |   |  |  |       |  |  |  |   |          |  |   |  |
| 17.   | Whether registered under Odisha Sales Tax Act.<br>1947/central tax Act  | Yes/No  |   |  |  |       |  |  |  |   |          |  |   |  |
| 18.   | Whether declaration form duly filled in furnished or not.   | Yes/No.   |   |  |  |       |  |  |  |   |          |  |   |  |

**ANNEXURE – III**  
**SCHEDULE OF QUANTITY AND DELIVERY**  
(To be filled up by the tenderer)

| Delivery Phase | Sl.No | Description of material            | Qty.offered | Deliveryperiod | Destination | Remarks. |
|----------------|-------|------------------------------------|-------------|----------------|-------------|----------|
| 1              | 2     | 3                                  | 4           | 5              | 6           | 7        |
| PHASE-I        | 1     | (a) 3&1/2 CX300 Sq.mm Power Cable. |             |                |             |          |
|                | 2     | (b) 3&1/2 CX120 Sq.mm Power Cable  |             |                |             |          |
|                | 3     | (c) 3&1/2 CX95 Sq.mm Power Cable.  |             |                |             |          |
|                | 4     | (d) 3&1/2 CX25 Sq.mm Power Cable.  |             |                |             |          |
|                | 5     | (e) 2CX2.5 Sq.mm control cable.    |             |                |             |          |
|                | 6     | (f)4CX2.5 Sq.mm control cable.     |             |                |             |          |
|                | 7     | (e)4C X 4 Sq.mm control cable.     |             |                |             |          |
|                | 8     | (f)7C X 2.5 Sq.mm control cable.   |             |                |             |          |
|                | 9     | (g)9C X 2.5 Sq.mm control cable.   |             |                |             |          |
|                | 10    | (h)12C X 2.5 Sq.mm control cable   |             |                |             |          |
|                | 11.   | (i) 19C X 2.5 Sq.mm control cable  |             |                |             |          |
|                | 12    | (j) 24C X 2.5 Sq.mm control cable  |             |                |             |          |
| PHASE-II       | 1     | (a) 3&1/2 CX300 Sq.mm Power Cable. |             |                |             |          |
|                | 2     | (b) 3&1/2 CX120 Sq.mm Power Cable  |             |                |             |          |
|                | 3     | (c) 3&1/2 CX95 Sq.mm Power Cable.  |             |                |             |          |
|                | 4     | (d) 3&1/2 CX25 Sq.mm Power Cable.  |             |                |             |          |
|                | 5     | (e) 2CX2.5 Sq.mm control cable.    |             |                |             |          |
|                | 6     | (f)4CX2.5 Sq.mm control cable.     |             |                |             |          |
|                | 7     | (e)4C X 4 Sq.mm control cable.     |             |                |             |          |
|                | 8     | (f)7C X 2.5 Sq.mm control cable.   |             |                |             |          |
|                | 9     | (g)9C X 2.5 Sq.mm control cable.   |             |                |             |          |
|                | 10    | (h)12C X 2.5 Sq.mm control cable   |             |                |             |          |
|                | 11    | (i) 19C X 2.5 Sq.mm control cable  |             |                |             |          |
|                | 12    | (j) 24C X 2.5 Sq.mm control cable  |             |                |             |          |

## ANNEXURE-IV

### ABSTRACT OF PRICE COMPONENT [TO ACCOMPANY PRICEBID]

|     |   |   |
|-----|---|---|
| 1   | Price basis   | F.O.R. Purchaser's destination Stores/site. |
| 2   | Packing & forwarding  |   |
| 3   | Rate of Insurance charges   |   |
| 4   | Rate of Freight charges   |   |
| 5   | Rate of excise duty   |   |
| 6   | Rate of CST / VAT   |   |
| 7   | Rate of other taxes/levies /duties etc.   |   |
| 8   | Rate of entry tax.  |   |
| 9.  | Rate of Service Tax on supervision of erection testing and commissioning                          |   |
| 10. | Nature of price.  |   |
| 11. | Whether MODVAT benefit, if any has been fully passed on to the purchaser while quoting the price. | <b>Yes/No</b>                               |

**ANNEXURE – V**  
**(To Accompany Price Bid Part-II)**

SCHEDULE OF PRICE.

The bidders have to download the price bid sheets (in .xls format) from the tender portal and filled in all the required cells and upload the same without making any modification to the sheet name and file name.

N.B. :

1. The Tenderers should fill up this schedule properly & in full. The tender may be rejected if the schedule of price is submitted in incomplete form. No post tender correspondence will be entertained on break up of prices.
2. In case where F&I components are not specifically indicated in this schedule, 5% of the Ex-works price shall be taken towards F&I components for the purpose of comparison of price.
3. Conditional offers will not be acceptable.
4. Price Bid in any other format will not be acceptable and the offer will be rejected.





herein contained shall remain in full force and effect during the aforesaid period of 240 days [two hundred forty days] and it shall continue to be so enforceable till all the dues of the OPTCL under or by virtue of the said Bid have been fully paid and its claims satisfied or discharged or till Managing Director, ODISHA POWER TRANSMISSION CORPORATION LTD. certifies that the terms and conditions of the said Bid have been fully and properly carried out by the said Supplier [s] and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the \_\_\_\_\_ we shall be discharged from all liability under this guarantee thereafter.

5. We, the \_\_\_\_\_ further agree with the OPTCL that

[Indicate the name of the Bank]

the OPTCL 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 Bid or to extend time of performance by the said Supplier [s] from time to time or to postpone for any time or from time to time any of the powers exercisable by the OPTCL against the said supplier [s] and to forbear or enforce any of the terms and conditions relating to the said bid and we shall not be relieved from our liability by reason of any such variation, postponement or extension being granted to the said Supplier [s] or for any forbearance act or omission on the part of the OPTCL or any indulgence by the OPTCL to the said Supplier[s] or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have effect of so relieving us.

1. This guarantee will not be discharged due to the change in the name, style and constitution of the Bank or the supplier [s].

2. We, \_\_\_\_\_ lastly undertake not revoke this

[Indicate the name of the Bank]

Guarantee during its currency except with the previous consent of the OPTCL in writing.

8. We the \_\_\_\_\_ Bank further agree that this guarantee shall also be invocable at our place of business at \_\_\_\_\_, of Bhubaneswar in the state of Odisha. [Indicate the name of the Bank]

'Notwithstanding anything contained herein above'

a) Our liability under the bank guarantee shall not exceed Rs. \_\_\_\_\_ (In words Rupees \_\_\_\_\_).

b) This bank Guarantee shall be valid upto \_\_\_\_\_.

c) We are liable to pay guaranteed amount or any part thereof under this bank guarantee only if you serve upon us at \_\_\_\_\_ branch of Bhubaneswar in the state of Odisha a written claim or demand on or before \_\_\_\_\_ (date of expiry of guarantee).

Dated \_\_\_\_\_ Day of \_\_\_\_\_

For \_\_\_\_\_

[Indicate the name of Bank]

Witness ((Signature, names & address)

1.

2.

**ANNEXURE - VII**  
**PROFORMA FOR COMPOSITE BANK GUARANTEE FOR  
SECURITY DEPOSIT PAYMENT AND PERFORMANCE**

This Guarantee Bond is executed this \_\_\_\_\_ day  
of \_\_\_\_\_ 2011 by us the \_\_\_\_\_ Bank  
at \_\_\_\_\_

P.O. \_\_\_\_\_ P.S. \_\_\_\_\_

District \_\_\_\_\_ State \_\_\_\_\_

1. WHEREAS the ODISHA POWER TRANSMISSION CORPORATION LTD., a body corporate constituted under the Electricity Act, 2003 [hereinafter called "the OPTCL" which shall include its successors and assigns has placed orders No. \_\_\_\_\_ Date \_\_\_\_\_ [hereinafter called "The Agreement"] on M/s. \_\_\_\_\_ [hereinafter called "The Supplier"] which shall include its successors & assigns for supply of materials.

AND WHERE AS the supplier has agreed to supply materials to the OPTCL in terms of the said agreement AND

WHEREAS the OPTCL has agreed [1] to exempt the supplier from making payment of Security [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 Supplier to the OPTCL, a Composite bank Guarantee of the value of 10 % [ten percent] of the contract price of the said agreement.

NOW THEREFORE, in consideration of the OPTCL having agreed [1] to exempt the Supplier from making payment of Security [2] releasing 100% payment to the Supplier and [3] to exempt from furnishing performance guarantee in terms of the said agreement as aforesaid, we, the \_\_\_\_\_ [Bank][hereinafter referred to as 'the Bank'] do hereby undertake to pay to the OPTCL an amount not exceeding Rs. \_\_\_\_\_ [Rupees \_\_\_\_\_] against any loss or damage caused to or suffered by or would be caused to or suffered by the OPTCL by reason of any breach by the said Supplier [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 this guarantee without any demur, merely on demand from the OPTCL stating that the amount claimed is due by way of loss or damage caused to or suffered by the OPTCL by reason of any breach by the said Supplier [s] of any of the terms or conditions, contained in the said agreement or by reason of the supplier'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 \_\_\_\_\_]

3. We the \_\_\_\_\_ Bank} also undertake to pay to the OPTCL any money so demanded notwithstanding any dispute or disputes raised by the supplier [s] in any suit or proceeding instituted/pending before any Court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Supplier [s] shall have no claim against us for making such payment.

4 We, (\_\_\_\_\_Bank) further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said agreement and that it shall continue to do so enforceable till all the dues of the OPTCL under or by virtue of the said agreement have been fully paid and its claims satisfied or discharged or till Managing Director, ODISHA POWER TRANSMISSION CORPORATION LTD. certifies that the terms and conditions of the said agreement have been fully and properly carried out by the said Supplier [s] and accordingly discharges this Guarantee.

Unless a demand or claim under this guarantee is made on us in writing on or before the [Date\_\_\_\_\_], we shall be discharged from all liability under this guarantee thereafter.

5. We,(\_\_\_\_\_Bank) further agree that the OPTCL 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 Supplier [s] and we shall not be relieved from our liability by reason of any such variations or extension being granted to the said supplier [s] or for any forbearance, act or omission on the part of the OPTCL or any indulgence by the OPTCL to the said Supplier [s] or by any such matter or thing whatsoever which under the law relating to sureties would but these provisions have effect of so relieving us.

6. This guarantee will not be discharged due to the change in the name, style and constitution of the Bank and supplier [s].

7. We,[\_\_\_\_\_Bank] lastly undertake not to revoke this guarantee during its currency except with the previous consent of the OPTCL in writing.

8. We the \_\_\_\_\_ Bank further agree that this guarantee shall also be invocable at our place of business at \_\_\_\_\_ of Bhubaneswar in the state of Odisha. [Indicate the name of the Bank]

'Notwithstanding anything contained herein above'

a)Our liability under the bank guarantee shall not exceed Rs.\_\_\_\_\_ (In words Rupees\_\_\_\_\_ ).

b)This bank Guarantee shall be valid up to\_\_\_\_\_ .

c)We are liable to pay guaranteed amount or any part thereof under this bank guarantee only if you serve upon us at \_\_\_\_\_branch of Bhubaneswar in the state of Odisha a written claim or demand on or before \_\_\_\_\_ (date of expiry of guarantee).

Date at \_\_\_\_\_the, \_\_\_\_\_day of 201\_\_\_\_\_

For\_\_\_\_\_ [Indicate the name of Bank]

Witness (Name, Signature & Address)

- 1.
- 2.

## **ANNEXURE-VIII**

### **CHART SHOWING PARTICULARS OF EARNEST MONEY DEPOSIT FURNISHABLE BY TENDERERS**

|    |   |  |
|----|---|--|
| 1. | Central and State Government Undertakings | Exempted   |
| 2. | All other inside & outside state units.   | The amount of EMD as specified in the specification /Tender Notice in shape of bank guarantee /DD. |

NB: - REFUND OF E.M.D.

- [a] In case of unsuccessful tenderers, the EMD will be refunded immediately after the tender is decided. In case of successful tenderer, this will be refunded only after furnishing of Composite Bank Guarantee referred to in clause No.19 of Section-II of this specification.  
Suits, if any, arising out of EMD shall be filed in a court of law to which the jurisdiction of High Court of Odisha extends.
- [b] Earnest Money will be forfeited if the tenderer fails to accept the letter of intent/purchase order, issued in his favour or revises the bid price[ s] within the validity period of Bid.



**ANNEXURE-IX**  
**DATA ON EXPERIENCE**

- [a] Name of the manufacturer.
- [b] Standing of the firm as manufacturer of equipment quoted.
- [c] Description of equipment similar to that quoted [supplied and installed during the last two years with the name of the organizations to whom supply was made].
- [d] Details as to where installed etc.
- [e] Testing facilities at manufacturer's works.
- [f] If the manufacturer is having collaboration with another firm, details regarding the same and present status.
- [g] A list of purchase orders, executed during last three years.
- [h] A list of similar equipments of specified rating, voltage class, Impulse level, short circuit rating, Designed, manufactured, tested and commissioned which are in successful operation for at least two years from the date of commissioning with legible user's certificate. User's full complete postal address/fax/phone must be indicated. (Refer clause No.7 of the Part-I, Section-II of the specification).

Place:

Date:

Signature of tenderer  
Name, Designation, Seal

ANNEXURE-X

SCHEDULE OF SPARE PARTS FOR FIVE YEARS OF NORMAL OPERATION &  
MAINTENANCE

| SL.<br>No | Particulars | Quantity | Unit delivery rate | Total price |
|-----------|-------------|----------|--------------------|-------------|
|           |             |          |                    |             |
|           |             |          |                    |             |
|           |             |          |                    |             |
|           |             |          |                    |             |

Place:

Date:

Signature of Tenderer

Name, Designation, Seal

**ANNEXURE-XI**  
**SCHEDULE OF INSTALLATIONS.**

| <u>Rated MVA</u> | Rated Voltage | Place of installation and complete postal address | Year of commissioning |
|------------------|---------------|---|-----------------------|
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |
|                  |               |   |                       |

Place: -

Date

Signature of Tenderer:  
Name, Designation, Seal



## ANNEXURE-XII(A)

DEVIATION FROM SPECIFICATION (TECHNICAL)

**Deviation from the condition of contract (Technical)**

The tenderer shall enter below, deviation if any, from the conditions of contract as herein.

| Sl.<br>No. | Clause No. of Specification | Particulars of deviation |
|------------|-----------------------------|--------------------------|
|            |                             |                          |

Date:

Place:

SIGNATURE OF TENDERER

NAME:

DESIGNATION:

(SEAL)

## **ANNEXURE-XII(B)**

DEVIATION FROM SPECIFICATION (COMMERCIAL)

### **Deviation from the condition of contract (commercial)**

The tenderer shall enter below, deviation if any, from the conditions of contract as herein.

| Sl.<br>No. | Clause No. of Specification | Particulars of deviation |
|------------|-----------------------------|--------------------------|
|            |                             |                          |

Date:  
Place:

SIGNATURE OF TENDERER  
NAME:  
DESIGNATION:  
(SEAL)

PART – II  
PRICE BID

**1. PRICE:**

- (i) Bidders are required to quote their price(s) for goods offered indicating they are 'FIRM'
- (ii) The prices quoted shall be FOR Destination only at the consignee's site/store inclusive of packing, forwarding, Freight & Insurance. In addition, the break-up of FOR Destination price shall be given as per schedule of Prices in Annexure-V of Section – III. The Tenderer has to certify in the price bid that MODVAT benefit if any, has been fully passed on to the Purchaser, while quoting the tender prices.

**2. INSURANCE :**

Insurance of materials/equipments, covered by the Specification should normally be done by the Suppliers with their own Insurance Company unless otherwise stated. The responsibility of delivery of the materials/equipments at destination stores/site in good condition rests with the Supplier. Any claim with the Insurance Company or Transport agency arising due to loss or damage in transit has to be settled by the Supplier. The Supplier shall undertake free replacement of equipments/materials damaged or lost which will be reported by the Consignee within 30 days of receipt of the equipments/materials at Destination without awaiting for the settlement of their claims with the carriers and underwriters.

**3. CERTIFICATE FOR EXEMPTION FROM EXCISE DUTY/SALES TAX:**

Offers with exemption from excise Duty/ Sales tax shall be accompanied with authenticated proof of such exemption. Authenticated proof for this clause shall mean Photostat copy of exemption certificates, attested by Gazetted Officers of State or Central Government.

**4. PROPER FILLING UP OF THE PRICE SCHEDULE:**

- (i) In case where Freight & Insurance charges are not furnished, 5% of the Ex-works price shall be considered as the freight & Insurance charges.
- (ii) The tenderer should fill up the price schedule (Annexure-V of Section-III) properly and in full. The tender may be rejected if the schedule of price is submitted in incomplete form as per clause-34 (ix) of Section-II of the Specification.

**5. NATURE OF PRICE INDICATED IN SPECIFICATION SHALL BE FINAL.**

The nature of price indicated in the Clause-13, Section – I of PART –I of the Specification shall be final and binding.

# **TECHNICAL SPECIFICATION FOR**

## **CONTROL AND POWER CABLES**

### **1. SCOPE**

This specification covers the testing and performance requirements of power and control cables for installation on the Distribution System of OPTCL.

The equipment offered shall have been successfully type tested and the design shall have been in satisfactory operation for a period 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 power and control cables 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 Project Manager shall have the power to reject any work or material, which, in his judgment, is not in full accordance therewith.

### **2. STANDARDS**

Except where modified by this specification, the power and control cables shall be designed, manufactured and tested in accordance with the latest editions of the following standards.

| <b>IEC / ISO</b> | <b>Indian Standard</b>  | <b>Title</b>   |
|------------------|-------------------------|--|
| IEC 811          | IS-18-10810:1982        | Testing cables   |
| IEC 502          | IS-7098:1985 (part 2)   | LT and 3.3 - 33kVXLPE cables   |
| IEC 502          | IS - 1554:1988 (part 1) | PVC Cables .65/1.1kV   |
| IEC 227          | IS - 5819 :1970         | Short circuit ratings for PVC cables   |
| IEC 228          | 15-8130:1984            | Conductors for insulated cables  |
| IEC 502          | IS - 6474: 1984         | XLPE Cables  |
| IEC 502          |                         | Extruded solid dielectric insulated power cables for rated voltages from 1kV to 30kV |
| IEC 540          | IS - 5831: 1984         | Test Methods for insulation and sheaths of electric cables and cords                 |
| IEC 287          |                         | Calculation of the continuous current rating of cables.                              |
| IS - 3975 : 1979 |                         | Mild steel wires, strips and tapes for armouring of cables                           |

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. Acceptability of any alternative standard is at the discretion of the Project Manager. 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 the case of conflict the order of 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 recommendations.

**All power and control cables to be used in the OPTCL distribution system shall be of the cross-linked polyethelene (XLPE) or polyvinyl chloride (PVC) insulated with PVC sheathing types.**

**8. 1.1KV POLYVINYL CHLORIDE (PVC) INSULATED CABLES**

**8.1. RATED VOLTAGE AND TEMPERATURE**

The rated voltage of the cable shall be 1.1 kV and the maximum operating voltage shall not exceed 110% of the rated voltage.

These cables are suitable for use where the combination of ambient temperature and temperature rise due to load results in a conductor temperature shall not exceeding 70°C\* under normal operation and 160°C under short circuit conditions.

\*See 13.2.4 for heat resisting and general purpose applications.

**8.2. CABLE DESIGN**

**ALL LV Power cable shall be of PVC insulation armoured type.**

The conductors shall be of Flexibility Class 2 as per IS - 8130 : 1984.

**8.2.2. Cross-Sectional area of reduced Neutral Conductors:**

|  |    |    |    |    |    |     |     |     |     |     |     |     |     |
|--|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|
| Nominal cross-sectional area of main conductor (mm <sup>2</sup> )    | 25 | 35 | 50 | 70 | 95 | 120 | 150 | 185 | 240 | 300 | 400 | 500 | 630 |
| Cross-sectional area of reduced neutral conductor (mm <sup>2</sup> ) | 16 | 16 | 25 | 35 | 50 | 70  | 70  | 95  | 120 | 150 | 185 | 240 | 300 |

**8.2.3. Conductor Screening Not required**

**8.2.4. Insulation**

The insulation shall be of Polyvinyl Chloride (PVC) compound. The 'General Purpose' Type A shall be used for the L V Power cables and 'Heat Resisting' Type C for Control cable . Both shall conform to the requirements of IS - 5831: 1984.

| Type of Insulation | Normal Operation | Continuous | Short Circuit Operation |
|--------------------|------------------|------------|-------------------------|
| General Purpose    | 70°C             |            | 160°C                   |
| Heat Resisting     | 85°C             |            | 160°C                   |

The PVC insulation shall be applied by extrusion and the average thickness of insulation shall not be less than the specified nominal value and the maximum value not more than 0.1mm plus 0.1 of nominal and as specified in IS - 1554(part 1): 1988. The insulation shall be applied so that it fits closely on to the conductor and it shall be possible to remove it without damage to the conductor.

**8.2.5. Insulation Screening Not required**

**8.2.6. Core Identification and Laying Up of Cores**

3.5 core cables shall be identified by colouring of the PVC insulation and multi core by numbers as per IS- 1 554 (part 1): 1988

In multi-core cables, the cores shall be laid up together with a suitable lay as recommended in IS - 1554 (Part 1): 1988. The layers shall have successive right and left hand lays with the outermost layer having a right hand lay.

#### 8.2.7. Inner Sheath

The laid up cores of the 3.5, 4 and multi core cables shall be covered with an inner sheath made of thermoplastic material (PVC) applied by extrusion.

The thickness of the sheath shall conform to IEC 502/IS - 1554: 1988. Single core cables shall have no inner sheath.

8.2.8. Armouring Only the 3.5 core LV cables will be armoured. The armour shall be applied helically in a layer of steel wires over the inner sheath of the cable. The armour shall consist of round or flat steel wires and comply with the requirements of IEC 502/IS - 1554: 1988. The steel wires shall comply with IS - 3975:

#### 8.2.9. Outer Sheath

An outer sheath of polyvinyl chloride (PVC) shall be applied over the armour wires (where fitted). The sheath shall be embossed at regular intervals as per the Cable Identification clause of this specification and the minimum thickness and properties shall comply with the requirements of IEC 502/IS - 1554: 1988. The outer sheath for cables with general purpose insulation shall be of the type ST1 PVC compound and for cables with heat resisting insulation type ST2 PVC compound conforming to the requirements of IEC 502/IS - 5831: 1984.

The outer serving shall incorporate an effective anti-termite barrier and shall be capable of withstanding a 10kV DC test voltage for five minutes after installation and annually thereafter.

Cables shall be installed as a single four core cable or three single phase cables plus neutral in a close trefoil formation.

Current ratings shall be calculated in accordance with IEC 287 "Calculation of the continuous current rating of cables with 100% load factor".

#### 8.2.10. Conductor Sizes

#### 8.2.11. Cable Drum Length

The cable shall be supplied in 500metre lengths.

### 9. CABLE IDENTIFICATION

The manufacturer's and Employer's name or trade mark, the voltage grade, cable designation and year of manufacture shall be indented or embossed along the whole length of the cable. The indentation or embossing shall only done on the outer sheath. The alphanumerical character size shall be not less than 20% of the circumference of the cable and be legible.

The following code shall be used to designate cables:

| Constituent                    | Code Letter |
|--------------------------------|-------------|
| Aluminium conductor            | A           |
| XLPE insulation                | 2X          |
| PVC insulation                 | Y           |
| Steel round wire armour        | W           |
| Non-magnetic round wire armour | Wa          |
| Steel strip armour             | F           |
| Non-magnetic strip armour      | Fa          |

|                                |    |
|--------------------------------|----|
| Double steel round wire armour | WW |
| Double steel strip armour      | FF |
| PVC outer sheath               | Y  |

Note: No code letter is required for copper conductor

## 10. SAMPLING OF CABLES

### 10.1. Lot

**In any consignment the cables of the same size manufactured under essentially similar conditions of production shall be grouped together to constitute a lot.**

### 10.2. Scale of Sampling

Samples shall be taken and tested from each lot to ascertain the conformity of the lot to specification.

The samples shall be taken at random. In order to achieve random selection the procedure for selection detailed in **IS - 4905: 1968 shall be followed.**

## 11. NUMBER OF TESTS AND CRITERION FOR CONFORMITY

Suitable lengths of test samples shall be taken from each of the selected drums. These samples shall be subjected to each of the acceptance tests. A test sample shall be classed as defective if it fails any of the acceptance tests. If the number of defective samples is less than or equal to the corresponding number given in 8.3 the lot shall be declared as conforming to the requirements of acceptance test.

## 12. TESTS ON 1 . 1 KV PVC INSULATED CABLES

### 12.1. Type Tests

Certification of type tests already completed by independent test laboratories shall be presented with the bid for each cable type. These tests shall be carried out in accordance with the requirements of IS -8130: 1984/IEC 502, IS - 5831:1984/IEC 540 and IEC 811 unless otherwise specified.

Type testing of 33kV, 11kV and 1.1 kV cables shall include the following:

| Test   | Requirement Reference   | Test Method as a Part of IS-10810/IEC 811 |
|--|-------------------------|---|
| (a) Tests on conductor                           |                         |   |
| Annealing test (copper)                          | IS-8130: 1984/IEC 502   | 1   |
| Tensile test (aluminium)                         | IS-8130: 1984/IEC 502   | 2   |
| Wrapping test (aluminium)                        | IS-8130: 1984/IEC 502   | 3   |
| Resistance test                                  | IS-8130: 1984/IEC 502   | 5   |
| (b) Tests for Armour wires/strips                | IS - 3975: 1979/IEC 502 | 36 - 42                                   |
| (c) Tests for thickness of insulation and sheath | IS-5831:1984/IEC 540    | 6   |
| (d) Physical tests for Insulation                |                         |   |
| Tensile strength and elongation at break         | IS-5831:1984/IEC 540    | 7   |
| Ageing in air oven                               | IS-5831:1984/IEC 540    | 11  |

|   |                                     |   |
|---|-------------------------------------|---|
| Hot test  | IS-5831:1984/IEC 540                | 30  |
| Shrinkage test                                      | IS-5831:1984/IEC 540                | 12  |
| Water absorption (gravimatic)                       | IS-5831:1984/IEC 540                | 33  |
| (e) Physical tests for outer sheath                 |                                     |   |
| Tensile strength and elongation at break            | IS-5831: 1984/IEC 540               | 7   |
| Ageing in air oven                                  | IS-5 831: 1984/IEC 540              | 11  |
| Shrinkage test                                      | IS-5831: 1984/IEC 540               | 12  |
| Hot deformation                                     | IS-5831: 1984/IEC 540               | 15  |
| <b>Test</b>   | <b>Requirement Reference</b>        | <b>Test Method as a Part of IS-10810/IEC811</b> |
| Loss of mass in air oven                            | IS-5831: 1984/IEC540                | 10  |
| Heat shock  | IS-5831: 1984/IEC540                | 14  |
| Thermal stability                                   | IS-5831: 1984/IEC540                | IS-5831: 1984 Appendix B                        |
| (f) Partial discharge test (11 and 33kV only)       | Section 13.2 of this specification  |   |
| 46  |                                     |   |
| (g) Bending test (11 and 33kV only)                 | Section 13.2 of this specification  | 50  |
| (h) Dielectric power factor test (11 and 33kV only) | Section 13. 4 of this specification |   |
| As a function of voltage                            |                                     |   |
| As a function of temperature                        |                                     |   |
| (j) Insulation resistance (volume resistivity) test | IS-8130: 1984/IEC502                | 43  |
| (k) Heating cycle test (11 and 33kV only)           | Section 13.5 of this specification  | 49  |
| (l) Impulse withstand test (11 and 33kV only)       | Section 13.6 of this specification  |   |
| 47  |                                     |   |
| (m) High voltage test                               | Section 13.7 of this specification  | 45  |
| (n) Flammability test                               | Section 13.8 of this specification  | 53  |

Tests (g), (h), (j), (l) and (m) are only applicable to screened cables.

Notwithstanding the conditions of the above paragraph the following tests on screened 11 and 33kV cables shall be performed successively on the same test sample of completed cable.

1. Partial discharge test
2. Bending test followed by partial discharge test
3. Dielectric power factor as a function of voltage
4. Dielectric power factor as a function of temperature
5. Heating cycle test followed by dielectric power factor as a function of voltage and partial discharge tests
6. Impulse withstand test



## 7. High voltage test

If a sample fails in test number 7, one more sample shall be taken for this test, preceded by tests 2 and 5

### **12.2. Acceptance Tests**

The following shall constitute acceptance tests:

- Tensile test (aluminium)
- Annealing test (copper)
- Wrapping test
- Conductor resistance test
- Test for thickness of insulation and sheath
- Hot set test for insulation\*
- Tensile strength and elongation at break test for insulation and outer sheath
- Partial discharge test (for screened cables only)\*\*
- High voltage test
- Insulation resistance (volume resistivity) test.
- XLPE insulation only

\*\* test to be completed on full drum of cable

### **12.3. Routine Tests**

Routine tests shall be carried out on all of the cable on a particular order. These tests shall be carried out in accordance with the requirements of IS - 8130: 1984/IEC 502 and IS - 5831:1984/IEC 540 unless otherwise specified.

The following shall constitute routine tests.

- Conductor resistance test
- Partial discharge test (for 1 kV and 33kV screened cables only)\*
- High voltage test

\* test to be completed on full drum of cable

### **12.4. Optional Test**

Cold impact test for outer sheath (IS - 5831 - 1984), which shall be completed at the discretion of the Project Manager and at the same time as test at low temperature for PVC as stipulated in the section on special tests.

### **12.5. Special tests**

Special tests shall be carried out at the Inspecting officer's discretion on a number of cable samples selected by the Inspecting officer from the contract consignment. The test shall be carried out on 10% of the production lengths of a production batch of the same cable type, but at least one production length. Special tests shall be carried out

in accordance with the requirements of IEC 502 and IEC 540 unless otherwise specified.

The following special tests shall be included:

- Conductor Examination (IEC-228)
- Check of Dimensions
- 4-Hour High Voltage Test for 11 kV and 33kV Cables only
- Test at low temperature for PVC

### **13. DETAILS OF TESTS**

#### **13.1. General**

Unless otherwise stated, the tests shall be carried out in accordance with the appropriate part of IS -10810/IEC 502: 1994 and the additional requirements as detailed in this specification.

#### **13.2. Partial Discharge Test**

Partial discharge tests shall only be made on cables insulated with XLPE of rated voltages above 1.9/3.3kV.

For multicore cables, the test shall be carried out on all insulated cores, the voltage being applied between each conductor and the metallic screen.

The magnitude of the partial discharge at a test voltage equal to  $1.5U_0$  shall not exceed 20pC for XLPE and 40pC for PVC, where  $U_0$  is the power frequency voltage between the conductor and earth or J metallic screen.

#### **13.3. Bending Test**

The diameter of the test cylinder shall be  $20(d + D) \pm 5\%$  for single core cables and  $15(d + D) \pm 5\%$  for multicores, where  $D$  is the overall diameter of the completed cable in millimetres and  $d$  is the diameter of the conductor. After completing the bending operations, the test samples shall be subjected to partial discharge measurements in accordance with the requirements of this specification.

#### **13.4. Dielectric Power Factor Test**

##### 13.4.1. Tan $\delta$ as a Function of Voltage

For cables of rated voltage 1.1 kV and above

The measured value of tan  $\delta$  at  $U_0$  shall not exceed 0.004 and the increment of tan  $\delta$  between  $0.5 U_0$  and  $2 U_0$  shall not be more than 0.002.

##### 13.4.2. Tan $\delta$ as a Function of Temperature For cables of rated voltage 1.1 kV and above

The measured value of tan  $\delta$  shall not exceed 0.004 at ambient temperature and 0.008 at 90°C for XLPE cables.

#### **13.5. Heating Cycle Test**

The sample which has been subjected to previous tests shall be laid out on the floor of the test room and subjected to heating cycles by passing alternating current through

the conductor until the conductor reaches a steady temperature 10°C above the maximum rated temperature of the insulation in normal operation. After the third cycle the sample shall be subjected to a dielectric power factor as a function of voltage and partial discharge test.

**13.6. High Voltage Test**

13.6.1. Type/Acceptance Test

The cable shall withstand, without breakdown, at ambient temperature, an ac voltage equal to 3U<sub>0</sub>, when applied to the sample between the conductor and screen/armour (and between conductors in the case of unscreened cable). The voltage shall be gradually increased to the specified value and maintained for a period of 4 hours.

If while testing, interruption occurs during the 4 hour period the test shall be prolonged by the same extent. If the interruption period exceeds 30 minutes the test shall be repeated.

13.6.2. Routine Test

Single core screened cables, shall withstand, without any failure, the test voltages given in this specification for a period of five minutes between the conductor and metallic screen.

Single core unscreened cables shall be immersed in water at room temperature for one hour and the test voltage then applied for 5 minutes between the conductor and water. Multicore cables with individually screened cores, the test voltage shall be applied for 5 minutes between each conductor and the metallic screen or covering.

Multicore cables without individually screened cores, the test voltage shall be applied for 5 minutes in succession between each insulated conductor and all the other conductors and metallic coverings, if any.

13.6.3. Test Voltages

The power frequency test voltage shall be 2.5 U<sub>0</sub> + 2kV for cables at rated voltages, up to and including 3.8/6.6kV, and 2.5 U<sub>0</sub> for cables at higher rated voltages.

Values of single phase test voltage for the standard rated voltages are as given in the following table:

| Voltage Grade kV | Test Voltage                                 |                            |
|------------------|--|----------------------------|
|                  | Between conductors and screen/armour kV(rms) | Between conductors kV(rms) |
| 0.65/1.1         | 3  | 3                          |

If, for three core cables, the voltage test is carried out with a three phase transformer, the test voltage between the phases shall be 1.732 times the values given in the above table.

When a DC voltage is used, the applied voltage shall be 2.4 times the power frequency test voltage. In all instances no breakdown of the insulation shall occur.

**13.7. Flammability Test**

The period for which the cable shall burn after the removal of the flame shall not exceed 60 seconds and the unaffected portion (uncharred) from the lower edge of the top clamp shall be at least 50mm.

**14. COMPLIANCE WITH SPECIFICATION**

The power and control cables 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 in this document.

#### **15. COMPLIANCE WITH REGULATIONS**

All the equipment shall comply in all respects with the Indian Regulations and Acts in force.

The equipment and connections shall be designed and arranged to minimise the risk of fire and any damage which might be caused in the event of fire.

#### **16. QUALITY ASSURANCE, INSPECTION AND TESTING**

##### **16.1 Quality Plans**

The Contractor shall draw up for each section of the work Quality Plans which shall be submitted to the Project Manager for approval at least two weeks prior to the commencement of work on the particular section. Each Quality Plan shall set out the activities in a logical sequence and, unless advised otherwise, shall include the following:

- An outline of the proposed work and programme sequence;
- The structure of the Contractor's organisation for the Contract;
- The duties and responsibilities assigned to staff ensuring quality of work for the Contract;
- Hold and Notification Points;
- Submission of engineering documents required by the specification;
- The inspection of materials and components on receipt;
- Reference to the Contractor's Work Procedures appropriate to each activity;
- Inspection during fabrication/construction;
- Final inspection and test.

##### **16.2 Inspection and testing**

The OPTCL inspecting officer shall have free entry at all times, while work on the contract is being performed, to all parts of the manufacturer's works which concern the processing of the equipment ordered. The manufacturer shall afford the Project Manager without charge, all reasonable facilities to assure that the equipment being furnished is in accordance with this specification.

The equipment shall successfully pass all the type tests, acceptance tests and routine tests referred to in the section on Tests and those listed in the most recent edition of the standards given in this specification.

The Project Manager reserves the right to reject an item of equipment if the test results do not comply with the values specified or with the data given in the technical data schedule.

Type tests shall be carried out at an independent testing laboratory or be witnessed by a representative of such laboratory or some other representative acceptable to the Project Manager. Routine and acceptance tests shall be carried out by the Contractor at no extra charge at the manufacturer's works.

Type Test certificates shall be submitted with the bid for evaluation. The requirement for additional type tests will be at the discretion of the Project Manager.

The Project Manager may witness routine, acceptance and type tests. In order to facilitate this, the Contractor shall give the Project Manager a minimum of four weeks

notice that the material is ready for testing. If the Project Manager does not indicate his intention to participate in the testing, the manufacturer may proceed with the tests and shall furnish the results thereof to the Project Manager.

Full details of the proposed methods of testing, including connection diagrams, shall be submitted to the Project Manager by the Contractor for approval, at least one month before testing.

All costs in connection with the testing, including any necessary re-testing, shall be borne by the Contractor, who shall provide the Project Manager with all the test facilities which the latter may require, free of charge. The Project Manager shall have the right to select the samples for test and shall also have the right to assure 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 Project Manager.

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

Any cost incurred by the Project Manager in connection with inspection and re-testing as a result of failure of the equipment under test or damage during transport or off-loading shall be to the account of the Contractor.

The Contractor shall submit to the Project Manager five signed copies of the test certificates, giving the results of the tests as required. No materials shall be dispatched until the test certificates have been received by the Project Manager and the Contractor has been informed that they are acceptable.

The test certificates must show the actual values obtained from the tests, in the units used in this specification, and not 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 Project Manager'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 the contract or exonerate him from any of his guarantees.

### **16.3. Guarantee**

The Contractor shall guarantee the following :

- Quality and strength of materials used;
- Satisfactory operation during the guarantee period of one year from the date of commissioning, or 18 months from the date of acceptance of the equipment, whichever is the earlier;

## **17. PACKING AND SHIPPING**

### **17.1. Packing**

The cable shall be wound on strong drums or reels capable of withstanding all normal transportation and handling. Each length of cable shall be durably sealed before shipment to prevent ingress of moisture. The drums, reels or coils shall be lagged or covered with suitable material to provide physical protection for the cable during transit and during storage and handling operations.

In the case of steel drums adequate precautions shall be taken to prevent damage being caused by direct contact between the cable sheath and the steel. These precautions shall be subject to the approval of the Project Manager.

If wooden drums are used then the wood shall be treated to prevent deterioration from attack by termites and fungi.

Each drum or reel shall carry or be marked with the following information:

- Individual serial number
- Employer's name
- Destination
- Contract Number
- Manufacturer's Name
- Year of Manufacture
- Cable Size and Type
- Length of Conductor (metres)
- Net and Gross Mass of Conductor (kg)
- All necessary slinging and stacking instructions.
- Destination;
- Contractor's name;
- Name and address of Contractor's agent in Odisha;
- Country of origin;

The direction of rolling as indicated by an arrow shall be marked on a flange.

#### **17.2. Shipping**

The Contractor shall be responsible for the shipping of all cables, drums and reels supplied from abroad to the ports of entry and for the transport of all goods to the various specified destinations including customs clearance, offloading, warehousing and insurance.

The Contractor shall inform himself fully as to all relevant transport facilities and requirements and loading gauges and ensure that the equipment as packed for transport shall conform to these limitations. The Contractor shall also be responsible for verifying the access facilities specified.

The Contractor shall be responsible for the transportation of all loads associated with the contract works and shall take all reasonable steps to prevent any highways or bridges from being damaged by his traffic and shall select routes, choose and use vehicles and restrict and distribute loads so that the risk of damage shall be avoided. The Contractor shall immediately report to the Project Manager any claims made against the Contractor arising out of alleged damage to a highway or bridge.

All items of equipment shall be securely clamped against movement to ensure safe transit from the manufacturer's facilities to the specified destinations (work sites.)

The Contractor shall advise the storage requirements for any plant and equipment that may be delivered to the Project Manager's stores. The Contractor shall be required to accept responsibility for the advice given in so far as these arrangements may have a bearing on the behavior of the equipment in subsequent service.

#### **Remarks:-**

**a)All the LV Power Cable shall be PVC insulated armoured Aluminum Cable.**

**b)All the Control Cable shall be PVC insulated Unarmoured heat resisting type-C.**

**Schedule Of Guaranteed Technical Particulars for Control Cable.  
(To Furnished by the Bidder)**

| ITEM NO. | DESCRIPTION                                      | UNITS           | BIDDERS OFFER |
|----------|--|-----------------|---------------|
| 1        | Standard to which the cable conforms             | IS-1554/IEC 502 |               |
| 2        | Catalogue Number                                 | -               |               |
| 3        | Conductor Material                               | -               |               |
| 4        | Conductor strands                                | Number          |               |
| 5        | Conductor shape                                  | -               |               |
| 6        | Conductor cross sectional area                   | mm <sup>2</sup> |               |
| 7        | Outer diameter of conductor                      | mm              |               |
| 8        | Number of Cores                                  | -               |               |
| 9.       | Reduced neutral conductor cross sectional area.  | mm <sup>2</sup> |               |
| 10.      | Insulation Material                              | -               |               |
| 11.      | Minimum thickness of Insulation                  | mm              |               |
| 12.      | Nominal thickness of Insulation                  | mm              |               |
| 13.      | Outer diameter of over insulation                | mm              |               |
| 14.      | Nominal thickness of inner sheathing             | mm              |               |
| 15.      | Sheath Material                                  | -               |               |
| 16.      | Type of armouring.                               | -               |               |
| 17.      | Number and diameter/size of armour wires/strips. | No./mm          |               |
| 18.      | Minimum outer sheath thickness                   | Mm              |               |
| 19.      | Nominal outer sheath thickness                   | Mm              |               |
| 20.      | Overall diameter of Cables                       | Mm              |               |
| 21.      | Minimum Bending Radius                           | Mm              |               |
| 22.      | Cable identification                             | -               |               |

|     |   |        |  |
|-----|---|--------|--|
| 23. | Rated Voltage per IEC 502/IS-1554   | kV     |  |
| 24. | Conductor DC Resistance per Km at 20 <sup>o</sup> C   | ohm/km |  |
| 25. | Conductor AC resistance per km. at 20 <sup>o</sup> C and 50 Hz.                               | ohm/km |  |
| 26. | Maximum continuous rating of cable in the conditions outlined in clause-4: system conditions. | A      |  |
| 27. | Minimum insulation resistance per km. at 90 <sup>o</sup> C.                                   | ohm/km |  |
| 28. | Maximum permissible continuous conductor temperature.   | °C     |  |
| 29. | Maximum permissible continuous outer sheath temperature.                                      | C      |  |
| 30. | DC test voltage for 15 mins. After installation.  | KV     |  |
| 31. | Delivery length per drum.   | M      |  |
|     | Weight of conductor per km.   | Kg/km  |  |
| 32. | Weight of cable per km.   | Kg/km  |  |
| 33. |   |        |  |
| 34. | Gross weight of full cable drum.  | Kg     |  |
| 35. | Outer diameter of cable drum.   | Mm     |  |
| 36. | Width of cable drum.  | Mm     |  |
| 37. | Maximum permissible cable pulling tension.  | Kg     |  |
| 38. | Maximum permissible cable side wall pressure.   | Kg     |  |
| 39. | Manufacturer's name.  | -      |  |
| 40. | Country of origin.  | -      |  |

**Schedule of Guaranteed Technical Particulars for Power Cable.  
(To Furnished by the Bidder)**



The particulars given in this schedule will be binding upon the contractor and must be departed from without the written permission of the General Manager / Competent authority.

| <b>Sl.No.</b> | <b>Description.</b>   |  |
|---------------|---|--|
| 1             | System voltage  |  |
| 2             | Make of cable   |  |
| 3             | Type of cable.  |  |
| 4             | IS or other specification to which the cable is manufactured.   |  |
| 5             | Conductor material and its grade  |  |
| 6             | i) Number of wires in each conductor in nos.<br>ii) Nominal dia of wire dia each conductor in No. X mm  |  |
| 7             | No.of cores and nominal cross sectional area of each conductor in No. X sq.mm   |  |
| 8             | Shape of conductors.  |  |
| 9             | Core identification.  |  |
| 10            | Material used for insulation  |  |
| 11            | Total thickness of insuloation used over each conductor in mm.  |  |
| 12            | Specific insulation resistance of dielectric ohm-cum.   |  |
| 13            | Maximum thermal resistivity of dielectric in electric measure (i.e. difference in C between opposite faces of a cm. Cube of the dielectric to transfer 1 Watt of heat). |  |
| 14            | Type width and thickness of screen -mm<br>a) Conductor<br>b) Insulation.  |  |
| 15            | Type of extrusion /cuing process  |  |
| 16            | Minimum thickness of Inner Sheath   |  |
| 17            | Material used for Inner Sheath.   |  |
| 18            | Method of application of Inner Sheath   |  |
| 19            | Minimum thickness of Outer Sheath in mm   |  |
| 20            | Material used for Outer Sheath  |  |
| 21            | Type and size (i.e. Nominal diameter of armour wire) of Armouring in sq.mm.   |  |
| 22            | Total cross sectional area of Armouring in sq.mm  |  |
| 23            | Calculated diameter over layuing up cores (calculated as per fictitious method to IS 10462 Part-I) in mm.   |  |
| 24            | Calculated diameter of cable over inner sheath in mm (calculated as per IS 10462 Part-I)  |  |
| 25            | Calculated diameter of cable over armouring ( as per fictitious method to IS 10462 Part-I) in mm.   |  |
| 26            | Approximate overall diameter of ccable in mm.   |  |
| 27            | Approximate total weight of Aluminium conductor in 1000 mtrs. Length of finished cable in Kgs.  |  |

|    |   |  |
|----|---|--|
| 28 | Max. thermal resistivity of outer sheath in electrical measure (i.e. difference in C between opposite face of cm. Cube of the dielectric to cause transfer of 1 watt of heat).              |  |
| 29 | Total length of cable for each drum in meters.  |  |
| 30 | Total weight of each drum length of cable in Kg.  |  |
| 31 | Total weight of each drum length of cable with drum   |  |
| 32 | Size of each drum.  |  |
| 33 | No. of years the design of the cable offered is in service.   |  |
| 34 | Continuous safe current carrying capacity for following conditions for a single cable-<br>a) Ground temperature<br>b) Thermal resistivity of soil 120 C cm/w<br>c) Depth of laying 1070 mm. |  |
| 35 | Continuous current rating in air at 40 C.   |  |
| 36 | Maximum permissible temperature rise of the conductor for continuous capacity.  |  |
| 37 | Current density under conditions stipulated in 34 above<br>a) Duct<br>b) Air<br>c) Ground   |  |
| 38 | Insulation resistance- Meg. Ohms. Per 1000 Metres of finished cable at 20 C   |  |
| 39 | Conductor resistance =-ohms per 1000 Metres of finished cable at 20 C   |  |
| 40 | Conductor reactance 0 Ohms per 1000 Metres of finished cable at 20C   |  |
| 41 | Specific inductive capacity Micro-farads per 1000 Metres of finished cable at 20 C  |  |
| 42 | Impulse level.  |  |
| 43 | Positive sequence impedance of cable per 1000 metres in ohms.   |  |
| 44 | Negative sequence impedance of cable per 1000 metres in ohms.   |  |
| 45 | Zero sequence impedance of cable per 1000 metres in ohms.   |  |
| 46 | Maximum allowable asymmetrical fault current to earth for 1 sec.  |  |
| 47 | Maximum allowable symmetrical short circuit current for a duration of one second.   |  |

Signature of the \_\_\_\_\_

**SCHEDULE OF QUANTITY. (Annexure-I).**

## DETAIL LIST POWER & CONTROL CABLE AND DELIVERY SCHEDULE

| PHASE                  | Sl.No. | Description Materials              | Unit | Qunty. | Delivery Schedule   | Remarks. |
|------------------------|--------|------------------------------------|------|--------|---|----------|
| 1                      | 2      | 3                                  | 4    | 5      | 6   | 7        |
| <b><u>PHASE-I</u></b>  | 1      | (a) 3&1/2 CX300 Sq.mm Power Cable. | Km   | 16     | Within 3-months from the date of placement of the Order.            |          |
|                        | 2      | (b) 3&1/2 CX120 Sq.mm Power Cable  | Km   | 12     | Within 3-months from the date of placement of the Order.            |          |
|                        | 3      | (c) 3&1/2 CX95 Sq.mm Power Cable.  | Km   | 0      | Within 3-months from the date of placement of the Order.            |          |
|                        | 4      | (d) 3&1/2 CX25 Sq.mm Power Cable.  | Km   | 0      | Within 3-months from the date of placement of the Order.            |          |
|                        | 5      | (e) 2CX2.5 Sq.mm control cable.    | Km   | 50     | Within 3-months from the date of placement of the Order.            |          |
|                        | 6      | (f)4CX2.5 Sq.mm control cable.     | Km   | 10     | Within 3-months from the date of placement of the Order.            |          |
|                        | 7      | (e)4C X 4 Sq.mm control cable.     | Km   | 15     | Within 3-months from the date of placement of the Order.            |          |
|                        | 8      | (f)7C X 2.5 Sq.mm control cable.   | Km   | 0      | Within 3-months from the date of placement of the Order.            |          |
|                        | 9      | (g)9C X 2.5 Sq.mm control cable.   | Km   | 17     | Within 3 months from the date of placement of the Order.            |          |
|                        | 10     | (h)12C X 2.5 Sq.mm control cable   | Km   | 0      | Within 3 months from the date of placement of the Order.            |          |
|                        | 11     | (i) 19C X 2.5 Sq.mm control cable  | Km   | 0      | Within 3 months from the date of placement of the Order.            |          |
|                        | 12     | (j) 24C X 2.5 Sq.mm control cable  | Km   | 3      | Within 3 months from the date of placement of the Order.            |          |
| <b><u>PHASE-II</u></b> | 1      | (a) 3&1/2 CX300 Sq.mm Power Cable. | Km   | 5      | To be delivered after 01.04.2015 as specified in the Purchase Order |          |
|                        | 2      | (b) 3&1/2 CX120 Sq.mm Power Cable  | Km   | 4      | To be delivered after 01.04.2015 as specified in the Purchase Order |          |
|                        | 3      | (c) 3&1/2 CX95 Sq.mm Power Cable.  | Km   | 4      | To be delivered after 01.04.2015 as specified in the Purchase Order |          |
|                        | 4      | (d) 3&1/2 CX25 Sq.mm Power Cable.  | Km   | 4      | To be delivered after 01.04.2015 as specified in the Purchase Order |          |

|    |                                   |    |    |   |  |
|----|-----------------------------------|----|----|---|--|
| 5  | .(e) 2CX2.5 Sq.mm control cable.  | Km | 32 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 6  | (f)4CX2.5 Sq.mm control cable.    | Km | 55 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 7  | (e)4C X 4 Sq.mm control cable.    | Km | 10 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 8  | (f)7C X 2.5 Sq.mm control cable.  | Km | 46 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 9  | (g)9C X 2.5 Sq.mm control cable.  | Km | 30 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 10 | (h)12C X 2.5 Sq.mm control cable  | Km | 26 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 11 | (i) 19C X 2.5 Sq.mm control cable | Km | 17 | To be delivered after 01.04.2015 as specified in the Purchase Order |  |
| 12 | (j) 24C X 2.5 Sq.mm control cable | Km | 0  | To be delivered after 01.04.2015 as specified in the Purchase Order |  |