



**ODISHA POWER TRANSMISSION CORPORATION LTD
CENTRAL PROCUREMENT CELL,
JANPATH, BHUBANESWAR – 751022**

TENDER SPECIFICATION NO.

SR.G.M-CPC -TENDER-NUMERICAL O/C & E/F RELAY - 39/ 2012-13

PROCUREMENT OF

NUMERICAL O/C & E/F RELAY (BACK UP): 156 NOS.

Cost of tender paper:10,000+ 5 %(VAT)

Sale of tender paper: From dt- 14.1.2013(10.00 AM) to dt-07.02.2013(5.00 PM)

Last date of submission of tender paper: dt-08.02.2013(upto 1.00 PM)

Date of opening of Tender : dt-08.02.2013(3.30 PM)



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

TENDER NOTICE NO. 38/ 2012-13

For and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD.,
C.G.M. [C.P.C.] invites Tenders from reputed manufacturers in two part bidding system for supply of **NUMERICAL O/C & E/F RELAY (BACK UP)**. Tender papers shall be sold at the office of the undersigned during working hours (10.00AM to 5.00 P.M) from **14.1.2013(10.00 AM) to dt-7.02.2013(5.00 PM)** during working days, the **last date of submission of tender paper is 8.02.2013 (upto 1.00 PM) & the date of opening of Tender is 8.02.2013 at 3.30 PM** . Any corrigendum relating this tender the bidders are requested to visit OPTCL website. Interested manufacturers may visit OPTCL's official web site <http://www.optcl.co.in> for detail specification.

SR. GENERAL MANAGER [C.P.C.]



NOTICE INVITING TENDER
ODISHA POWER TRANSMISSION CORPORATION LTD.
REGD. OFFICE: JANPATH, BHUBANESWAR – 751 022,
ODISHA, INDIA.

TENDER NOTICE NO. 38/ 2012-13

For and on behalf of the ORISSA POWER TRANSMISSION CORPORATION LTD., the undersigned invites bids under two-part bidding system in double-sealed cover, duly superscribed with tender specification number and date of opening, from manufacturers for supply of the following equipments, as required under the following specifications.

Sl. No	Tender Specification No.	Description of equipments/materials	Quantity in Nos:	Earnest Money Deposit (In Rs.)	Cost of Tender Spec. document (in Rs.)	Last date of receipt & opening of tender
1.	SR.G.M-CPC -TENDER- NUMERIC AL O/C & E/F RELAY - 39/ 2012- 13	NUMERICAL O/C & E/F RELAY (BACK UP)	156	1,00,000 /-	10,000/- + 5 % (VAT)	8.02.2013 (upto 1.00 PM) & 8.02.2013 at 3.30 PM

The tender specification documents can be had from the office of the undersigned on payment of non-refundable cost of tender specification documents in the shape of cash from 10 A.M to 5 P.M during any working day from dt: 14.01.2013 to dt: 07.02.2013(both days inclusive) either in person or by remitting demand draft payable to Drawing & Disbursing Officer, ODISHA POWER TRANSMISSION CORPORATION LTD., Regd. Office: Janpath, Bhubaneswar- 751 022. No tender documents will be sold on any other day except as indicated.

The specification can also be down loaded from OPTCL'S official web site and the same may be submitted along with the cost of tender document by way of demand draft/pay order payable to D.D.O., OPTCL Ltd. Janapath, Bhubaneswar at the time of submission of tender document. In case, any deviation is found in the tender document, submitted by the tenderer from the content mentioned in our web site and/or non-submission of the cost of tender documents, the tender shall be liable to be rejected at any stage of the contract. The tenderer has to indemnify OPTCL for any loss accruing due to such alteration in the terms and conditions of the tender document &/ or for such alternation, resulting, in the cancellation of the contract.

The intending bidders, who want to get a copy of the tender specification document by post, are required to deposit an additional amount of Rs.100/- (Rupees one hundred) only over and above the cost of the tender specification, mentioned against each Tender Specification under heading "Cost of tender specification". Complete bids for different items will be received upto 1.00 P.M. only and the same will be opened at 3:30 P.M. on the date mentioned in the notice inviting tender. Date and time of opening of price bids shall be intimated to the techno-commercially responsive bidders only. In the event of any specified date for the sale, submission or opening of bids being declared a holiday for purchaser, the bids will be sold/ received/ opened up to the appointed times on the next working day. Only one representative of each bidder will be allowed to participate in the bid opening with valid identification certificate. OPTCL also reserves the right to accept or reject any or all tenders without assigning any reason thereof, if the situation so warrants. OPTCL shall not be responsible for any postal delay or loss at any stage.

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

**SR. GENERAL MANAGER
CENTRAL PROCUREMENT CELL**



FAX NO.: 0674 – 2542964
TELEPHONE NO.: 0674 – 2541801

**ODISHA POWER TRANSMISSION CORPORATION LTD.
CENTRAL PROCUREMENT CELL**

JANAPATH, BHUBANESWAR – 751022

**TENDER SPECIFICATION NO. SR.G.M-CPC -TENDER-NUMERICAL O/C & E/F
RELAY - 39/ 2012-13**

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COMMERCIAL SPECIFICATION.
PART-I
SECTION-I
INSTRUCTIONS TO TENDERER

1. Submission of Bids: -

Sealed tenders in triplicate on two part bid basis, each complete in all respects, in the manner hereinafter specified are to be submitted in the office of Chief General Manager [Central Procurement cell], OPTCL, Bhubaneswar on or before the date and time specified against the relevant tender Specification in the notice inviting the tenders. Each copy of the bids [Original, duplicate and triplicate] shall be in separate double sealed envelopes, super scribed on each of the covers, the relevant tender specification number and the due date of opening of the bids on the top right hand side of the envelopes. On the top left sides, original/duplicate/triplicate as is relevant, shall be written. The participants to the tender should be registered under Odisha Sales Tax Act (VAT)/Central Sales Tax Act.

2. Division of Specification.

The specification is mainly divided into two parts viz. Part-I & Part-II.

Part-I Consists of

- | | |
|-------------------|---|
| [i] Section-I | Instruction to Tenderers. |
| [ii] Section-II | General Terms & conditions of contract. |
| [iii] Section-III | Schedules and forms etc. |
| [iv] Section-IV | Technical Specification. |

Part-II Consists of

- [i] Abstract of price components as per Annexure-IV
- [ii] 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 each in separate double sealed covers. Part-I shall be super scribed as “E.M.D”., technical and commercial and Part-II shall be super scribed as “Price Bid”

4. Opening of Bids.

- [a] The part-I shall be opened in the Office of the Senior General Manager [Central Procurement Cell] in presence of such 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 proposal 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 (modification if any) 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, the original price proposals will be returned to the bidders unopened along with their original technical proposals. 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, capacity 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 services. The above information shall be considered during 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 orders for lesser quantity with full freedom to place extension orders for further quantity under similar terms and conditions of the original orders. Orders may also be split among more than one tenderer for any particular item, if considered necessary in the interest of the Purchaser to get the goods/equipment earlier.

6. Procedure and opening time of tenders.

Tenders will be opened in the office of the Senior General Manager [C.P.C.] on the specified date and time in presence of the Tenderers or their authorized representatives [limited to one person only] in case of each bidder who may desire to be present, at the time of opening the bids. The Senior General manager [C.P.C.] or his authorized representatives will, on opening each bid, read aloud the name of the bidder. He shall also read aloud the attested and unattested corrections and shall record the number of such corrections on each page of the Techno-Commercial Bid over his dated initials and also initial all such corrections.

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 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 submit the money receipt as a proof of such payment. Further, the tender specification can also be downloaded from OPTCL's website and the cost of tender specification, in such a case, shall have to be remitted along with the submission of tender papers. Tenders submitted by others will be rejected. Also tender specification downloaded from OPTCL website may not be taken as 100% correct due to website technical difficulties. So it is advisable to purchase hard copies from the office of the Chief General Manager (C.P.C.), OPTCL Bhubaneswar.

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 Tenders.**

[A] Tenders shall be submitted in person or by Registered Post with AD. Any other means of delivery shall not be accepted. When delivered in person, the tenders shall be received by a responsible officer of the office of the Chief General Manager [C.P.C.], OPTCL who shall officially acknowledge the receipt of the same. Tenders received after due date and time shall be returned unopened.

[B] **Telegraphic or FAX tenders** shall not be accepted under any circumstances.

11. **Earnest money deposit:**

The tender shall be accompanied by Earnest Money deposit of value specified in the notice inviting tenders against each lot /bid. Tenders without the required EMD as indicated at **Annexure-VIII** will be rejected outright and their Part-II envelope will be returned to them, unopened.

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 (Hd.qrs. Office), Bhubaneswar - 751022
- (b) **Bank Draft:** -To be drawn in favour of Drawing & Disbursing Officer, OPTCL [H.Qrs.Office], Bhubaneswar-751 022.
- (c) Bank Guarantee from any Nationalized/Scheduled Bank strictly as per enclosed proforma vide **Annexure-VI** to be executed on non-judicial stamp paper worth Rs.29.00 or as applicable, as per prevailing laws in force and also to be accompanied by the confirmation letter of the issuing Bank Branch.

NOTE:

- (i). The validity of the EMD in the form of Bank Guarantee shall be atleast for **240** days from the date of opening of tender failing which the tender will be liable for rejection.
- (ii) No interest shall be paid on the Earnest Money Deposit.
- (iii) E.M.D. in shape of cash may be submitted upto Rs. 25,000/- (Rupees Twenty-five Thousand)only. Above Rs. 25,000/- (Rupees Twenty-five thousand) the Earnest Money Deposit shall be furnished in any one of the forms indicated above (i.e. Through Bank Draft, Bank Guarantee/ National Savings Certificate).
- (iv) No adjustment towards EMD shall be permitted against any outstanding amount with the ODISHA POWER TRANSMISSION CORPORATION LTD..
- (v) The chart showing particulars of EMD to be furnished by Tenderers of different categories is placed at **Annexure-VIII.**
- (vi) In the case of un- successful tenderer, the EMD will be refunded after the tender is decided. In the case of successful Tenderer, this 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.

- (vii) EMD will be forfeited if the tenderer fails to accept the letter of intent and/or purchase order issued in his favour or to execute the order, placed on them.
- (viii) Tenders not accompanied by Earnest Money shall be disqualified.

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, 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.

ii) Discount if any offered by the tenderer should be with the price bid and on unit Ex-works price and/or packing and forwarding charges, which will be applicable irrespective of tendered/ordered. Any conditional offer of discount shall not be accepted.

14. Revision of tender price by Bidders: -

[a] After opening of tenders and within the validity of period, no reduction or enhancement in price will be entertained. If there is any change in price, the tender shall stand rejected and the EMD deposited shall be forfeited.

[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 tenderers 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 Senior General Manager (Central Procurement Cell) 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 submit tenders in the following manner:

Part-I of the Tender shall Contain the following documents.

- [i] Declaration Form. [As per Annexure-I]
- [ii] Earnest Money. [As per **Annexure-VIII**]
- [iii] Technical specification and Guaranteed Technical Particulars conforming to the Purchaser’s Specification along with drawings, literatures and all other required Annexure, duly filled in.
- [iv] Photostat copies of type test certificates of materials/equipments offered as stipulated in the Technical Specification.
- [v] Abstract of Terms & conditions in prescribed proforma as per **Annexure-II**.
- [vi] General Terms & Conditions of supply offer as per Section-II of the Specification.
- [vii] List of orders executed for similar materials/equipments during preceding 2 (two) years indicating the customer’s name, Purchase Order No. & Date, date of supply and date of commissioning etc.
- [viii] Data on past experience **as per Clause-7 of Section-II** of the Specification.

- [ix] Sales tax clearance certificate for the previous year. The permanent account number [PAN] of the firm is required under Income tax Act.
- [x] Audited Balance sheet & profit loss accounts of the bidder, for past (3) three years.
- [xi] Schedule of quantity and delivery in the prescribed Proforma vide **Annexure**, as appended.
- [xii] List of Orders in hand to be executed.

17. Documents/Papers to accompany Part-II Bid.

- (a) Part – II of the tender shall consist of the following
 - (i) Abstract of Price Component, as per Annexure-IV
 - (ii) Schedule of prices in the prescribed proforma as per Annexure-V

18. Conditional Offer:- Conditional offer shall not be accepted.

19. General: -

- (i) Over writing shall be avoided.
- (ii) Erasures and other changes shall bear the dated initial of the person signing the tender.
- (iii) 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.
- (iv) For evaluation, the price mentioned in words shall be taken if there is any difference in figures and words in the price bid.
- (v) Notice inviting tender shall form part of this specification.
- (vi) The price bids of the technically and otherwise acceptable bids shall only be evaluated. The price bids of others along with EMD, if any, shall be returned to the bidders un-opened.
- (vii) Tenderer can offer any lot or all the lots of the tender, if there are many lots. But the tender (bid) must be furnished separately for each lot. For each lot, the tenderer has to submit PART-I & PART-II of the bids separately.
- (viii) The person signing the tender should sign on each page of the Tender paper in acknowledgment of having gone through the entire Tender Specification and in agreement thereof. Tender papers, not signed on each page with official seal by the bidder(s), shall not be considered.
- (ix) 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.**

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 Sr. 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 carryout 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 the 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.

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 equipments/ 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 Orissa.

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,. The BG shall be executed on non judicial stamp paper worth of Rs.29 [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 re validated 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.

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 30th. 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 awaiting 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:

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.

30. Minimum Qualification Criteria of Bidders. (Bidder should meet the criteria)

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 be a manufacturer of the above materials and should have supply experience of above **MATERIALS** 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 should have been supplied within the above-stipulated period.
- iii) The above **MATERIALS** 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 should have purchased/obtained the Bid specification document from the office of the Purchaser or downloaded the same from website of OPTCL, but shall deposit the tender cost, while submitting the tender.
- [ii] The Tender shall be submitted in person or by Registered Post with A.D.
- [iii] The Tender shall not be submitted telegraphically or by FAX.

- [iv] The Tender shall be accompanied by the prescribed Earnest Money deposit, valid for a period of 240 days from the date of tender opening if furnished in shape of EMD BG, failing which the tender will be liable for rejection
 - [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] Tender shall be accompanied by Photostat 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] Tender shall be accompanied by 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" and "TP&C" works.

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.

1	Declaration form	ANNEXURE-I
2	Abstract of terms and conditions to accompany Section-II of Part-I	ANNEXURE-II
3	Schedule of Quantity and Delivery	ANNEXURE-III
4	Abstract of price component [to accompany Part-II of this specification]	ANNEXURE-IV
5	Schedule of prices to accompany Part-II	ANNEXURE-V
6	Bank Guarantee form for earnest money deposit	ANNEXURE-VI
7	Composite Bank Guarantee form for security deposit, payment and performance	ANNEXURE-VII
8.	Chart showing particulars of E.M.D.	ANNEXURE – VIII
9.	Data on Experience.	ANNEXURE – IX
10.	Schedule of spare parts.	ANNEXURE-X
11.	Schedule of Installations.	ANNEXURE-XI

ANNEXURE – I DECLARATION FORM

To

The Sr. General Manager (CPC)

OPTCL Head Qrs.BBSR,751022

Sub:- Tender Specification No- _____
Sir,

1. Having examined the above specification together with terms & conditions referred to therein * I/We the undersigned hereby offer to supply the materials/equipments covered therein 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/equipments delivered within the time specified in the Tender.
3. * I/We hereby guarantee the technical particulars given in the Tender supported with necessary reports from concerned authorities.
4. * I/We certify to have purchased/ downloaded 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/ money receipt No. Dated,
5. In the event of Tender, being decided in *my/our favour, * I/We agree to furnish the Composite B.G. in the manner, acceptable to ODISHA POWER TRANSMISSION CORPORATION LTD., and for the sum as applicable to *me/us as 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, and the EMD deposited by us shall be forfeited by OPTCL.

Signed this

day of

2011

Yours faithfully

Signature of the Tenderer with seal of the company

[This form should be dully filled up by the tenderer and submitted along with the original copy of the tender]

- (Strikeout whichever is not applicable).

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. (b) Earnest money furnished. (A) Bank Guarantee, (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	Deviations to the specification if any [list enclosed or not As per clause-9 of the Section-II]	(a) Commercial (b)Technical. a)Yes/No b)Yes/No a)Yes/No b)Yes/No
4	Delivery (period in months from the date of purchase order)	
5	Guarantee:- Whether agreeable to OPTCL's terms. [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.	Terms of payment:- Whether agreeable to OPTCL's terms or not [As per clause-21 of Section-II]	Yes/No.
8.	Nature of price:- FIRM	Yes/No
9.	Penalty:- 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.	Validity: - Whether agreeable to OPTCL's terms or not [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	Yes/No
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 Orissa Sales Tax Act. 1947/ VAT tax Act 2004	Yes/No

18.	Whether declaration form duly filled in furnished or not.	Yes/No.
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Place: -

Date: -

Signature of the Tenderer
with seal of the company

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

Description of materials	Quantity required	Desired Delivery	Destination	Remarks.
1	2	3	4	5
NUMERICAL O/C & E/F RELAY (BACK UP).	156 NOS.		EHT Store,Bhubaneswar.	

Place:

Date:

Signature of Tenderer
with seal of Company

ANNEXURE-IV

ABSTRACT OF PRICE COMPONENT [TO ACCOMPANY PRICE BID]

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 sales Tax	
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.	Yes/No

Place
Date:

Signature of Tenderer
With seal of company

NB:- Abstract of price component shall be done for equipment/material offered, for testing & commissioning charges, if any. All the above prices will be taken during bid price evaluation.

ANNEXURE-V.

SCHEDULE OF PRICES

TENDER SPECIFICATION No.

Item No.	Description.	Qty (unit)	Unit Ex-factor Price.	Unit Packing & Forwarding.	Unit Freight Charges.	Unit Insurance Charges.	Unit landing cost at destination store/site excluding ST,ED & Entry tax.
1.	2.	3.	4.	5.	6.	7.	8.
1	NUMERICAL O/C & E/F RELAY (BACK UP).	156					

Unit E.D.	Unit S.T.	Unit Entry Tax.	Unit landing Cost including All taxes & Duties.	Total landing cost Including all taxes & duties.
9.	10.	11.	12= (8+9+10+11)	13= (3X12)

Signature of Tenderer
Name, Designation and Seal

NB: -

1. The tenderer should fill up the schedule properly and in full. The tender will be rejected, if the schedule of price is submitted in incomplete form. No post tender correspondence will be entertained on break-up of prices. Also, the supplier should agree for delivery at sub-station site.
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. The Tenderer shall certify in the price bid that MODVAT benefit, if any, has been fully passed on to the purchaser while quoting the tender price.
4. Conditional offers will not be acceptable.

5. The bidder is to clearly indicate the period up to which the tax holidays are available to them.
6. Price bid in any other format will not be acceptable and the offer will be rejected.
7. Test charges (Routine/type) if any, mandatory spares, if any, maintenance equipment charges, if any, as per Technical Specification, supervisory charges, if any, (in case of equipments by taking 30 Man days) shall be indicated separately, row-wise.
8. All the above charges will be taken into account, during bid price evaluation.

ANNEXURE-VI

PROFORMA FOR BANK GUARANTEE FORM FOR EARNEST MONEY DEPOSIT

Ref	Date	Bank Guarantee No:
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1. In accordance with invitation to Bid No. _____ Dated _____ of ODISHA POWER TRANSMISSION CORPORATION LTD. [OPTCL][herein after referred to as the OPTCL for the purchase of _____ Messers _____ Address _____ wish/wished to participate in the said tender and as a Bank Guarantee for the sum of Rs. _____ [Rupees] Valid for a period of 240 days [Two hundred forty days] is required to be submitted by the Tenderer. We the _____ [Indicate the Name of the Bank] [Hereinafter referred to as 'the Bank'] at the request of M/S _____ [Herein after referred to as supplier (s)] do hereby unequivocally and unconditionally guarantee and undertake to pay during the above said period, on written request by the Sr. General Manager [CPC] ODISHA POWER TRANSMISSION CORPORATION LTD. _____ [Indicate designation of the purchaser] an amount not exceeding Rs. _____ to the OPTCL, without any reservation. The guarantee would remain valid up to 4.00 PM of _____ [date] and if any further extension to this is required, the same will be extended on receiving instructions from the _____ on whose behalf this guarantee has been issued.

2. We the _____ do hereby, further undertake [Indicate the name of the bank] to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the OPTCL stating that the amount claimed is due by way of loss or damage caused to 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 or failure to perform the said Bid . 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. _____

3. We undertake to pay the OPTCL any money so demanded notwithstanding any dispute or disputes so raised by the contractor [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, the _____ further agree that the guarantee
[Indicate the Name of the Bank]
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.
6. This guarantee will not be discharged due to the change in the name, style and constitution of the Bank or the supplier [s].
7. 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 _____, Bhubaneswar in the state of Odisha. [Indicate the name of the Branch]

‘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 _____ 2013 by us the _____ Bank at

P.O. _____ P.S. _____
District _____ State _____

1. WHEREAS the ORISSA 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, ORISSA 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 _____, Bhubaneswar in the state of Odisha. [Indicate the name of the Branch]

‘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 MVA 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

Place:
Date:

Signature of Tenderer
Name, Designation, Seal

ANNEXURE-XI
SCHEDULE OF INSTALLATIONS.

Rated MVA	Rated Voltage	Place of installation and complete postal address	Year of commissioning

Place: -
Date

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.

ANNEXURE-V.

SCHEDULE OF PRICES

TENDER SPECIFICATION No.

Item No.	Description.	Qty (unit)	Unit Ex-factor Price.	Unit Packing & Forwarding.	Unit Freight Charges.	Unit Insurance Charges.	Unit landing cost at destination store/site excluding ST,ED & Entry tax.
1.	2.	3.	4.	5.	6.	7.	8.
1	NUMERICAL O/C & E/F RELAY (BACK UP).	156					

Unit E.D.	Unit S.T.	Unit Entry Tax.	Unit landing Cost including All taxes & Duties.	Total landing cost Including all taxes & duties.
9.	10.	11.	12= (8+9+10+11)	13= (3X12)

Signature of Tenderer
Name, Designation and Seal

NB: -

9. The tenderer should fill up the schedule properly and in full. The tender will be rejected, if the schedule of price is submitted in incomplete form. No post tender correspondence will be entertained on break-up of prices. Also, the supplier should agree for delivery at sub-station site.
10. 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.
11. The Tenderer shall certify in the price bid that MODVAT benefit, if any, has been fully passed on to the purchaser while quoting the tender price.
12. Conditional offers will not be acceptable.
13. The bidder is to clearly indicate the period up to which the tax holidays are available to them.
14. Price bid in any other format will not be acceptable and the offer will be rejected.
15. Test charges (Routine/type) if any, mandatory spares, if any, maintenance equipment charges, if any, as per Technical Specification, supervisory charges, if any, (in case of equipments by taking 30 Man days) shall be indicated separately, row-wise.
16. All the above charges will be taken into account, during bid price evaluation.

SECTION – IV

TECHNICAL SPECIFICATION RELAYS

(I) GENERAL DESCRIPTION (SCOPE) :

Specification of the Relay for this part covers the general protection schemes for 220 KV, 132 KV and 33 KV system (For feeders, transformers and Bus coupler/Bus transfer Bays) in OPTCL system. Bidders are intimated to supply the relays, which shall be suitable to OPTCL. Proper care to be taken while quoting the latest version of Numerical relays. Since these relays shall be used for replacement in different sub-station, the Bidder shall render all helps for replacement, installation and Testing free of cost to OPTCL if required.

1. All relays shall conform to the requirements of IS: 3231/IEC-60255 and IEC-61850 protocol compliance. Relay shall be suitable for flush or semi-flush mounting on the front with connections from the rear.
2. Shall be provided with proper testing facilities procedure to be adopted.
3. The protective relay shall be suitable for efficient and reliable operation of the protection scheme as indicated in the specification.
4. No control relay which shall trip the power circuit breaker when the relay is de-energised shall be employed in the circuit.
5. Provision shall be made for easy isolation of trip circuits of each relay for the purpose of testing and maintenance.
6. All protective relays and alarm relays shall be provided with extra isolated pair of contacts wired to terminals of the relay exclusively for future use.
7. The Bidder shall include in his bid a list of installations where the relays quoted have been in satisfactory operation.
8. The numerical relays shall include the followings:
 - i) Necessary software and hardware to up/down load the data to/from the relay from/to the personal computer.
 - ii) The relay shall have suitable communication facilities for future connectivity to SCADA. The relay shall be capable of supporting IEC61850 protocol. Neither the interface hardware nor the software for connectivity to SCADA will form part of the scope of this specification.
 - iii) In the numerical relays the features like disturbance recorder and event logging function as available in the relays shall be supplied.
9. Relays shall be suitable for flush mounting on the panel board. All the relays shall be neck connected, Protected from dust with tight cases for tropical use and superbly finished container. LED type operating indicators reset devices shall be provided. There shall be suitable for operation from the front of the relay without opening the cover.

The relays shall comply in all respects with the requirement of IS: 3231/1965, equivalent IEC standards and shall be suitable for operation under the climate conditions specified. The relays shall be suitable for operation with a temperature range of 0 deg. to 50 deg. C. The current coils shall be rated for a continuous current of 1 Amps as specified against each. And the voltage coil for 110 volts normal PT voltage and 220V±10% for the DC system voltage. The contacts of the relays shall be silvered and precaution shall be taken to prevent or minimize damage due to arcs which have to be successfully broken against 240 V D.C. when open, the contacts shall withstand a voltage of 115% of the normal circuit voltage. The relays shall preferably be provided with suitable seal in devices.

9.1. The offered Protection relays shall be completely numerical with protection functions using software algorithm. Hard ware based measurement shall not be acceptable.

9.2. Any proprietary protocol externally converted to IEC 61850 with the help of a protocol converter to be used for communication with an outside network shall not be acceptable. No internal protocol converter can be used for the numerical relays proposed to procure .

9.3. The relays should have high immunity to electrical and electromagnetic interference.

9.4. The relays should confirm to following mandatory type tests for safe operation of the relay;

High frequency disturbance test as per IEC 61000-4-1

Fast transient disturbance test as per IEC 61000-4-4

Electrostatic discharge as per IEC 61000-4-2

Radio frequency interference as per ANSI C 37.90.2

Impulse test as per IEC 61000-4-3

9.5. It shall be possible to energise the relay from either AC or DC auxiliary supply.

9.6. The offered relay shall have a comprehensive local HMI for interface. It shall have the following minimum elements so that the features of the relay can be accessed and setting changes can be done locally.

a) At least a minimum of 32 characters alphanumeric backlit LCD display unit.

b) Fixed LEDs (for trip, Alarm, Relay available/run & Relay out of service/faulty) and minimum eight programmable LEDs which can be assigned to any protection function for local annunciation shall be available. The device shall allow the option of latching the LED indication after a trip command so that the LEDs always indicate the operation for the last trip signal.

c) Tactile keypad / or key pad with arrow keys for browsing and setting the relay menu.

9.7. The relays should have communication ports viz. Front RS 232/USB port for local communication for relay settings, modifications, extraction and analysis of fault/event/ disturbance records from a laptop and Rear redundant port (RS 485) for remote communication to SCADA system on IEC61850 protocol.

9.8. It shall be possible to daisy chain/multi dropped all the numerical relays on RS 485 rear port or some advanced network, for remote communication facility. The remote communication protocol of the numerical relays shall be an open protocol like **most advance** IEC61850.

9.9. The relays shall have the following tools for fault diagnostics.

a) Fault record – The relay shall have the facility to store at least **5 last fault records** with information on cause of trip, date, time, trip values of electrical parameters.

b) Event record – The relay shall have the facility to store at least 75 to 200 time stamped event records with 1 ms resolution.

c) Disturbance record – The relay shall have capacity of disturbance record.

d) The relay settings shall be provided with adequate password protection. The password of the relay should be of a minimum 4 characters upper case text to provide security to setting parameter.

- e) It shall be possible to change the relay setting from the front panel using the keypads.
- f) The relay shall have comprehensive self-diagnostic feature. This feature shall continuously monitor the healthiness of all the hardware and software elements of the relay. Any failure detected shall be Annunciation through a output watchdog contact. The fault diagnosis information shall be displayed on the LCD and also through the communication port.
- g) The numerical Relays shall be provided with common support software compatible with Windows, which will allow easy settings of relays in addition to uploading of event, fault, disturbance records, and measurements.
- h) The relay setting shall also be changed from local or remote using the same software.
- i) Additional functions can be added to relay by software up gradation and downloading this upgraded software to the relays by simple communication through P.C.

10. TEST REQUIREMENTS:- General requirements:

The Bidder shall supply test results and/or in service operating evidence to confirm compliance with the general and performance requirements as detailed in this Specification.

a) Test results:-

The Bidder shall submit details of all tests results to OPTCL for approval prior to the inspection of the equipments.

b) Testing, inspection and test certificates:-

The Bidder shall enclose with his bid the reports of type and routine tests conducted on similar equipment earlier as a proof of designing and developing similar equipment. Bid documents, furnished without these test reports shall be considered as incomplete and shall be liable for rejection.

All equipment furnished shall conform to the type tests and shall be subject to routine tests in accordance with the requirements stipulated for Protection IEC 61850 protocol Relays.

OPTCL will have the right to call for any other tests of reasonable nature to be carried out at the Bidder's premises or at site or in any other place, in addition to the aforesaid type and routine tests, to satisfy that the materials comply with the Specification.

The Bidder shall give one months notice of routine tests and inspection to be carried out on the finished equipment. A programme for conducting the tests shall be furnished and the Bidder shall proceed to test the equipment after approval of OPTCL. The tests shall be witnessed by OPTCL. All inspections, type tests if required and routine tests shall be carried out after approval of all the relevant drawings required under the contract. None of the equipment to be furnished or used in connection with this contract shall be despatched until factory tests are satisfactorily completed. Such factory tests on the equipment shall not however relieve the Bidder from full responsibility for furnishing equipment conforming to the requirements of this contract, nor prejudice any claim right or privilege which the Employer may have because of the use of defective or unsatisfactory equipment. Should the OPTCL waive the rights to inspect and test any equipment, such a waiver shall not relieve the Contractor, in any way, of his obligations under this contract.

Two (2) copies of test reports of successful tests shall be submitted by the Bidder to the OPTCL for approval before shipment of equipment.

For equipment tests for which IEC recommendations or Indian Standards are available, test reports confirming that the equipment has passed the specified type and routine tests shall be furnished for the approval of the OPTCL by the Bidder before shipment of the equipment.

For equipment/tests for which IEC/IS specifications do not exist, the Bidder shall propose a test procedure for the approval of the OPTCL before conducting tests. Test certificates for tests carried out shall be submitted for approval of the OPTCL before shipment of the equipment.

Failure of any equipment to meet the requirements of tests carried out at works or at site shall be sufficient cause for rejection of the equipment. Rejection of any equipment will not be held as a valid reason for delay in the completion of the works in accordance with the agreed programme.

The Employer reserves the right to call for field tests on the completely assembled equipment at site.

Two (2) copies of all test reports shall be supplied for approval before shipment of equipment. The reports shall indicate clearly the standard values specified for each test, to facilitate checking of the test reports.

c) Soak test:

All solid state equipment/system shall be subject to the Hot Soak Test as a routine test in accordance with the procedure detailed in the following paragraph. All solid state equipment shall be burn-in tested for minimum of 120 hours continuously under operational conditions. During the last 48 hours of testing, the ambient temperature of the test chamber shall be 50C. The temperature of the interior shall not exceed 65C.

d) Type tests:

1. Impulse voltage withstand test as per Clause 6.1 of IS 8686 (for a test voltage appropriate to Class III as per Clause 3.2 of IS-8686)

2. High Frequency Disturbance test as per Clause 5.2 of IS 8686 (for a test voltage appropriate to Class III as per Clause 3.2 of IS 8686). Type tests listed under IEC-Technical Committees recommendation 'TEC-57' and functional type tests listed under **CIGRE Study Committee 34** (Protection) Report on simulator, Network analyser or PTL as applicable.

e) Routine tests: Contact insulation resistance test as per Clause 10.5 of IS-3231. Insulation withstand capability as per Clause 10.5 of IS-3231 on all AC/DC relays.

(II) BACK-UP OVER CURRENT AND EARTH FAULT PROTECTION SCHEME WITH HIGH SET FEATURE:-

Specification for Numerical Directional/Non-Directional Over Current and Earth Fault Protection.

A. General

A comprehensive communicable numerical protection should be offered by the relay. High level of security should be built-in the relay to avoid any mal operation causing over protection of the system or any non operation of the relay causing under protection. Should have flexibility to customize the relay for intended applications as may be desired at site, in other words the relay should not have very limited features rendering it equipment specific. The relay should have high immunity to electrical and electromagnetic interference and also continuous supervision of hardware and software should be done to ensure enhanced system reliability and availability, the relay should have auto diagnostic fault indication to facilitate fault location and repair after detection of internal relay fault. The compulsory features required by the relay to be fulfilled are listed as below

B. Application

The relay will be required for applications where time graded Directional/Non-Directional o/c and e/f protection is required. The Directional/Non-Directional earth fault protection should provide suitable sensitivity for most systems where the earth fault current is limited. Typically the relay should be applied for all incoming

transformers, capacitors and plant feeders for any application. The relay should be designed in such a way that it operates for a wide range of ac and dc auxiliary power supplies.

C. General requirements

The relay in addition to protection and control should display and store all parameters necessary for post fault analysis. The relay shall record all the events affecting and effecting the relay performance. All the time stamped data should be available via a RS232 serial communication port for access locally and/or remotely via a computer. All the events, faults and disturbance records shall be extracted via a RS485 serial port.

D. Operating Principle

The sampling frequency of the digital/analogue converter should be synchronised to power frequency by suitable frequency tracking methods to improve both accuracy of measurement and harmonic rejection. The relay should necessarily have a software filtering to prevent induced ac signals in the external wiring causing operation of logic inputs.

E. Functional Description

(a) Directional O/C protection:

The relay should have 4 independent time delayed stages which can be selectable either as directional or non-directional. MTA shall be adjustable anywhere within -180 degrees to + 179 degrees.. The first and second stages shall be programmable to have either a DT characteristics or IDMT characteristics(as per IEEE/IEC Standards) described as follows.

1. The low set phase current should start when the current of any phase exceeds the set value.

The first and the second current stage shall have a current setting range of 0.10 - 4.00 I_n and time setting range of 0.06 sec to 100 sec.

2. The Third, fourth stage of protection shall be with instantaneous operation or DT having a current setting range as 0.1 to 20 I_n and a time delay of 0.06 sec to 100 sec for stage **III** and **IV**. These stages may have the flexibility to be configured for a bus bar protection scheme using blocking logic at a later date. Facility available in the relays for this flexibility may be highlighted.

(b) Directional Earth fault protection:

The relay should have at least 2 independent time delayed Directional/Non –Directional E/F stages suitable for networks with different earthing types(solidly earthed, resistive earthed, Petersen coil earthed systems).The relay shall also be suitable where ever a selective and sensitive earth fault protection is needed. It shall also be possible to detect Intermittent earth faults. MTA shall be adjustable anywhere within -180 degrees to + 179 degrees. The first and second stage shall be programmable to have either a DT characteristics or IDMT characteristics described as follows, The low set phase current should start when the current of any phase exceeds the set value. Both the stages Shall have a current setting range of 0.05 to 4 I_n and time setting range of 0.1 sec to 200 sec. The lower setting is critical to take care of systems which have low earth fault currents. Additionally there shall be four non-directional earth fault stages where the first stage can be programmed either to IDMT or DT and the rest 3 stages shall be of definite time type.

(c) Sensitive Earth Fault/Restricted Earth Fault.

The relay shall take care of transformers applications where Restricted Earth fault and standby earth fault is required. It shall be possible to either measure the value of neutral current through available C.T I/P's or derive it internally within the relay and use the same for applications as described above. The Relay shall be able to accept input from Core balance current transformer to detect earth faults of very low amplitude. The setting range shall be settable to a minimum of 0.005 Amps. The relay shall have Restricted earth fault protection feature of high Impedance type.

(d) Over Voltage /Under Voltage.

If the system goes for very high under and over voltages in case of Supply or Load unbalance it shall be possible to grade the system for Voltage protections. Relay shall have 3 under voltage stages and 3 over voltage stages respectively.

(e) Residual voltage protection:

The relay shall have at least 2 residual voltage stages in order to give an unselected backup for existing earth fault protection. The stages shall have a setting range of 1 – 60 %U_{0N} with a time delay settable from 0.3 – 100.0s (in steps of 0.1 s).

(f) Under frequency/Over Frequency /ROCOF:

The relay shall have four frequency stages out of which it shall be possible to program at least 2 of them to under or over frequency to be suitable for various load sharing applications. The under frequency stages shall be settable any where within a frequency range of 45 - 55.0 Hz. With the flexibility to block any mal operation on event on under voltage. All stages shall be of definite time type with a setting range of 0.10) – 100.0 s (in steps of 0.02 s). The relay shall also have the facility to detect a rate of change of frequency for load shedding applications , to speed up operation time in over- and under-frequency situations and to detect loss of grid. Pick up setting shall be settable from 0.2 – 10.0 Hz/s (step 0.1 Hz/s).

(g) The relay in addition to the above basic function should also provide the following functions,

1. The relay should have the protection feature which allows the relay to trip the upstream circuit breaker when a local breaker failure condition is detected and should be energised both from operation of the relay or by an external trip.

2.The relay should measure the following standard quantities,

- Phase current(Positive, negative and zero sequence currents)
- Phase Voltage(Positive, negative and zero sequence voltages)
- Neutral current
- Frequency
- Active and Reactive Power
- Power factor

3. The relay shall have at least two independent setting groups . The relay shall automatically switch from one setting group to another depending on system conditions (such as failure of incomer supply, which causes fault level to decrease etc.,)

4. The relay shall have the facility of communication on industry standard open protocols such as Modbus or IEC 60870-5-103 which shall be selectable through software. There shall have a facility to have IEC61850 protocol inbuilt without use of any external converter. Further, the test levels of EMI as indicated in IEC 61850 shall be

applicable to these. The relays shall support copper and fiber optic medium which shall be selectable at site for SAS connectivity. The relay shall support peer to peer communication.

- The relays shall generate GOOSE messages of class 1 as per IEC 61850 standards for interlocking/tripping and also to ensure interoperability with third party relays.
- Necessary user friendly configuration tool shall be provided to configure the relays. It should be compatible with SCL/SCD files generated by a third party system.
- Goose signals shall be freely configurable for any kind of signals using graphic tool/user friendly software.

Bidder shall also ensure adequate hardware.

5. The Relay shall have facility for Time synchronization on IRIG B/SNTP/RS 485 and through digital input.

F. Relay hardware:

The relay should be modular type, suitable for either rack or panel mounting. Standard terminal blocks should be located at the rear of the relay providing connections for all input and output circuits.

G. Output relays:

The relay should have up to 5-CT inputs. They should provide at least 6 optically isolated inputs and at least 7 programmable outputs. They should be arranged in response to any or all of the available functions by suitably setting the output relays. The protection and control function to which these relays respond should be selectable via the menu system of the relay. **One output relay shall be permanently assigned for self-supervision.**

H. The Relay shall also have the following functionality/Features..

- Thermal overload protection.
- Negative sequence over current.
- Permanent Self-Test.
- Circuit breaker maintenance information.
- Broken conductor detection by measuring I_2/I_1 .
- Cold load pickup function to change the settings when the protected object is connected to a network i.e., at starting allowing the set value being lower than the connected inrush current.
- The relay shall also have the feature of Inrush blocking through 2nd harmonic detection.
- Disturbance recorder & Event recorder facilities.8 fault records shall be possible in each protection stage.
- Front RS232 port for communication to LAPTOP (at a later date).
- The relay shall have a facility for C.T. Supervision, P.T. Supervision and Trip Circuit Supervision.
- Relay shall support customer-defined programmable logic for Boolean signals. It shall be possible to form equations using AND,OR,NOT gates.

APPENDIX-I

GTP for DIRECTIONAL OVER CURRENT & E/F RELAY:

DIRECTIONAL OVER CURRENT & E/F RELAY		
1	Maker's name	
2	I) Type/model	
	II) Whether numerical in principle	Yes,
3	<u>Polarization</u> (II) Current Coil (III) Potential Coil	0.6 Volts for Phase to phase & phase to earth faults & memory polarization of three phase faults
4	Current coil rating i) Continuous ii) For 3 sec a) For 1 sec	4.0 In continuous 30In for 10s 100In for 1s
5	potential coil rating	2Vn continuous 2.6Vn for 10s
6	Tap range	0.1 to 32/40 In, steps 0.01 In

7	VA burden	Phase:< 0.05VA at In earth:<0.1VA at In
	a) current coil	
	1) highest tap	
	2) lowest tap	
	b)voltage coil	
8	Time of operation for max. time dial setting at 1. 5 times tap setting 2. 10 times tap setting	4.3 sec, for standard inverse 3 sec, for standard inverse
9	Trip contact rating amps	Make & carry 30A for 3 sec Carry 5A for continuous Break 62.5 Watt (L/R= 50 ms)
10	Whether seal in contacts provided or not(yes/no)	NA
	a) Descriptive leaflet submitted or not	
11	Whether type tested or not	YES
12	Knee point voltage requirement	1A rated current circuits 2.5VA, 10P 20 5A rated current circuits 7.5VA 10P 20
13	Max. torque angle	SELECTABLE
14	Operational characteristics	IDMT(Normal,High,Very Inv etc),High Set

APPENDIX-II

SCHEDULE OF QUANTITY AND DELIVERY (To be filled up by the tenderer)

Description of materials	Quantity required	Desired Delivery	Destination	Remarks.
1	2	3	4	5
NUMERICAL O/C & E/F RELAY (BACK UP).	156 NOS.		EHT Store, Bhubaneswar.	

Place:

Date:

Signature of Tenderer
with seal of Company