



**ODISHA POWER TRANSMISSION CORPORATION LTD
CENTRAL PROCUREMENT CELL,
OPTCL TECH TOWER, JANPATH, SAHEED
NAGAR, BHUBANESWAR – 751007**

**TENDER SPECIFICATION NO.
SR.G.M.-CPC -II-E-TENDER-SURGE ARRESTER – 41/2024-25
FOR
PROCUREMENT OF SURGE ARRESTERS**

(LOT)	ITEM DESCRIPTION	UNIT	Requirement (2024-25)	Requirement (2025-26)	Total Quantity.
I	400KV SA	Nos.	12	12	24
II	220KV SA	Nos.	44	44	88
III	132KV SA	Nos.	186	185	371
IV	33KV SA	Nos.	294	293	587

Request for online tender documents : From Date 04.04.2025(10.00Hr)

To Date 03.05.2025(12.00Hr)

Last date of submission of online tender : Date 03.05.2025(13.00Hr)

Date of opening of Tender : Date 04.05.2025(11.00Hr)



ODISHA POWER TRANSMISSION CORPORATION LTD.
REGD. OFFICE: OPTCL TECH TOWER, JANPATH, SAHEED
NAGAR, BHUBANESWAR, ODISHA – 751007
e-TENDER NOTICE NO. CPC – 41/2024-25

For and on behalf of ODISHA POWER TRANSMISSION CORPORATION LTD, Sr.G.M. [C.P.C.] invites Tenders from reputed manufacturers in two part bidding system for supply of **Surge Arresters**. The interested bidders would be required to enroll themselves on the tender portal www.tenderwizard.com/OPTCL. Complete set of bidding documents are available at www.tenderwizard.com/OPTCL from **04.04.2025 (10.00 Hr) to 03.05.2025 (12.00 Hr)**. Interested manufacturers may visit OPTCL's official web site <http://www.optcl.co.in> and www.tenderwizard.com/OPTCL for detail specification.

N.B: All subsequent addendum / corrigendum to the tender shall be hosted in the OPTCL's official website <http://www.optcl.co.in>, www.tenderwizard.com/OPTCL only.

SENIOR GENERAL MANAGER [C.P.C.]

NOTICE INVITING TENDER
ODISHA POWER TRANSMISSION CORPORATION LTD.
REGD. OFFICE: OPTCL TECH TOWER, JANPATH, SAHEED NAGAR, BHUBANESWAR,
751007
ODISHA, INDIA.

e-TENDER NOTICE NO: CPC- 41/2024-25

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

Tender Specification No.	LOT	Description of equipments/ materials	Qty in Nos:	Earnest Money Deposit (in Rs.)	Cost of Tender Document (In Rs.)	Tender Processing Fee (In Rs.)	Last date of receipt & opening of tender
SR.G.M.-CPC- II -E-TENDER-SURGE ARRESTER – 41/2024-25	I	400KV SURGE ARRESTER	24	45,916.00	RS.7,080/- Including GST@18%	Rs 5,000/ + GST@18% = Rs 5,900/- (Rupees Five Thousand Nine Hundred only)	02.04.2025(13.00Hr & 03.04.2025(11.00)
	II	220KV SURGE ARRESTER	88	74,234.00	₹ 14,160/- Including GST@18%		
	III	132KV SURGE ARRESTER	371	1,27,740.00	₹ 14,160/- Including GST@18%		
	IV	33KV SURGE ARRESTER	587	65,224.00	₹ 14,160/- Including GST@18%		

TENDER COST:

The bidders who want to submit bids shall have to pay non-refundable amount **as mentioned above table** towards the tender cost, online through e-payment gateway link provided in e-tender portal (by using Net Banking, Debit Card or Credit Card). The online payment can be made prior to last date & time of submission of online tender. They have to also submit notarized hard copy of GST registration certificate on or before the scheduled date & time of opening of techno-commercial bid. They have to also submit notarized hard copy of GST registration certificate on or before the date & time of submission of techno-commercial bid.

TENDER PROCESSING FEE:

The bidders shall have to submit non-refundable amount of **Rs.5,900/- (Rupees Five thousand & nine hundred) only including GST @ 18%** towards the tender processing fee to **K.S.E.D.C.Ltd**, in e-payment mode. The e-payment of above amount is to be made to enable the bidder to down load the bid proposal sheets & bid document in electronic mode.

SUBMISSION OF TENDER COST, TENDER PROCESSING FEE & EMD:

The bidder shall deposit the tender cost, tender processing fee & EMD BG prior to last date & time for submission of bid as notified in tender notice. Local micro & small enterprisers (MSEs) **(In the state of Odisha)** based in Odisha and registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate by submitting EMD @ 50(fifty) percent(%) of the amount indicated in the Notice Inviting Tender. They have to submit notarized hard copy of valid registration as local MSE **(In the state of Odisha)** as above on or before the date & time of submission of techno-commercial bid.

The tender cost , processing fees are to be submitted along with the EMD at the office of the undersigned on or before the last date & time of submission of tender.

The bidders shall scan the Demand Draft/Pay order/ Bank guarantee, towards EMD/ notarised hard copy of valid registration as local MSE **(In the state of Odisha)** (if any) and upload the same in the prescribed form in .gif or .jpg format in addition to sending the original as stated above.

The prospective bidders are advised to register their user ID, Password, company ID from website **www.tenderwizard.com/OPTCL** by clicking on hyper link “Register Me”.

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

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

SENIOR GENERAL MANAGER, CPC

ODISHA POWER TRANSMISSION CORPORATION LTD.
OFFICE OF THE SENIOR GENERAL MANAGER
CENTRAL PROCUREMENT CELL
OPTCL TECH TOWER, JANAPATH, SAHEED NAGAR
BHUBANESWAR – 751007

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

**TENDER SPECIFICATION NO SR.G.M.-CPC- II-E-TENDER-SURGE ARRESTER-
41/2024-25**

CONTAINING

PART - I

CONTENT	
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SECTION – II	GENERAL TERMS AND CONDITIONS OF CONTRACT (G.T.C.C.) (COMMERCIAL)
SECTION – III	LIST OF ANNEXURES (COMMERCIAL)
SECTION – IV	TECHNICAL SPECIFICATION
SECTION – V	PRICE BID.

SECTION – I
INSTRUCTIONS TO TENDERERS

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SECTION-I

INSTRUCTIONS TO TENDERER

1. Submission of Bids: -

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

The OPTCL reserves the right to reject any bid, which is not deposited according to the instruction, stipulated above. The participants to the tender should be registered under GST laws.

The OPTCL reserves the right to reject any bid, which is not deposited according to the instruction, stipulated above. The participants to the tender should be registered under GST laws.

- (i) For all the users it is mandatory to procure the Digital Signatures.
- (ii) Contractors / Vendors / Bidders / Suppliers are requested to follow the below steps for Registration:
 - (a) Click “Register”, fill the online registration form.
 - (b) Pay the amount of Rs. 2360/- through DD in Favour of KSEDCL Payable at Bangalore.
 - (c) Send the acknowledgment copy for verification.
 - (d) As soon as the verification is being done the e-tender user id will be enabled.
- (iii) After viewing Tender Notification, if bidder intends to participate in tender, he has to use his e-tendering User Id and Password which has been received after registration and acquisition of DSCs.
- (iv) If any Bidder wants to participate in the tender he will have to follow the instructions given below:

- (a) Insert the PKI (which consist of your Digital Signature Certificate) in your System.
(Note: Make sure that necessary software of PKI be installed in your system).
 - (b) Click / Double Click to open the Microsoft Internet Explorer (This icon will be located on the Desktop of the computer).
 - (c) Go to Start > Programs > Internet Explorer.
 - (d) Type **www.tenderwizard.com/OPTCL** in the address bar, to access the Login Screen.
 - (e) Enter e-tender User Id and Password, click on “Go”.
 - (f) Click on “Click here to login” for selecting the Digital Signature Certificate.
 - (g) Select the Certificate and enter DSC Password.
 - (h) Re-enter the e-Procurement User Id Password
- (v) To make a request for Tender Document Bidders will have to follow below mentioned steps.
- Click “Un Applied” to view / apply for new tenders.
 - Click on Request icon for online request.
- (vi) After making the request Bidders will receive the Tender Documents which can be checked and downloaded by following the below steps:
- Click to view the tender documents which are received by the user.
 - Tender document screen appears.
 - Click “Click here to download” to download the documents.
- (vii) After completing all the formalities Bidders will have to submit the tender and they must take care of following instructions.
- Prior to submission, verify whether all the required documents have been attached and uploaded to the particular tender or not.
 - Note down / take a print of bid control number once it displayed on the screen
- (viii) Tender Opening event can be viewed online.
- (ix) Competitors bid sheets are available in the website for all.
- (x) **For any e-tendering assistant contact help desk number mentioned below.**Bangalore – 080- 40482000.

The participants to the tender should be registered under GST laws.

2. Division of Specification.

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

Part-1 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

- | | |
|------------------------------------|---|
| 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 viz. Part-I (Techno commercial) & Part-II (Price bid).

4. Opening of Bids.

[a] The tender shall be opened on the date and time fixed by the OPTCL for opening of bids in Electronic mode in presence of such of the Tenderers or their authorized representatives [limited to one person only] on the due date of opening of tender who opt remain present. 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.

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. The local Micro and small Enterprises(MSEs) (In the state of Odisha) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate without payment of the cost of tender specification

8. (B) Registration certificate of DPIIT: As per Office Memorandum No.F.No.6/18/2019-PPD, Ministry of Finance, Dept. of Expenditure Public Procurement Division, New Delhi and Office Memorandum No. FIN-CON-MISC-0007/2019/27945/F Dated.16.10.2020 of Finance Department, Govt. of Odisha "Any

bidder from a country which **shares a land border with India** will be eligible to bid in any procurement whether goods, services (Including consultancy services and non-consultancy services) or works (including turnkey projects) **only if the bidder is registered with the Competent Authority, DPIIT** (i.e. Department for Promotion of Industry and Internal Trade)". Pursuant to decision of Govt. of India prescribing imposition of restriction on public procurement from bidders of certain countries on ground of defence of India or matters directly or indirectly related thereto, the Office Memorandum No. 4939/F, dated: 13.02.2012 of Finance Department, Govt of Odisha has been amended vide Office Memorandum No 27945 Dtd 16.10.2020 by inserting sub-para-3 (vii) to para-3 thereof. Prescribing the restriction on procurement made by the State Govt., State Public Sector Undertaking including local bodies etc. and directing no procurement shall be made in violation of such restrictions, it is hereby clarified that the provisions of the same shall be applicable for the tenders for works/procurement/Service in OPTCL in both ongoing (Techno-Commercial bid not opened) and future tenders.

The tender documents of OPTCL shall contain following additional clauses and certificate formats

I) To be incorporated as qualifying requirement of bidder /certificates in case of tenders for Works (including Turn-key works).

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per requirement of Govt. of India.

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any company, including any member of a consortium or joint venture (that is a company),

III. "Bidder from a country which shares a land border with India" for the purpose of this Order means :-

- a. An entity incorporated, established or registered as company in such a country ; or
- b. A subsidiary company of an entity incorporated, established or registered in such a country ' or
- c. An entity substantially controlled through entities incorporated , established or registered in such a country ; or
- d. An entity whose beneficial owner is situated in such a country ; or
- e. An Indian (or other) agent of such an entity ; or
- f. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (iii)(d) above will be as under :

1. In case of a company the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation-

- a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits or the company.
- b. "Control" shall include the right to appoint majority of the directors or to control

the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreement;

2. Where no natural person is identified under (1) above, the beneficial owner is the relevant natural person who hold the position of senior managing official ;

3.

4. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

5. The successful bidder shall not be allowed to sub-contract works to any contractor from a country which shares a land border with India unless such contractor is registered with the Competent Authority.

Certificate (to be furnished in bidder company's letter head)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable evidence of valid registration by the Competent Authority shall be attached.

II) To be incorporated as qualifying requirement of bidder /certificates in case of tenders for procurement of goods/services (including consultancy and non-consultancy)

I. Any bidder from a country which shares a land border with India will be eligible to bid in this tender only if the bidder is registered with the Competent Authority as per requirement of Govt. of India.

II. "Bidder" (including the term 'tenderer', 'consultant' or 'service provider' in certain contexts) means any person or firm or company, including any member of a consortium or joint venture (that is an association of several persons, or firms or companies), every artificial juridical person not falling in any of the descriptions of bidders stated herein before, including any agency branch or office controlled by such person, participating in a procurement process.

III. "Bidder from a country which shares a land border with India" for the purpose of this Order means :-

- a. An entity incorporated, established or registered in such a country ; or
- b. A subsidiary of an entity incorporated, established or registered in such a country ' or
- c. An entity substantially controlled through entities incorporated , established or registered in such a country ; or
- d. An entity whose beneficial owner is situated in such a country ; or
- e. An Indian (or other) agent of such an entity ; or
- f. A natural person who is a citizen of such a country ; or
- g. A consortium or joint venture where any member of the consortium or joint venture falls under any of the above.

IV. The beneficial owner for the purpose of (iii)(d) above will be as under :

1. In case of a company or Limited Liability Partnership, the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, has a controlling ownership interest or who exercises control through other means.

Explanation-

a. "Controlling ownership interest" means ownership of or entitlement to more than twenty-five per cent of shares or capital or profits or the company.

b. "Control" shall include the right to appoint majority of the directors or to control the management or policy decisions including by virtue of their shareholding or management rights or shareholders agreements or voting agreement;

2. In case of a partnership firm, the beneficial owner is the natural person(s) who, whether acting along or together, or through one or more juridical person, has ownership or entitlement to more than fifteen per cent of capital or profits of the partnership ;

3. In case of an unincorporated association or body of individuals, the beneficial owner is the natural person(s), who, whether acting along or together, or through one or more juridical person, his ownership of or entitlement to more than fifteen per cent of the property or capital or profits of such association or body of individuals ;

4. Where no natural person is identified under (1) or (2) or (3) above, the beneficial owner is the relevant natural person who hold the position of senior managing official ;

5. In case of a trust, the identification of beneficial owner(s) shall include identification of the author of the trust, the trustee, the beneficiaries with fifteen per cent or more interest in the trust and any other natural person exercising ultimate effective control over the trust through a chain of control or ownership.

6. An Agent is a person employed to do any act for another, or to represent another in dealings with third person.

Certificate (to be furnished in bidder's letter head)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable, evident of valid registration by the Competent Authority shall be attached.]

This provision shall not be applicable where orders or contract has been concluded or LOA or NOA has been issued on or before the date of this order and

case falling under Annexure-I of the Office Memorandum dtd 16.10.2020 of the Finance Department, Govt of Odisha as indicated supra.

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 electronic mode only. (www.tenderwizard.com/OPTCL)

[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 out rightly.

The local Micro and small Enterprises(MSEs) (In the state of Odisha)registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC can participate by submitting Earnest Money Deposit @ fifty percent of the amount indicated in the Notice Inviting Tender.

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

- (a) **Bank Draft:** -To be drawn in favour of Drawing & Disbursing Officer, OPTCL [H.Qrs.Office], Bhubaneswar-751 022.
- (b) 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 at least 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 up to 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.
- (vii) 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.

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 tenderer may be asked by the purchaser to extend the validity period of the bid under the same terms and condition as per the original tender.

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

15. Tenderers to be fully conversant with the clauses of the Specification: -

Tenderers are expected to be fully conversant with the meaning of all the clauses of the specification before submitting their tenders. In case of doubt regarding the meaning of any clause, the tenderer may seek clarification in writing from the 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:

The Tender shall Contain the following documents.

- [i] Declaration Form. [As per Annexure-I]
- [ii] Earnest Money. [As per **Annexure-VIII**], Tender Cost .
- [iii] Technical specification and Guaranteed Technical Particulars conforming to the Purchaser's Specification along with drawings, literatures and all other required Annexures, duly filled in.
- [iv] Photostat copies of type test certificates of materials/equipment 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/equipment's 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 and GST Compliance Rating. The GST Identification Number (GSTIN) under GST Laws and permanent account number [PAN] of the firm under Income tax Act are required.
- [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.
- [xiii] Deviation schedule.
- [xiv] The bidder should not have any pending litigation or arbitration with OPTCL with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate/notary.
- [xv] Notarized hard copy and soft copy of valid registration as local MSE(In the state of Odisha)(if any).
- [xvi] Reverse Auction Process Compliance Form (Annexure-IB)

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

(a) Part-II of the tender shall consist of the following

(i) Schedule of prices in the prescribed proforma

18. Conditional Offer:

Conditional offer shall not be accepted.

19. General: -

- (i) In the event of discrepancy or arithmetical error in the schedule of price, the decision of the purchaser shall be final and binding on the Tenderer.
- (ii) For evaluation, the price mentioned in words shall be taken if there is any difference in figures and words in the price bid.
- (iii) Notice inviting tender shall form part of this specification.
- (iv) The price bids of the technically and otherwise acceptable bids shall only be evaluated. The EMD of others, if any, shall be returned to the bidders.
- (v) Tenderer can offer any lot or all the lots of the tender, if there are more than one lots. But the tender (bid) must be furnished separately for each lot.
- (vi) It should be distinctly understood that the price 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.
- (vii) The tenderer must submit the EMD amount, cost of tender document (Form Fee) and Tender processing fee in a sealed cover envelope super-scribing the tender specification number, Tender Notice No & Date of tender clearly on the cover envelope. The said envelope is to be submitted in the office of the purchaser on or before the last date and time of submission of Bids.

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

The testing and inspection of the equipment/ materials at manufacturer works are in the scope of work of the Contractor/Supplier.

OPTCL inspecting officer, on receipt of offer for inspection from the contractor/supplier, proceeds to the manufacturer works to witness the Type/Acceptance/Routine test.

Important:

It is hereby informed to all the bidders that the relevant clauses of the contract specification, pertaining to inspection and testing of equipment/materials, are hereby supplemented with following additional terms and conditions.

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

a) Hotel Accommodation:

- I. Single room accommodation in 4 star hotel for the OPTCL inspecting officer of the rank of Assistant General Manager (Grade E-6) and above.
- II. Single room accommodation in 3 star hotel for the OPTCL inspecting officer of the rank below Assistant General Manager (Grade E-6).

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

b) Journey of the inspecting officer:

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

- (ii) For train journey, inspecting officer of the rank Assistant General Manager and above shall be provided with 1st class AC ticket and inspecting officer below the rank of Assistant General Manager shall be provided with 2nd class AC ticket.
- (iii) The Air-ticket / train-ticket booking/cancellation is the responsibility of the contractor / supplier.
- (iv) Moreover, if during the journey there is an unavoidable necessity for intermediate travel by road/ waterway/sea-route, the contractor/supplier shall provide suitable conveyance to the inspecting officer for travel this stretch of journey or bear the cost towards this. Any such possibilities shall be duly intimated to OPTCL at the time of their offer for inspection.

c) Local Conveyance:

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

d) Following points are also to be considered:

- (i) All the above expenses shall be deemed to be included in the bidder's quoted price for that supply item. Bidder shall not be eligible to raise any extra claim in this regard.
- (ii) Contractor/supplier/manufacture may assume that only in 40% of the inspection and testing offer cases, OPTCL inspecting officer, not below the rank of Assistant General Manager will witness the inspection and testing.
- (iii) In case of inspection and testing of some critical equipment/materials like Power transformers, OPTCL may depute more than one inspecting officer.
- (iv) Contractor/supplier/manufacture shall judiciously plan the inspection/testing schedule and place of inspection/testing, so that optimum number of inspection/testing and minimum time shall be required to cover all the equipment/materials of the relevant contract package.
- (v) It shall be the responsibility of the Contractor/Supplier to organize the above tour related matters of OPTCL inspecting officer including the matters related to overseas inspection/testing, if any.

21. Litigation/Arbitration:-

21.0 (a). Detailed information on any litigation or arbitration arising out of contract completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.

21.0 (b). The bidder should not have any pending litigation or arbitration with OPTCL with regard to any project or related activity. The bidder should certify / declare the same in the unequivocal terms by way of an affidavit duly sworn before a magistrate/notary. Bid furnished by the bidder shall not be eligible for consideration if it is not accompanied by the affidavit.

Further the bid / LOA/ LOI shall be liable for outright rejection/ cancellation at any stage if any information contrary to the affidavit / declaration is detected.

SECTION – II.

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

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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 equipment 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 **Chief 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 **"Basic Price (Taxable value for Goods) at the point of destination"** shall mean the price quoted by the bidder for equipment and material at the consignee's store/site. The cost is inclusive of packing, forwarding, freight, insurance and all expenses and taxes & duties at the end of the supplier

excluding **Goods & Service Tax**. The **Goods & Service Tax** shall be shown in a separate column item wise alongside the Basic Price quoted at the applicable rate in the Tax Invoice. The applicable rate of **GST** shall refer to the **HSN** code of the material supplied. The Basic Price and **GST** thereon shall be the “**FOR Destination Price**” as quoted by the bidder.

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 equipment 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 equipment/materials to be supplied under this contract and if part of the said equipment/material is being manufactured in other premises, the supplier shall obtain for the purchaser’s representative permission to inspect, examine and test as if the equipment/material were being manufactured in the contractor’s premises. Such inspection, examination and testing shall not relieve the supplier from his obligations under the contract.

[ii] The Supplier shall give to the purchaser adequate time/notice (**at least clear 15 days for inside the state suppliers and 20 days for outside the state suppliers**) in writing for inspection of materials indicating the place at which the equipment/material is ready for testing and inspection and shall also furnish the shop Routine Test Certificate, Calibration certificates of Testing instruments, calibrated in Govt. approved laboratory with authenticity letter of that laboratory along with the offer for inspection. A packing list along with the offer, indicating the quantity which can be delivered in full truck load/Mini truck load to facilitate issue of dispatch instruction shall also be furnished.

[iii] Where the contract provides for test at the Premises of the supplier or any of his sub-vendors, the supplier shall provide such assistance, labour, materials, electricity, fuel and instruments, as may be required or as may be reasonably demanded by the Purchaser’s representative to carry out such tests efficiently. The supplier is required to produce shop routine test Certificate, calibration certificates of Testing Instruments before offering their materials/equipment for inspection & testing. The test

house/laboratory where tests are to be carried out must be approved by the Govt. A letter pertaining to Govt. approved laboratory must be furnished to the purchaser along with the offer for inspection.

- [iv] After completion of the tests, the Purchaser's representative shall forward the test results to the Purchaser. If the test results conform to the specific standard and specification, the Purchaser shall approve the test results and communicate the same to the supplier in **writing**. The supplier shall provide **at least five copies** of the test certificates to the **Purchaser**.
- [v] The Purchaser has the right to have the tests carried out at his own cost by an independent agency whenever there is dispute regarding the quality of supply.
- [vi] If the firm fails to present the offered items for inspection/testing as per their inspection call due to any reason(s) during the visit of inspecting officer at the testing site, the firm shall have to bear all expenses towards repetition of inspection and testing of the total offered quantity or part thereof.

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 & maintenance in service, wherein it is thought necessary by the purchaser.

6. **Rejection of Materials.**

In the event any of the equipment /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 equipment /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/equipment offered as per technical specification executed during the last two years along with users certificate. User's certificate shall be legible and must indicate, user's name, address, designation, place of use, and satisfactory performance of the equipment/materials for at least two years from the date of commissioning. Wherein at least one **(1) certificate shall be from a State/Central or P.S.U Bids will not be considered if the past manufacturing experience is found to be un-satisfactory or is of less than 2 (two) years on the date of opening of the bid and bids not accompanying user's certificate will be rejected..**

8. **Language and measures:**

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

9. **Deviation from specification:**

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

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

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

The purchaser reserves the right either to reject or to accept any or all tenders if the situation so warrants in the interest of the purchaser. Orders may also be split up between different Tenderers on

individual merits of the Tenderer. The purchaser has exclusive right to alter the quantities of materials/ equipment at the time of placing final purchase order. After placing of the order, the purchaser may defer the delivery of the materials. It may be clearly understood by the Tenderer that the purchaser need not assign any reason for any of the above action [s].

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

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

12. **Patent rights Etc.**

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

13. **Delivery:-**

- [a] Time being the essence of the contract; the equipment shall be supplied within the delivery period, specified in the contract. The Purchaser, however, reserves the right to reschedule the delivery and change the destination if required. The delivery period shall be reckoned from the date of placing the Letter of Intent/Purchase order, as may be specified in LOI/Purchase order.
- [b] The desired delivery period shall be as indicated at Appendix-II (Quantity & Delivery Schedule) of Section-IV (Technical Specification).

14. **Dispatch instructions.**

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

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

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

The Purchaser shall have no responsibility on this account.

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

- [i] The Purchaser may, upon written notice of default to the supplier, terminate the contract in circumstances detailed hereunder.
- [a] If in the judgement 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 judgement 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: - (As per clause 35 of the technical specification.

- [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 whichever is earlier . The Bank Guarantee is to be extended accordingly. Date of delivery as used in this clause shall mean the date on which the materials are received in OPTCL'S stores/site in full & good condition which are released for Despatch by the purchaser after due inspection.

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

- [i] For manufacturers situated inside & out side the state of Odisha.
A Composite Bank Guarantee as per the Proforma enclosed at Annexure-VII of the specification for **10% [ten percent]** of the Total Landing cost (**Taxable Value plus GST thereon**) of the purchase order (In case of successful bidder who is a local Micro and small Enterprise(MSEs) (**In the state of Odisha**) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC **5% (five percent)** shall be furnished from any **nationalized/scheduled** bank having a place of business at **Bhubaneswar**, to the office of **Chief General Manager [Central Procurement Cell]** OPTCL within 01 month from the date of issue of the purchase order. The BG shall be executed on non-judicial stamp paper worth of **Rs.29.00 [Rupees twenty nine]** only or as per the prevalent rules, valid for a period of **2 months** more than the guarantee period, for scrutiny and acceptance, failing which the supply order will be liable for cancellation without any further written notices. The BG should be accompanied by a confirmation letter from the concerned bank and should have provision for encashment at **Bhubaneswar**, before the Bank Guarantee is accepted and all concerned intimated. The B.G should be revalidated as and when intimated to you to cover the entire guarantee period.
- [ii] No interest is payable on any kind of Bank Guarantee.
- [iii] In case of non-fulfillment of contractual obligation, as required in the detailed purchase order/Specification, the composite Bank guarantee shall be forfeited.
- iv] The performance bank guarantee should be submitted by the supplier within 01 month of issue of purchase order. However in case of segregation of delivery of materials in stages, the supplier shall

submit single BG of specified amount as stated above on total award cost with validity of BG covering the entire guarantee period from the scheduled date of delivery of last stage plus 2 months.

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% taxable** value of each consignment with **100% Goods and Services Tax** in full as applicable will be paid on receipt of materials in good condition at stores/desired site and verification thereof, subject to furnishing and approval of a. Contract cum Performance Bank Guarantee at the rate of **10% (Ten percent) of Taxable Value plus GST thereon** [In case successful bidder is a local Micro and small Enterprise (MSEs), based in Odisha & registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC, **5% (five percent) in place of 10% (ten percent)** will be applicable].

b. Guarantee certificate, c. Test certificate by the Purchaser.

ii) TDS under GST Laws and Income Tax Act shall be deducted, if applicable.

iii) Any imposition of new tax or revision of tax shall be paid/reimbursed at the time of dispatch, scheduled or actual whichever is lower (i.e. If delivery is within schedule period, tax variation as applicable shall be paid, and if delivery is made beyond schedule date, any additional financial implication due to statutory variation in tax shall be to bidder's account)

[B] The supplier shall furnish contract cum performance Bank Guarantee of appropriate amount to OPTCL as indicated in (i) above, **within 30 days** from the date of issue of the purchase order.

22 Price Reduction Schedule for Delay in Completion of Supply under Purchase

Order/Contract

(i) If the Supplier fails to deliver the materials/equipment within the delivery schedule, specified in the Purchase Order/Contract including delivery time extension, if any, granted with waiver of Price Reduction Schedule, the Purchaser shall recover from the Supplier, Price Reduction Schedule for a sum of half per cent (**0.5 per cent**) of the Taxable Value of the un-delivered equipment /materials 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 Price Reduction Schedule shall not exceed **five per cent (5%)** of the Taxable Value of the un-delivered equipment/materials. Equipment will be deemed to have been delivered only when all its components, accessories and spares as per technical Specification are also delivered. If certain components, accessories and spares are not delivered in

time, the equipment/materials will be considered delayed until such time as the missing components, accessories and spares are delivered.

(ii) During the guarantee period, if the Supplier fails to rectify/replace the equipment/material within **30 days** from the date of intimation of defect by the purchaser, then the Price Reduction Schedule at the rate of **half percent (0.5%)** of the Total Taxable Value for each calendar week of delay or part thereof shall be recovered by the purchaser. For this purpose, Price Reduction Schedule shall be reckoned from the **30th day** from the date of issue of letter on defectiveness of equipment/material. The total amount of Price Reduction Schedule in this case shall not exceed **10% (TEN PERCENT)** of the Purchase Order/Contract amount except **GST (i.e.Total Taxable Value)**. If the defects, so intimated are not rectified or equipment/materials not replaced by the supplier within the guarantee period, then whole of the **C.P.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. **Rating under Goods and Services Tax and Balance sheet and profit & Loss account:**

The following documents are to be submitted at the time of Tender Submission:

- i. Compliance rating under Goods and Services Tax for immediate preceding financial year.
- ii. Audited Balance Sheet and Profit & Loss Account of the bidder for the previous three years to assess the financial soundness of the bidder(s).
- iii. GST registration certificate and PAN Card Copy.
- iv. Tax holiday/exemption certificate under GST or any other Act.
- v. TDS exemption certificate under the Income Tax Act or any other act.

26. **Certificate of Exemption from Goods and Services Tax.**

Offers with exemption from **Goods and Services Tax** shall be accompanied with authenticated attested Photostat copy of exemption certificate. Any claim towards Goods and Services Tax shall be paid on actual basis subject to payment of **GST** by the supplier. In case Outward supply details of the supplier of Goods in **GSTR-1** do not match with **GSTR -2** of **OPTCL** on **GSTN** portal, the same will be adjusted through debit/credit advice issued by OPTCL under intimation to the supplier after allowing cooling period of **3 months** after the date of supply.

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 price bids will be on the basis of the FOR DESTINATION PRICE including Goods and Services Tax & other levies as may be applicable. The FORD PRICE shall consist of the following components:

a) Taxable value of equipment/materials including mandatory spares, if any for maintenance of equipment. (At discretion of the purchaser)
b) Good and Services Tax

c) Other levies, if any.

d) Test charges, if any.

e) Supervision of erection, testing and commissioning charges, if any.

f) Any other items, as deemed proper for evaluation by the purchaser.

g) Loading will be made for items not quoted by the bidder at the highest rate quoted by other bidders unless particular item is included in other items.

h) Any imposition of new tax or revision of tax shall be considered between due date of submission of bids and the date of price bid opening.

i) Important: Reverse auction (RA) process shall be resorted to and details of the same shall be notified in corrigendum subsequently.

(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/equipment earlier supplied, ability to furnish repairs and maintenance services, the time of delivery, capability to perform including available facilities such as adequate shops, plants, equipment and technical organization.

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

(IV) e-Reverse Auction is hereby incorporated in the referred tender as follows.

STRATEGY FOR E-REVERSE AUCTION	
1	Bidders are required to go through the guide lines given below and submit their acceptance to the same.
2	e-Reverse Auction (RA) will be conducted in e-tender portal of OPTCL on specified date and time, while bidders shall quote from their own offices/places of their choice. Internet connectivity shall be ensured by the respective agencies/bidders themselves.
3	Demonstration/ training (if not trained earlier) of bidder's nominated person(s), shall be done to explain all the rules related to e-Reverse Auction/ Business Rule document to be adopted.
4	The strategy to be used for reverse auction shall be "DYNAMIC TEMPLATE BIDDING"
Procedure for electronic Reverse Auctioning (e-RA):	
5	a). The e-RA shall be conducted on www.tenderwizard/OPTCL.com only. b). Bidder has to submit letter towards agreement to the Process related Terms & Conditions for e-Reverse Auction, as per (Reverse Auction Process Compliance Form at Annexure-IB). In non-receipt of the same, vendors will not be allowed to participate in e-RA. c). e-RA shall be carried out after opening of Price bids and completion of Price bid evaluation, which will be intimated only to the techno-commercially qualified bidders by OPTCL as per procedure given below. d). OPTCL reserves the right to conduct e-RA and it is obligatory on part of bidder(s) invited to participate in e-RA process once they have responded to the techno-commercial bid.
6	Prior intimation/ Notice for RA invitation will be given to techno-commercially qualified bidders regarding the date & time of opening of the e-RA. The start bid price (SBP) for e-Reverse Auction of each bidder under a

	<p>particular package shall be the L1 evaluated price for the subject package including Taxes & Duties for the total scope for subject Package. Taking the above discovered L1 price as the upper limit e-RA will be conducted to determine the lowest possible price.</p> <p>Reverse Auction will be conducted amongst first 50% of the technically qualified bidders arranged in order of prices from lowest to highest, as L1, L2, L3-----Ln, and L1 price will be discovered. Minimum of 3 bidders shall be eligible for e RA. (eg. If 4 bidders are financially evaluated then the L1, L2 and L3 bidders shall be eligible for e-RA). Number of bidders eligible for participating in RA would be rounded off to next higher integer value if number of technically qualified bidders is odd (e.g. if 7 bids are technically qualified, then RA will be conducted amongst L1 to L4).</p> <p>However, in case only two bidders are found to be responsive, e-RA would be carried out with both the parties without any elimination. However, OPTCL reserves the right to invite the evaluated L1 bidder for negotiation without conducting the e-RA.</p> <p>In case of price submitted by any bidder is found to be abnormal, OPTCL reserves the right to reject the bid of the bidder(s) .</p> <p>Rank of bidders would be displayed as per the total cost to OPTCL, i.e including Taxes and Duties payable by OPTCL as per the provisions of the bidding document & after e-RA process is over.</p>
7	<p>Names of bidders/ vendors shall not be disclosed during the e-RA process. Names of bidders/ vendors shall be anonymously masked in the e-RA process.</p> <p>(i) In case of RA, start/ reference price and step value of decrement shall be indicated to the bidders at the start of the auction. Any participating bidder can bid one or multiple step decrement lower than the prevailing lowest bid at that time. The Bidder shall be able to view Bid Start Price, Bid Decrement Value, Prevailing Lowest Bid value, last Bid Placed by him and time left for bidding.</p> <p>(ii) The step value of decrement in a package to be offered by bidder (the minimum amount of reduction in the total bid price including all taxes & duties during auction) , shall be kept at 0.15% of L1 bidder's final evaluated price (or) at approved amount as decided by OPTCL.</p> <p>(iii) Bidders can only quote any value lower than their previous quoted price. However, at no stage, increase in Price will be permissible.</p> <p>(iv) At any point during Reverse Auction, bidding Price field shall remain enabled for the bidders. The reverse auction period shall be unlimited and the initial auction period (1st slot) will be of thirty (30) minutes with provision of auto extension by (10) ten minutes from the schedule/ extended closing time. If any fresh lower bid is received in last ten minutes of initial auction period or extended auction period, the auction shall get extended automatically for another 10 minutes. In case, there is no bid received during schedule/extended slot, the auction shall get closed automatically without further extension.</p> <p>(v) However, bidders are advised not to wait till the last minute or last few</p>

	seconds to enter their bid during the period of e-reverse auction to avoid complication related with internet connectivity, network problem, system crash down, power failure etc.
8	<p>After conclusion of e-Reverse Auction i.e (Closing Price in Reverse Auction will be taken as offered price by the L1 bidder), decrease in price of individual head of the template shall be considered proportionately on all individual line items of the respective head of the price schedule of the successful L1 bidder .</p> <p>Any bid received at the tender wizard server end subsequent to closure of the e-RA shall be summarily rejected and shall not be considered as a valid bid under whatsoever circumstances. For this purpose, tender wizard server log shall prevail.</p> <p>The bidder shall not involve himself or any of his representatives in price manipulation of any kind directly or indirectly by communicating with other bidders.</p> <p>During Reverse Auction, If no bid is received within the specified time, OPTCL, at its discretion, may decide to close the reverse auction process/ proceed with conventional mode of tendering [Evaluation of Part-II (price bid) submitted by bidders earlier].</p>
9	<p>Consequent upon completion of e-Reverse Auction, OPTCL's decision on award of contract shall be final and binding on the bidders.</p> <p>OPTCL shall be at liberty to call the L1 bidder for further process/ negotiation and also at liberty to cancel the e-reverse auction process/ re-tender at any time, without assigning any reason thereof. OPTCL can decide to reschedule or cancel any reverse auction: the bidders shall be informed accordingly.</p> <p>OPTCL/ Service Provider shall not have any liability to bidders for any interruption or delay in access to the e-Tender site/ Reverse Auction link irrespective of the cause.</p>

30. Minimum Qualification Criteria of Bidders. All the prospective bidders are requested to note that their bids for tendered equipment can only be considered for evaluation if:

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

approved laboratory within five years from the date of opening of the tender.

31. Jurisdiction of the High Court of Orissa: 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 Orissa** 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:** Chief General Manager (Procurement)(CPC) OPTCL

Bhubaneswar - 751022 (Orissa), Telephone No. 0674 - 2541801, FAX No.0674 - 2542964

[ii] **Supplier:**

Address: Telephone No: Fax No: e-mail Id:

34. Outright Rejection of Tenders

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

[i] The bidder shall deposit the following prior to last date and time for submission of bid as notified in e-tender notice.

(a) Tender cost.

(b) Tender processing fee

(c) EMD BG

(d) In case of local Micro and small Enterprises(MSEs) (In the state of Odisha) registered with respective DICs, Khadi, Village, Cottage & Handicrafts Industries, OSIC and NSIC participating in the tender they have to submit notarized hard copy of valid registration as local MSE (In the state of Odisha) as above on or before the date and time of submission of technical bid.

[ii] Tenderer should quote FIRM Price and the offer should be kept valid for a period of 180 days from the date of opening of Tender.

[iii] Tender shall be submitted in two parts in tender wizard portal / OPTCL as specified in Instruction to bidder (ITB). The firm should submit all the annexures accompanying techno commercial bid duly filled in.

[iv] The schedule of prices (Un Priced) should be furnished duly filled in.

[v] **Important Notice:** Those manufacturers with whom dispute is there with OPTCL for such equipment, cannot participate in the tender.

[vi] 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.

[vii] The tenderer shall upload the scanned copy of latest type test certificates (for the tests, carried out on the tendered equipment, 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).

[viii] The tenderer shall upload the scanned copy legibly written user's certificate to prove the satisfactory operation of the offered equipment/materials for a minimum period of **3 (three) 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.

(ix) Firm should furnish Guaranteed Technical particulars & Abstract of terms and Conditions should be filled in completely.

(x) (a) Detailed information on any litigation or arbitration arising out of contract completed or under execution by it over the last five years. A consistent history of litigation by or against the bidder may result in rejection of bid.

b) The bidder should not have any pending litigation or arbitration with OPTCL with regard to any project or related activity. The bidder should certify/declare the same in unequivocal terms by way of an affidavit duly sworn before a magistrate/notary. Bid furnished by the bidder shall not be eligible for consideration if it is not accompanied by the affidavit. Further, the bid/LOA/LOI shall liable for outright rejection/cancellation at any stage if any information contrary to the affidavit/declaration is detected.

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

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

36. **Scheme/Projects**

The materials/equipment covered in this specification shall come under **“O&M WORKS “**

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	ANNEXURE-II
3	Schedule of Quantity and Delivery	ANNEXURE-III
4	Abstract of price component	ANNEXURE-IV
5	Schedule of prices	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
12	Schedule of deviations (Technical)	ANNEXURE-XII (A)
13.	Schedule of deviations (Commercial)	ANNEXURE-XII (B)
14	Litigation /Arbitration	ANNEXURE-XIII
15	Affidavit Of Bidder	ANNEXURE-XIV
16	Reverse Auction Process Compliance Form	Annexure-IB
17	Certificate of DPIIT	ANNEXURE-XV

LIST of Documents

The following documents are to be attached in the below name

- 1.PAN
- 2.GSTIN
- 3.Income tax return
- 4.Audited B/s & Profit loss account with UDIN No
5. Certificate of incorporation
6. E payment proof of tender cost

ANNEXURE – I DECLARATION FORM

To

The Chief General Manager (CPC)

OPTCL Head Qtrs. Bhubaneswar - 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/equipment 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/equipment 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 submitted the bid electronically 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

Yours faithfully,

Signature of the Tenderer
with seal of the company

[This form should be dully filled up by the tenderer and uploaded at the time of submission of tender.]

Annexure-IB
(Reverse Auction Process Compliance Form)

(To be submitted on letter head of the bidding company with sign and stamp and along with Technical bid)

To,
Sr.GM (CPC), OPTCL
Techtower, Sahidnagar, Janpath,
Bhubaneswar-751022, Odisha

Sub: Agreement to the Process related Terms & Conditions for e-Reverse Auction.

Dear Sir,

This letter is to confirm that:

- The undersigned is authorized representative of the company.
- We have studied the Commercial Terms and the Business rules governing the Reverse Auction as mentioned in your tender and confirm our agreement to that.
- We also confirm that we have gone through the auction manual and have understood the functionality of the same thoroughly.

- We, hereby, confirm that we will honour the Bids placed by us during the tendering/ e-Reverse auction process as called as e-RA.
- We also confirm that we will accept our Rank / Position that will be displayed when the Bidding Time for the Online Reverse Auction is over.

With regards,

Signature with Designation with company seal Name & Address

Person having power of attorney for the subject package.

ANNEXURE-II

ABSTRACT OF GENERAL TERMS AND CONDITIONS OF CONTRACT [COMMERCIAL]

(To be filled up by the tenderer as indicated in the excel sheet)

1	Whether the material/equipment offered conforms to the OPTCL'S specification (If not, specify the deviations in Annexure).	Yes/No
2.a.i	Cost of Tender Document:	Submitted/Not submitted
2.a.ii	OPTCL Money Receipt No. & Date / D.D No & Date.	
2.b.i	Earnest money furnished.	Submitted/Not submitted
2.b.ii	Bank Guarantee No. & Date / D.D No. & Date.	
2.c.i	Tender Processing Fee:	Submitted/Not submitted
2.c.ii	D.D No. & Date.	
3	Manufacturer's supply experience including user's certificate uploaded or not. [As per clause No.7 of Section-II.]	Yes/No
4.a.i	Commercial Deviations to the specification if any	Yes/No
4.a.ii	If Yes, [list uploaded or not, As per clause-9 of the Section-II	Yes/No
4.b.i	Technical Deviations to the specification if any	Yes/No

4.b.ii	If Yes, list uploaded or not, As per clause-9 of the Section-II	Yes/No
5	Delivery <u>(Period in months from the date of issue of PO)</u>	
6	Guarantee: - Whether agreeable to OPTCL's terms [As per clause-18 of Section-II].	Yes/No
7	Whether agreeable to furnish Composite B.G. in case his tender be successful [As per clause-19 of Section-II]	Yes/No
8	Terms of payment:- Whether agreeable to OPTCL's terms or not [As per clause-21 of Section-II]	Yes/No
9	Nature of price:- FIRM	Yes/No
10	Price Reduction: - Whether agreeable to OPTCL's terms or not (As per clause- 22 of Section-II)	Yes/No
11	Whether STCC/ P&L A/C, Balance Sheet for the required period are uploaded as per clause-25 of Section-II	Yes/No
12	Validity: - Whether agreeable to OPTCL's terms or not[As per clause-28 of Section-II]	Yes/No
13	Whether recent type test certificates from any Government approved laboratory is uploaded or not. [As per clause-30[viii] of section-II]	Yes/No
14	Whether guaranteed technical particulars are uploaded or not	Yes/No
15	Whether dimensional design/drawings uploaded or not	Yes/No
16	Whether materials are ISI/ISO marked.	Yes/No
17	Manufacturer's name and its trademark	
18	Whether registered under GST Laws.	Yes/No
19	Whether declaration form, duly filled in, uploaded or not	Yes/No

ANNEXURE-III

SCHEDULE OF QUANTITY AND DELIVERY

(To be filled up by the tenderer)

SL	Description of materials	Quantity	Desired	Destination	Remarks.
----	--------------------------	----------	---------	-------------	----------

No		required	Delivery		
1	2	3	4	5	6

Signature of Tenderer

With seal of Company

ANNEXURE-IV

(To be filled up by the tenderer as indicated in the excel sheet)

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.

To be filled up by the tenderer as indicated in the excel sheet of techno-commercial bid)

Sl.No.	Description	To be filled by the bidder.
1	Price basis	F.O.R. Purchaser's destination Stores/site.(Taxable value including packing forwarding, Freight, Insurance, unloading)
2	HSN Code of the Item	
3	GST Identification Number (GSTIN) of the firm	
4	Whether Intra-state supply(i.e. from inside Odisha) or Inter-state supply(i.e from outside Odisha). select from dropdown list	
5	Rate of CGST	
6	Rate of OGST.	
7	Rate of IGST.	
8	Rate of Goods and Services Tax on supervision of erection testing and commissioning	
9	Nature of price.	
10	We hereby undertake and declare that implication of lower Tax and Input Tax Credit benefit as per anti-profiteering (under Section 171 of CGST Act) and other provisions under GST Laws have been fully passed on to the purchaser while quoting the price.	Agreed
11	Any imposition of new tax or revision of tax shall be paid/reimbursed at the time of dispatch, scheduled or actual whichever is lower (i.e. If delivery is within schedule period, tax variation as applicable shall be paid, and if delivery is made beyond schedule date, any additional financial implication due to statutory variation in tax shall be to bidder's account). (Indicated- Yes/No)	

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.

(To be filled up by the tenderer as indicated in the excel sheet)

NB:

1. The tenderer should fill up the price schedule properly in Excel file in e-tender mode. The tender will be

rejected, if the price bid is not submitted in accordance with the price schedule. No post tender correspondence will be entertained on break-up of prices. Also, the supplier should agree for delivery at the desired site.

2. The Tenderer shall give an undertaking in part-I of the bid that, entire implication of lower Tax and Input Tax Credit benefit have been fully passed on to the purchaser as per anti-profiteering and other provisions under GST Laws while quoting the tender price.

3. Conditional offers will not be acceptable.

ANNEXURE-VI

[PROFORMA FOR BANK GUARANTEE

FORM FOR EARNEST MONEY DEPOSIT]

(To be Stamped in accordance with Stamp Act and the Non-Judicial Stamp Paper of appropriate value should be in the name of Issuing Bank)

Ref No:

Bank Guarantee No.

Date:.....

BG Amount:.....

Validity Period:.....

This Guarantee Bond is executed this..... day of by us the..... Bank at , P.O..... , Dist....., State..... and Code No.....

Whereas the ODISHA POWER TRANSMISSION CORPORATION Limited, Janpath, Bhubaneswar, a company constituted under the Companies Act-1956 (hereinafter

called OPTCL) has invited Tender vide e-NIT No..... Dated..... for the purpose of work under Package(s) No...../ purchase of ----- .

1. Now, therefore, in accordance with Notice Inviting Tender (e-NIT) No..... Dated of OPTCL, Ms/Shri.....Address..... Wish / wishes to participate in the said tender and as a Bank Guarantee for the sum of Rs..... [Rupees in **words**-----] valid for a period ofdays is required to be submitted by the bidder, as per Tender Specification, we the _____) [indicate the name, Address & Code of the bank] [hereinafter referred to as “Bank”] at the request of Ms/Shri..... [hereinafter referred to as “Bidder”] do hereby unequivocally and unconditionally guarantee and undertake to pay during the above said period on written request by the <Tender Issuing Authority, Central Procurement Cell (CPC) ODISHA POWER TRANSMISSION CORPORATION Ltd. , Bhubaneswar an amount not exceeding Rs..... to OPTCL., without any reservation. The guarantee would remain valid up to [Date] and if any further extension to this is required, the same will be extended on receiving instruction from ----- ----- on whose behalf this Bank Guarantee has been issued.
2. We, the _____ [indicate the name of the Bank, Address, Code] do hereby further undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from OPTCL. 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 in words.....)
3. We undertake to pay to OPTCL any money so demanded notwithstanding any dispute or disputes so raised by the bidder 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 thereunder and the bidder shall have no claim against us for making such payment.
4. We, the _____ Bank further agree that the guarantee herein contained shall remain in full force and effect during the aforesaid period of _____ days [in words]..... (as per Tender Specification) and it shall continue to be so enforceable till all the dues of OPTCL under or by virtue of the said Bid have been fully paid and its claims satisfied or discharged or till OPTCL certifies that the terms and conditions of the said Bid have been fully and properly carried out by the said bidder and accordingly discharges this guarantee. Unless a demand or claim under this guarantee is made on us or our Branch Office at Bhubaneswar <Mention Name, Address & Code of the Branch Office at Bhubaneswar of Issuing Bank> in writing on or before _____ we shall be discharged from all liability under this guarantee thereafter.
5. We the _____ Bank further agree with OPTCL that 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 Bidder from time to time or to postpone for any time or from time to time any of the powers exercisable by OPTCL against the said Bidder 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 granted to the Bidder or for any forbearance, act or omission on the part of OPTCL or any indulgence by OPTCL to the said Bidder or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the 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/or of the Bidder.

7 We _____ [indicate the name of Bank, Address & Code] lastly undertake not to revoke this guarantee during its currency except with the previous consent of OPTCL in writing .

8. We, the _____ Bank (Name, Address & Code) further agree that this guarantee shall also be invokable at our place of business at ----- Branch of **Bhubaneswar** (indicate Name, Address & Code of the Branch at Bhubaneswar) in the State of Odisha.”

“ Notwithstanding anything contained herein”

a) Our liability under the bank guarantee shall not exceed Rs.------(Rupees in words-----) only.

b) This Bank guarantee shall be valid up to -----.

c) We or our Branch at Bhubaneswar <Mention Name, Address & Code.....> shall be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of Bhubaneswar a written claim or demand on or before,

The Bank Guarantee is issued in paper form and Advice transmitted through SFMS with required details to the beneficiary's advising bank (ICICI Bank Bhubaneswar, IFSC Code ICIC0000061).

Dated, the _____ Day of _____

For _____ [Indicate name of Bank]

Signature

Full name

Designation

Power of Attorney No.

Date.....

Seal of the Bank.....

WITNESS: (SIGNATURE WITH NAME AND ADDRESS)

(1)

Signature

Full name

(2)

Signature

Full name

N.B.:

1. Name of the Bidder.:
2. BG No & Date :.....
3. Amount (In Rs.):.....
4. Validity up to :.....
5. E-NIT No.....
6. Package/Works No.....
7. Name, Address & Code of Issuing Bank:.....
8. Name, Address & Code Bhubaneswar Branch of the Issuing Bank:.....
9. The Bank Guarantee shall be accepted after getting SFMS advice as per details below.

Format for SFMS details

(The Unique Identifier for field 7037 is “OPTCL541555793”)

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	EMD
2	Currency & Amount	Mandatory	
3	Validity Period(from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar

			Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code-ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	
14	Purpose of Guarantee	Mandatory	EMD
15	Reference/Description of the underlined tender/contract	Mandatory	NIT No

ANNEXURE-VII

[PROFORMA FOR COMPOSITE BANK GUARANTEE FOR SECURITY DEPOSIT PAYMENT AND PERFORMANCE]

(To be stamped in accordance with Stamp Act and the Non-Judicial stamp paper of appropriate value should be in the name of the Issuing Bank.)

Ref No:-

Bank Guarantee No.

Date:

BG Amount:.....

Validity Period:.....

This Guarantee Bond is executed this..... day of by us the..... Bank at , P.O..... , Dist....., State..... and Code No.....

Whereas the ODISHA POWER TRANSMISSION CORPORATION Limited, Janpath, Bhubaneswar, a company constituted under the Companies Act-1956 (hereinafter called OPTCL) has issued Letter of Award (LOA) No..... Dated..... for the purpose of work under Package No..... (herein after called “the Agreement”) to M/s/Shri , Address..... (herein after called the “Contractor”) for supply, erection, installation & commissioning and associated civil works under the above LoA and whereas OPTCL has agreed (1) to exempt demand of security deposit under the terms and conditions of the LOA (2) to release payment of the cost of the Contract Price to the Contractor on furnishing by the Contractor to OPTCL a Contract Performance Bank Guarantee (CPBG) of the value of 10% of the Contract Price of the said Agreement.

1. Now therefore, in accordance with the terms and conditions of LOA No. _____ dated _____ for the due fulfillment by the said Contractor of the terms and conditions contained in the said agreement, on production of a Bank Guarantee for Rs. _____ (Rupees _____) only, we the bank _____ [Indicate bank Name , Address & Code] (hereinafter referred to as “the Bank”) at the request of M/s/Shri _____ contractor do hereby undertake to pay to OPTCL, an amount not exceeding Rs. _____ (Rupees _____) only .
2. We, the _____ Bank [indicate the name of the Bank, Address & Code] do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from OPTCL. 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----- In Words).
3. We, the Bank also undertake to pay to OPTCL any money so demanded not withstanding any dispute or disputes raised by the Contractor in any suit or proceeding instituted / pending before any court or tribunal relating thereto, our liability under this present being absolute and irrevocable. The payment so made by us under this bond shall be a valid discharge of our liability for payment thereunder and the Contractor shall have no claim against us for making such payment.

4. We, the _____ Bank further agree that the guarantee herein contained shall remain in full force and effect during the aforesaid period of _____ days and it shall continue to be so enforceable till all the dues of OPTCL under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till OPTCL certifies that the terms and conditions of the said Agreement have been fully and properly carried out by the said contractor and accordingly discharges this guarantee.

Unless a demand or claim under this guarantee is made on us or our Branch Office at Bhubaneswar <Mention Name, Address & Code of the Branch Office at Bhubaneswar of issuing Bank> in writing on or before (Date), we shall be discharged from all liability under this guarantee thereafter.

5. We, the _____ Bank [indicate the name of the Bank, Address & Code] further agree with the Board that 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 or performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the powers exercisable by OPTCL against the said contractor(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 contractor(s) or for any forbearance, act or omission on the part of OPTCL or any indulgence by OPTCL to the said contractor(s) or by any such matter or thing whatsoever which under the law relating to sureties would, but for this provision, have the effect of so relieving us.

6. This guarantee will not be discharged due to the change in the name, style or constitution of the Bank and/or of the contractor(s).

7. We, the _____ Bank [indicate the name of the bank, Address & Code] lastly undertake not to revoke this guarantee during its currency except with the previous consent of OPTCL in writing.

8. We, the _____ Bank (Name, Address & Code) further agree that this guarantee shall also be invocable at our place of business at **Bhubaneswar** (indicate Name, Address & Code of the Branch at Bhubaneswar) in the State of Odisha.

“ Notwithstanding anything contained herein”

a) Our liability under the bank guarantee shall not exceed Rs.------(Rupees in words-----) only.

b) This Bank guarantee shall be valid up to -----.

c) We or our Branch at **Bhubaneswar** <Mention Name, Address & Code.....> shall be liable to pay guaranteed amount or any part thereof under this guarantee only if you serve upon us at----- Branch of Bhubaneswar a written claim or demand on or before,

The Bank Guarantee is issued in paper form and Advice transmitted through SFMS with required details to the beneficiary's advising bank (**ICICI Bank Bhubaneswar**, IFSC Code ICIC0000061).

Dated, the _____ Day of _____
For _____ [Indicate name of Bank]

Signature.....

Full Name.....

Designation.....

Power Of Attorney.....

Dated.....

Seal of the Bank.....

WITNESS: (SIGNATURE WITH NAME AND ADDRESS)

1. Signature.....

Full Name.....

2. Signature.....

Full Name.....

N.B.:

1. Name of the Contractor.:
2. BG No & Date :.....
3. Amount (In Rs.):.....
4. Validity up to :.....
5. LOA No.....
6. Package No.....
7. Name, Address & Code of Issuing Bank:.....
8. Name, Address & Code of Bhubaneswar Branch of the Issuing Bank:.....
10. The Bank Guarantee shall be accepted after getting SFMS advice as per details below.

Format for SFMS details
(The Unique Identifier for field 7037 is "OPTCL541555793")

Sl. No	PARTICULARS	TYPE	DETAILS
1	Type of Bank Guarantee	Mandatory	Contract Performance
2	Currency & Amount	Mandatory	
3	Validity Period(from—to --)	Mandatory	
4	Effective Date	Mandatory	
5	End date of lodgment of Claim	Mandatory	
6	Place of lodgment of claim	Mandatory	Bhubaneswar, Branch Name----- of Bhubaneswar Branch code----- of Bhubaneswar Branch Address ----- at Bhubaneswar
7	Issuing Branch IFSC Code	Mandatory	
8	Issuing Branch name & address	Mandatory	
9	Name of applicant and its details	Mandatory	
10	Name of Beneficiary and its details	Mandatory	
11	Beneficiary's Bank/Branch and IFSC Code	Mandatory	ICICI Bank Ltd IFSC Code- ICIC0000061
12	Beneficiary's Bank/Branch name and address	Mandatory	ICICI Bank Ltd Bhubaneswar Main Branch, Bhubaneswar
13	Sender to receiver information	Mandatory	

14	Purpose of Guarantee	Mandatory	Contract Performance
15	Reference/Description of the underlined tender/contract	Mandatory	LOA No----

N.B. : To be Stamped in accordance with Stamp Act and the Non-Judicial Stamp Paper of appropriate value should be in the name of Issuing Bank

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 equipment 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

ANNEXURE-X

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

SL. No	Particulars	Quantity	Unit delivery rate	Total price

Place:

Date:

Signature of Tenderer

Name, Designation, Seal

ANNEXURE-XI
SCHEDULE OF INSTALLATIONS.

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

Place: -

Date

Signature of Tenderer:

Name, Designation, Seal

ANNEXURE-XII

DEVIATION SCHEDULE.

Tenderer shall enter below particulars of his alternative proposal for deviation from the specification, if any.

A) Technical

(To be filled up by the tenderer as indicated in the excel sheet)

B) Commercial deviations.

(To be filled up by the tenderer as indicated in the excel sheet)

Place: -

Date

Signature of Tenderer:

Name, Designation, Seal

ANNEXURE – XIII

LITIGATION HISTORY

Year.	Award for or against bidder	Name of client, cause of litigation and matter in dispute	Disputed amount (current value in Rs.)

Place: -

Date

Signature of Tenderer:

Name, Designation, Seal

ANNEXURE-XIV

AFFIDAVIT OF BIDDER

(To be submitted in a non-judicial stamp paper of appropriate value)

BEFORE Sri/ , Notary, At-.....

.....

Affidavit

WHEREAS the Odisha Power Transmission Corporation Ltd., Bhubaneswar(OPTCL) has floated its Tender No.....inviting bids from eligible bidder to execute the work of.....

AND WHEREAS M/s..... (Briefly "Bidder") has offered its bid onin response to the said Tender No.....of the OPTCL expressing its interest to execute the work as specified therein.

AND WHEREAS the said Tender No..... of OPTCL requires the Bidder to solemnly affirm the correctness of the document and information furnished in its bid, so offered to OPTCL.

NOW THEREFORE, in response to the requirement, the Tender No..... of OPTCL, and having been duly authorized by the Bidder, I Sri/ Mrs. aged about years, Son/Daughter/Wife of Sri/Mrs. , At present working as..... of M/s..... (The Bidder) do hereby solemnly affirm and state as follows:

1. That I am competent and have been duly authorized by the Bidder M/s..... to swear this affidavit on its behalf.
2. That the documents and information furnished by the Bidder in its bid offered in respect to the said Tender No.....of OPTCL are true and correct.
3. That in the event any document and information as furnished by the Bidder in response to the said Tender No of OPTCL is found/ considered by the OPTCL at any time as to be not correct/ wrong, the OPTCL shall be competent and at liberty without any show cause to the Bidder to terminate its contract/ agreement With the Bidder, if any.
4. The OPTCL shall also be competent, without any reference to the Bidder, to black list the Bidder and debar the Bidder from participating in any other Tender of OPTCL pursuant to its consideration/ finding that the Bidder has furnished any incorrect/ wrong document and information tendered/made pursuant to Tender No of OPTCL.

5. That the affirmation made herein above is/are correct and true and nothing Stated herein is false.

Identified by
DEPONENT

ADVOCATE

(Annexure-XV)

Certificate of DPIIT
(to be furnished in bidder company's letter head)

I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India and on sub-contracting to contractors from such countries; I certify that this bidder is not from such a country or, if from such a country, has been registered with the Competent Authority and will not sub-contract any work to a contractor from such countries unless such contractor is registered with the Competent Authority. I hereby certify that this bidder fulfils all requirements in this regard and is eligible to be considered. [Where applicable evidence of valid registration by the Competent Authority shall be attached.]

Authorized signatory

Company seal

SECTION-V

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 Bidders has to certify in the price bid that any implication of lower Tax and Input Tax Credit benefit as per anti-profiteering and other provisions under GST Laws, have been fully passed on to the Purchaser, while quoting the tender prices.

2. INSURANCE:

Insurance of materials/equipment, 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/equipment 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 equipment/materials damaged or lost which will be reported by the Consignee within 30 days of receipt of the equipment/materials at Destination without awaiting for the settlement of their claims with the carriers and underwriters.

3. CERTIFICATE FOR EXEMPTION FROM GOODS AND SERVICES TAX:

Offers with exemption from Goods and Services 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:

The Bidders 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.

END OF TENDER SPECIFICATION



ODISHA POWER TRANSMISSION CORPORATION LIMITED

TECHNICAL SPECIFICATION FOR

400KV/220KV/132KV/33KV PORCELAIN/COMPOSITE HOUSING SURGE ARRESTERS

1. IMPORTANT INSTRUCTION:

1. All the drawings, i.e. dimension, elevation, side view, front view, plan, cross sectional view, isometric view, important component drawing etc., in PDF along with AutoCAD format and manuals (Technical/Installation/Operation) in PDF format, for offered item shall be submitted. The hard copies as per specification also shall be submitted. All above documents should be legible.
2. The acceptability of type test report submitted by any bidder/ EPC agency shall be strictly in adherence to the latest CEA guidelines i.e. "GUIDELINES FOR THE VALIDITY PERIOD OF TYPE TEST(S) CONDUCTED ON MAJOR ELECTRICAL EQUIPMENT IN POWER TRANSMISSION".
3. The Bidder/ EPC agency shall have to submit all the required type test reports for the offered item along with the accessories. In case of submission of soft copy of type test report, high resolution colour scan of the original test report must be submitted. Scanned copy of Xerox of type test reports shall not be entertained. If required, the firm has to show the original type test report for the purpose of verification. In absence of this, the evaluation shall be carried out accordingly as non-submission of type test reports.
4. The Bidder/ EPC agency must fill up all the point of GTP for offered item/s. Instead of indicating "refer drawing, or as per IS/IEC", the exact value/s must be filled in. All the points other than GTP, which are asked to confirm in technical specifications must be submitted separately with the bid.
5. The Bidder/ EPC agency is required to impart training in view of manufacture, assembly, erection, operation and maintenance for offered item, at his works, to the person/s identified by OPTCL, in the event of an order, free of cost. The cost of logistics will be borne as per the clauses of respective purchase orders/work orders.
6. The discrepancies between the specification and the catalogues or literature, submitted as part of the offer or with prevalent standards or government guidelines shall not be considered as valid deviations unless otherwise the same deviations related to TS is brought out separately by the Bidder/ EPC agency in the pre-bid queries or in form of clarification.
7. If any modifications felt necessary to improve performance, efficiency and utility of equipment, the same must be submitted along with pre bid queries which reasons duly supported by documentary evidences and such modifications not mentioned in pre bid queries will not be considered.
8. For purpose of Agreement, the firm shall provide warranty as specified in the purchase order / tender document. Notwithstanding the foregoing, Supplier agrees to waive the expiration of the Warranty Period in the event where in a pattern of defect/trend of failure is observed after the Warranty Period in a significant portion of the supplied quantity, or any critical defect discovered which, in Purchaser's opinion, constitutes a threat of damage to property or to the health and safety of any person.
9. Warranty certificate for purchase of any material, whether directly procured by OPTCL or through EPC agency, shall be issued directly in favour of OPTCL.

2. SCOPE:

- 2.1** This Specification provides for the design, manufacture, inspection and testing before dispatch, packing and delivery F.O.R. (destinations) of metal oxide (gapless) Surge Arresters with discharge counters, insulating base, terminal connectors and other accessories as specified here in.

Following is the list of documents constituting this Specification. :

(i)	Technical Specification (TS)	-
(ii)	Technical Requirements	Appendix-I
(iii)	Quantity and delivery schedule	Appendix-II
(iv)	Guaranteed Technical Particulars	Annexure-A
(v)	Check-List.	Annexure-B
(vi)	Calibration Status of testing equipment and meters/Instruments.	Annexure-C
(vii)	Check-list towards Type Test Reports.	Annexure-D
(viii)	Standard Manufacturing Quality Plan of Surge Arrester	Appendix -III
Note: Annexure-A, B, C & D are to be filled up by the Bidder/EPC.		

- 2.2** All the above along with amendments thereof shall be read and interpreted together. However, in case of a contradiction between the Technical Specification and any other volume, the provisions of this volume will prevail.
- 2.3** The Surge Arrester shall conform in all respects to high standards of engineering, design, workmanship and latest revisions of relevant standards at the time of offer and purchaser shall have the power to reject any work or materials, which in his judgment is not in full accordance therewith.

3. STANDARDS:

Except to the extent modified in the Specification, the Surge Arrester shall conform to the latest editions and amendments of the standards listed hereunder.

	Standard Ref. No.	Title.
1	IEC-60099-4	Metal Oxide Surge Arrester without gaps for A.C system.
2	IEC-60099-5	Surge Arrester selection and application recommendation
3	IS:15086-4	Metal Oxide Surge Arrester without gaps for A.C system.
4	IEC-60529	Degree of protection provided by Enclosures(IP Code)
5	IS:2147	Degree of protection, provided by enclosures for low voltage switchgear and control.
6	IS:2629	Recommended practice for hot dip galvanization of iron and steel.
7	IS:2633	Method for testing uniformity of coating on zinc coated articles.
8	IS:5621 & IEC-62155	Specification for large hollow porcelain for use in electrical installation.
9	IEC-61462	Composite Insulators-Hollow insulator for use in indoor and outdoor installations

10	IEC-62217	Polymeric HV insulators for indoor and outdoor use
10	IEC/TS-60815	Selection and dimensioning of HV insulators intended for use in polluted condition.
11	IEC-60060-1	High-Voltage Test technique.
12	IEC-60270	Partial discharge measurements.
13		Indian Electricity Rules, 1956.

Note:

Surge Arresters with the requirement of other authoritative standards, which ensure equal or better quality than the standards, mentioned above shall also be acceptable. Where the equipment offered by the supplier confirms to other standards, salient points of difference between the standards adopted and the specified standards shall be clearly brought out in the offer. 4 (Four) copies of the reference standards in English language shall be furnished along with the offer.

4. GENERAL AND TECHNICAL REQUIREMENTS:

- 4.1 The Surge Arrester in general means Polymer housing Surge Arrester unless specifically mentioned otherwise and shall confirm to the technical requirements as per Appendix-I and this Technical Specification.
- 4.2 The energy handling capability of each rating of Arrester offered, supported by calculations, shall be furnished with the offer.
- 4.3 The V-I characteristic of designed arrester of each rating on offer shall be furnished along with necessary supporting documents.
- 4.4 The reference current of the arrester shall be high enough to eliminate the influence of grading and stray capacitance on the measured reference voltage. The supplier shall submit values and the supporting evidence along with calculations on above.
- 4.5 Surge Arresters shall be fully stabilized thermally to give desired performance throughout its life expectancy under Site conditions.
- 4.6 Surge Arresters shall be able to withstand the following forces:
 - a. Maximum wind speed of 55 m/sec.
 - b. Forces in event of Short circuit
 - c. Self-weight along with conductor and clamp.
- 4.7 Surge Arresters shall be capable of withstanding effects of direct solar radiation.
- 4.8 A grading ring shall be provided if required, (for attaining all the relevant technical parameters) on each complete Surge Arrester.

4.9 CLIMATIC CONDITION:

The Surge Arrester shall be designed for use in geographical and meteorological conditions as given below:

1	Max. Ambient Air Temperature(°C)	50°C
2	Min. Ambient Air Temperature(°C)	0°C
3	Avg. Daily Ambient Air Temperature(°C)	32°C
4	Avg. Annual Rainfall(cm)	150

5	No. of Rainy Days in an Year	250
6	Max. Relative Humidity (%)	99
7	Max. Wind Speed (m/sec)	55
8	Max. Altitude above Mean Sea level(m)	1000
9	Isoceraunic level(days/year)i.e. Avg. no. of Thunderstorm days	70
10	Seismic level(horizontal Acceleration)	0.3g
11	Pollution Level	Heavy/Very Heavy
12	Air Borne Contamination	Highly polluted
13	Special Environmental Conditions	Presence of Salinity in air in coastal areas and excessive dust deposition in industrial areas

4.10 PROTECTIVE LEVEL:

Surge Arresters shall be capable of providing protection to sub-station equipment, designed for the withstand levels, given in the following table.

Sl. No.	Equipment to be protected	420KV			245KV		145KV	36KV
		PF(KV RMS)	LI(KVP)	SI(KVP)	LI(KVP) /PF(KV RMS)	SI(KVP)	LI(KVP)/ PF(KV RMS)	LI(KVP)/ PF(KV RMS)
1	Auto Transformers/ Power Transformers/ Reactor	630	1425	1050	1050/ 460	850	650/275	170/ 70
2	Instrument Transformers.	630	1425	1050	1050/ 460	-----	650/275	170/ 70
4	Circuit Breakers/Isolators.							
	Phase to Phase	520	1425	1575	1050/ 460	-----	650/275	170/ 70
(i)	Phase to ground.	520	1425	1050	1050/ 460	-----	650/275	170/ 70
	Across Isolating Distance	610	1425 (+240)	900 (+345)	1200/ 530	-----	750/315	195/80
(ii)	Across open switching device	610	1425 (+240)	1050	1050/ 460	-----	650/275	170/ 70
5	Circuit Breaker Duty Cycle	O - 0.3 sec - CO - 3 min - CO						

4.11 DUTY REQUIREMENT:

The offered surge arresters shall have the following capabilities as indicated below:

ARRESTER ATTRIBUTE	420 KV	245 KV	145 KV	36 KV
CLASSIFICATION	SH	SM	SM	SL
NOMINAL DISCHARGE CURRENT	20 kA	10 kA	10 kA	10 kA

SW. IMPULSE DISCHARGE CURRENT	2 kA	1 kA	1 kA	0.5 kA
REPEATED CHARGE TRANSFER RATING(Q_{rs})	≥ 2.4	≥ 1.6	≥ 1.6	≥ 1
ENERGY HANDLING CAPABILITY(W_{th})	≥ 12	≥ 7	≥ 7	≥ 4

- 4.11.1** Surge Arresters shall be capable of discharging over voltages occurring during switching of un-loaded transformers, lines, capacitors and reactors. It shall be capable of discharging lightning and switching surges and temporary power frequency Over-voltages.
- 4.11.2** A 420 KV class Surge Arrester shall be capable of discharging severe re-energisation Switching surges on long 400 KV lines (Typically of 211 km distance with approx. Surge Impedance of 309 Ohms with capacitance of 11.986nF/Km & over voltage factor of 2.3p.u.).

5. DESIGN AND CONSTRUCTION DETAILS:

- 5.1** All the units of arresters of same rating shall be inter-changeable without adversely affecting the performance.
- 5.2** The Surge Arresters shall be suitable for pedestal type mounting.
- 5.3** **The 420 KV Surge Arrester (both Porcelain and Polymer housing) shall be of DESIGN-A type** i.e. Surge Arresters shall be designed to incorporate pressure relief devices and arc diverting paths to prevent shattering of the blocks or the housing, following prolonged current flow or internal flash over and providing path for flow of rated fault currents in the event of arrester failure. **Surge arresters of 245 KV class and below shall be of Design-A/Design-B type.** i.e. **Design-B (only applicable for composite housing) arresters** shall be embedded, all the components free from bubbles and gaps thus preventing partial discharge and moisture ingress. This type of design does not require pressure relief device and must have the ability to cracking and tearing open of housing due to arc action thereby avoiding violent shattering.
- 5.4** All the necessary flanges, bolts, nuts, clamps etc. required for assembly of complete arrester with accessories and mounting on support structure to be supplied by the purchaser, shall be included in supplier's scope of supply.
- 5.5** The drilling details for mounting the Arrester on owner's support shall be supplied by the supplier complying with clause No.5.14.10 of this specification.
- 5.6** The minimum permissible separation between the Surge Arrester and any earthed object shall be indicated by the Bidder/EPC in his offer.
- 5.7** **SEALING ARRANGEMENT:**
- 5.7.1** Sealing (for Design-A Arresters) shall be provided in such a way that these are always effectively maintained even when discharging rated lightning current.
- 5.7.2** The end fittings shall be made of corrosion proof material and preferably be nonmagnetic.

- 5.7.3** The sealing arrangement (For **DESIGN-A** arrester) of the surge arrester stacks shall be done incorporating grooved flanges with O-rings /elliptical cross section gaskets of Neoprene or Butyl rubber or better material.
- 5.7.4** Arresters shall be hermitically sealed and shall not lead to “seal pumping” or “wicking” throughout its service life due to pressure differentials or aging of gaskets/sealing compounds used. The supplier shall furnish sectional view of the arrester showing details of sealing employed.
- 5.7.5** Any compromise in sealing materials, deviation or process lapses in sealing of the surge arrester shall lead to complete rejection of the lot.
- 5.8** **METAL OXIDE BLOCK:**
- 5.8.1** Non-linear blocks shall be sintered metal oxide material. These shall be provided in such a way as to obtain robust construction with excellent electrical and mechanical properties even after repeated operations.
- 5.8.2** The Material used to coat or collar MO blocks shall be strictly non-hygroscopic such as glass material.
- 5.8.3** The Manufacturer shall submit data for rejection rate of ZnO blocks during manufacturing/ operation for the past three years.
- 5.8.4** The following details shall be furnished for quality checks:
- A) The heat treatment cycle details along with necessary quality checks used for individual blocks and insulation layer formed across each block.
 - B) Metallizing coating thickness for reduced resistance between adjacent discs.
- 5.9** The Surge Arresters shall be suitable for hot line washing.
- 5.10** **PORCELAIN HOUSING (where ever applicable):**
- 5.10.1** All porcelain Housings shall be free from lamination cavities or other flaws, affecting the maximum level of mechanical and electrical strengths.
- 5.10.2** The porcelain shall be well vitrified and non-porous.
- 5.10.3** The minimum creepage distance of the arrester housing shall be as per Appendix-I (Sl.No. 21) based on the pollution level of areas of operation.
- 5.10.4** The porcelain petticoat shall be preferably of self-cleaning type (Aerofoil design). The details of the porcelain housing such as height, angle of inclination, shape of petticoats, gap between the petticoats, diameter (ID and OD) etc. shall be indicated by the Bidder/EPC in his offer in the form of detailed drawing.
- 5.10.5** Porcelain housings shall be so coordinated that external flash over will not occur due to application of impulse or switching Surge voltages up to the maximum design value for arrester.
- 5.10.6** Surge Arresters shall incorporate anti-contamination feature to prevent arrester failure, caused by uneven voltage gradient across the stack, resulting from contamination of the arrester porcelain.
- 5.10.7** All portions of the assembled porcelain enclosures and supports other than gaskets, which may in anyway be exposed to the atmosphere shall be composed of completely non-hygroscopic material or glazed porcelain.

5.11 POLYMER HOUSING(where ever applicable) :

- 5.11.1 Polymer housing material shall be made of high quality hydrophobic silicone rubber. Polymer Rubber housing shall be free from lamination cavities, surface tack, roughness or other flaws affecting the maximum level of mechanical and electrical strengths. Properties of the polymeric materials shall be specified in the offer and test reports for the same from a NABL accredited laboratory shall be submitted for approval of the purchaser. The polymer material which is used for arrester housing must be resistant to tracking & erosion, stabilized against UV radiation and shall not exhibit any fatigue to temperature and load.
- 5.11.2 For Design – B, Arresters must have directly moulded housings. Arresters manufactured by slip-on, premoulded housing will not be accepted in view of the weak interface between the housing and the assembled disc.
- 5.11.3 The Surge Arrester in general shall confirm to IEC 61462 and IEC 62217 as applicable. It shall not fail due to housing contamination. Housing shall be so coordinated that external flashover will not occur due to application of any impulse or switching surge voltage up to maximum design value of Surge Arrester.
- 5.11.4 Polymer bounding to the core shall be effectively maintained even when surge arrestor discharges rated surge current.
- 5.11.5 The adhesion between the polymeric housing and the metal oxide resistors or any other metallic or non-metallic parts inside the housing must be strong enough, homogeneous robust and resistant to thermal cycles, and environmental stresses. Tests shall be carry out on each batch during manufacturing and records maintained and provided as & when required during inspection.
- 5.11.6 The rain sheds / petticoats shall be of polymeric material and shall confirm to the properties and type test reports shall be submitted.
- 5.11.7 The Polymer weather shed design shall be preferably of self-cleaning type (Aero foil design. The details of the Polymer housing shed profile such as distance, angle of Inclination, gap between the shed, diameter (ID and OD) etc. shall be as per relevant Standard and shall be indicated by the Bidder/EPC in his offer in the form, during detailed Drawing evaluation.

- 5.11.8 The minimum creepage distance of the Composite housing surge arrester shall be as per Appendix-I (Sl.No. 21) based on the pollution level of areas of operation.

5.12 GALVANISATION, NICKEL PLATING ETC. :

- 5.12.1 All ferrous parts exposed to atmosphere shall be hot dip galvanized as per IS: 2629, as amended from time to time. Tinned copper/brass lugs shall be used for internal wiring of discharge counter. Screws used for electrical connections shall be either made of brass or shall be nickel-plated.
- 5.12.2 Ground terminal pads and nameplate brackets shall be hot dip galvanized.
- 5.12.3 The material shall be galvanized only after completing all shop operations.

5.13 Arresters shall be complete with insulating base having provisions for bolting to flat surface of the structure.

5.14 ACCESSORIES AND FITTINGS:

5.14.1 Surge Monitor consisting of surge counter and leakage current meters should be suitable to be mounted on support structure of the arrester and should be tested for IP 67 degree of protection.

5.14.2 SURGE COUNTERS:

5.14.2.1 A self- contained Surge counter, suitably enclosed for outdoor use and requiring no auxiliary battery supply for operation shall be provided for each unit. The surge counter shall be operated by the discharge current, passed by the surge arrester and shall be suitable for mounting on the support structure of the Arrester.

5.14.2.2 The cyclometer counter shall be visible through an inspection window from ground level. The counter terminals shall be robust and adequate size and shall be so located that the incoming and outgoing connections are made with minimum possible bends.

5.14.2.3 The Surge Counter shall be connected in the main earth lead from the arrester in such a manner that the direction of the earth lead is not changed or its surge impedance materially altered. A bolted link shall be provided so that the surge counter may be short circuited and removed without taking the arrester out of service.

5.14.2.4 All necessary accessories and earthing connection leads between the bottom of the Arrester and discharge counter shall be in the supplier's scope of supply.

5.14.2.5 **For all classes of surge arresters, the surge counter shall be provided with a Potential free contact rated for 220 volt (DC) which shall close whenever a surge is recorded by the surge monitor .Necessary arrangement shall be provided for extending the contact information to Substation Automation System.**

5.14.3 LEAKAGE CURRENT METERS:

5.14.3.1 Leakage current meters (suitable mili-ammeter) shall be connected in the grounding path of the surge arresters to measure the leakage current. Meters shall be designed for continuous service.

5.14.3.2 The ammeter shall be suitable for mounting on the support structure of the arrester.

5.14.3.3 Arresters shall be complete with insulating base having provision for bolting to flat Surface of the structure. The arrangement of surge monitor enclosure fixing to the structure shall be at its rear/bottom.

5.14.3.4 Grading /corona rings shall be provided on each complete Arrester unit, as required, for proper voltage stress distribution.

5.14.3.5 The grounding terminals shall be suitable for accommodating purchaser's grounding connection to steel earth mat.

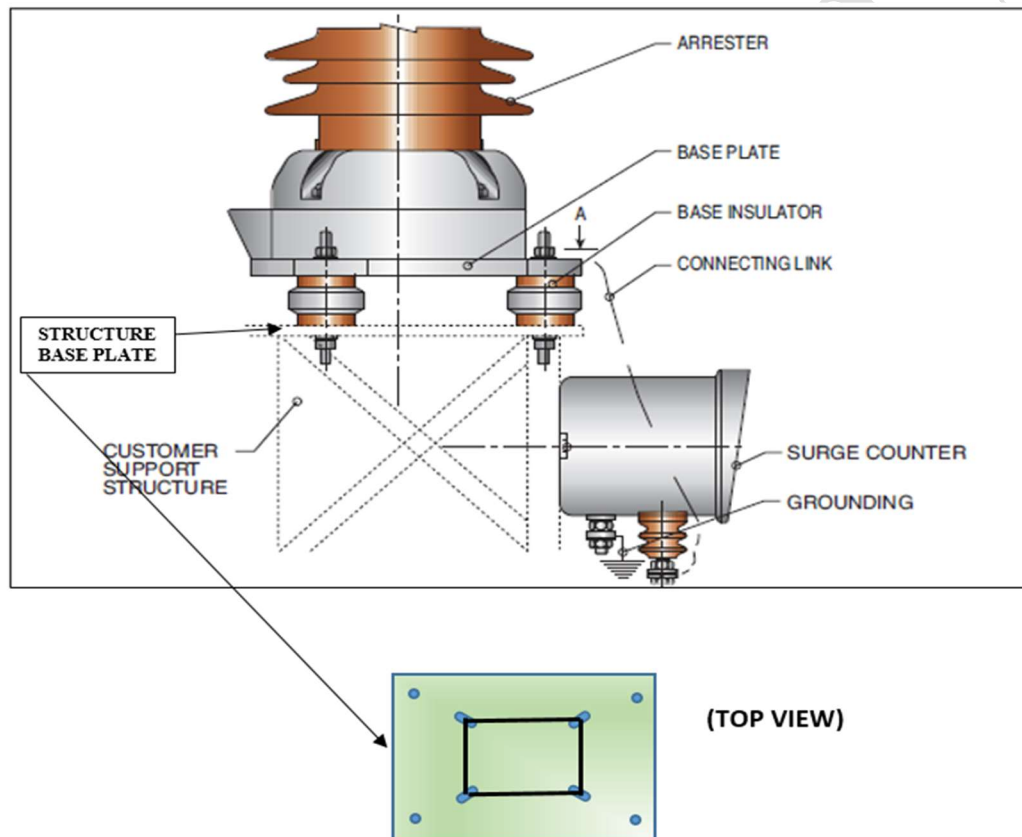
5.14.4 The Bidder/EPC has to quote unit rates of the **insulating** base and the surge monitor

Separately. The purchaser reserves its option to procure **insulating** base and surge counter.

- 5.14.5 In General, Clamp type Aluminium alloy terminal connector, suitable for 400 KV (ACSR MOOSE Conductor) /220 KV (ACSR ZEBRA Conductor) /132KV (ACSR PANTHER Conductor) /33KV (suitable for conductors with overall Dia Ø14 to Ø 18 mm) shall be provided having both horizontal and vertical take-off. However, this may vary depending on site requirement and suitability of terminal connectors shall be decided on case to case basis during approval of drawings.**
- 5.14.6** Two clamp type ground terminal connectors, suitable for G. I. Strip (50 x 6) or (50 x 8) should be provided.
- 5.14.7** All interconnecting hard wares such as nuts, bolts, spring washers etc. shall be GI instead of MS type with 5% spares to be supplied for different units.
- 5.14.8** Other standard accessories, which are specifically not mentioned, but are usually, provided with Surge Arrester of such type and rating for efficient and trouble free operation should be supplied.
- 5.14.9 Connection between the surge arrester base and surge monitor shall be through a 2.0 meter long PVC insulated flexible copper cable of at least 25 Sq mm. The metallic base of the surge arrester shall have the provision to accommodate connecting PVC cable with tinned copper connector/lugs with sufficient surface area for discharging surges to ground (without allowing the surge to pass through the structure) only through the surge counter.**
- 5.14.10 In line with the standardization plan of OPTCL, the fixing dimension of the surge arrester base upon the base plate of the equipment structure is standardized as below:**

VOLTAGE LEVEL	CENTER TO CENTER HOLE DISTANCE OF THE SA BASE PLATE OR ADAPTER CHANNEL(IF USED) IN MM	HOLE DISTANCE OF THE DIAGONAL SLOTTED HOLES OF THE STRUCTURE BASE PLATE	HOLE DIA	NO. OF HOLES
390 KV	380	360-400	Ø18	4
216 KV	280	260-300	Ø16	4
120 KV	280	260-300	Ø16	4
30 KV	180	160-200	Ø14	4

The base plate mounted on top of the surge arrester structure, which is in scope of the purchaser, shall be having 4 slotted holes with distances as mentioned above in the 3rd column of the table for each voltage level. To match with the same, the offered surge arresters must have the uniform base plate fixing dimensions as per the requirement mentioned in 2nd column of the table. If SA base plate dimensions cannot be met, in such a condition, adapter C-Channel (of MS HDG material) may be used to achieve uniform dimensions as mentioned above which ultimately shall be mounted above base insulators and bolted to the base plate of the equipment structure. A typical diagram is shown below for better visualization:



(TYPICAL ARRANGEMNT OF STRUCTURE BASE PLATE WITH SLOTTED HOLES FOR SA MOUNTING)

5.15 NAME PLATE:

Each single pole Arrester shall be provided with non-corrosive legible name plate, at the base bearing the following data, indelibly marked:

- (a) ODISHA POWER TRANSMISSION CORPORATION LIMITED.
- (b) Purchase order No. & Date.
- (c) Other information as detailed in clause No. 4 of IEC 60099 – 4 or in subsequent revisions.

6. TEST

6.1 TYPE TESTS:

The surge Arrester offered should have been subjected to the following type tests in an independent NABL accredited test laboratory.

1. All Type Tests as mentioned in the latest revision of IEC 60099-4/ IS 15086-4.
2. Seismic withstand Test
3. Corona Extinction voltage test(For 420/245 KV arresters)
4. IP-67 test on surge monitor.

6.2 ROUTINE TESTS:

The following routine tests shall be conducted at the supplier's cost on each surge arrester and shall be submitted along with or before offering for inspection for purchaser's approval.

- (a) Sealing test: Water dip test at 1.5m depth from top of Surge Arrestor for 30 minutes shall be performed during assembly of Surge Arrester stacks.
- (b) Measurement of reference voltage.
- (c) Residual voltage tests.
- (d) Measurement for partial discharge.

Note: The above mentioned tests shall be carried out scrupulously as per the sequence i.e. sequentially from (a) to (d).

6.3 ACCEPTANCE TESTS:

The following tests, considered as acceptance tests, shall be conducted in the presence of purchasers representative for which no charges will be payable by OPTCL. The acceptance tests, whenever possible shall be conducted on the complete arrester unit.

- I. Sealing test:** Water dip test at 1.5m depth from top of Surge Arrestor for 30 minutes shall be performed on the fully assembled Surge Arrester. This test shall be carried out first followed by all other tests as stipulated from II – VII mentioned below.
- II.** All Acceptance Tests including **Special Thermal Stability Test** as mentioned in the latest revision of relevant IEC / IS.
- III.** Measurement of leakage current and capacitive current at M.C.O.V.
- IV.** Galvanization test on metal parts.
- V.** The functional (operational) test on the Surge Counter by way of checking its operation at following nominal discharge currents:
 - (i) 100 Amps with 8/20 micro second wave shape.
 - (ii) 10 KA with 8/20 micro second wave shape.
- VI.** Check of calibration of leakage current meters.
- VII.** Wattloss measurement at 10 KV and U_c at ambient temperature.

Note: The sampling of specimens for acceptance test shall be as per clause no.9.2.1 of IEC 60099-4.

7. INSPECTION:-

- I. The purchaser shall have access at all time to the works and all other places of manufacture, where the Surge Arresters are being manufactured and the supplier shall provide all facilities for unrestricted inspection of the supplier's works, raw materials, manufacture of all the accessories and for conducting the necessary tests.
- II. The supplier shall keep the purchaser informed in advance of the time of starting and the progress of manufacture of equipment in its various stages so that arrangements could be made for inspection.
- III. No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected, tested and dispatch schedule attached to this specification.
- IV. The acceptance of any quantity of equipment shall in no way relieve the supplier of his responsibility for meeting all the requirements of this specification and shall not prevent subsequent rejection, if such equipment are later found to be defective.

8. QUALITY ASSURANCE PLAN:-

- 8.1** The suppliers, within 30 days of placement of order shall submit the following information to the purchaser.
- (i) List of raw materials as well as bought out accessories and the names of the materials selected from those, furnished along with the offer.
 - (ii) Type test certificates of the raw material and bought out accessories.
 - (iii) Finalization of MQP and FQP (which were submitted during technical bid) with hold points for purchaser's inspection. **The purchaser reserves the right to share its Standard Manufacturing Quality Plan (SMQP) and Field Quality Plan (FQP) to the manufacturer which shall be mutually agreed upon in such a case.**
- 8.2** The supplier shall submit the routine test certificates of bought out item, raw material and finished products at the time of offering for acceptance tests of the fully assembled equipment.
- 8.3** All the testing equipment, meters etc. should have been calibrated in a Government approved laboratory. The Bidder/EPC must submit the list of testing equipment and meters test-wise as per Annexure-C of this Technical Specification.

9. DOCUMENTATION:

9.1 The supplier shall furnish four sets of following drawings/documents along with his offer.

- (i) General outline drawings of the complete Arrester with technical parameters.
- (ii) Drawings showing clearance from grounded and other line objects and between adjacent poles of Surge Arresters, required at various heights of Surge Arresters.
- (iii) Drawings showing details of pressure relief devices.
- (iv) Detailed drawing of discharge counters along with the wiring and schematic drawing of discharge counter and meter.
- (v) Outline drawing of insulating base.
- (vi) Details of grading rings, if used.
- (vii) Mounting details of Surge Arresters.
- (viii) Details of line terminal connectors and ground terminals.
- (ix) Volt-time characteristics of Surge Arresters.
- (x) V-I characteristic of Zinc Oxide Disc.
- (xi) Details of galvanization being provided on different ferrous parts.
- (xii) The detailed dimensional drawing of porcelain Housing/Polymer Housing such as ID, OD, thickness and insulator details such as height, profile of petticoats, angle of inclination and gap between successive petticoats, total creepage distance etc.
- (xiii) Cross-sectional view of the Surge Arrester Units showing all components including sealing.

9.2 TEST REPORTS :

- (i) Both hardcopies and soft copies of type test reports shall be furnished to the purchaser with the tender specification. Copies of acceptance test reports and routine test reports shall be furnished to the purchaser. One copy will be returned duly certified by the purchaser and only thereafter shall the materials be dispatched.
- (ii) All records of routine test reports shall be maintained by the supplier at his works for periodic inspection by the purchaser.
- (iii) All test reports of tests, conducted during manufacture shall be maintained by the supplier. These shall be produced for verification as and when requested for by the purchaser.

10. PACKING AND FORWARDING:

The equipment shall be first packed in durable sealed polythene and then in suitable wooden crates (for porcelain housing surge arresters) and sealed hard plastic crates with caps (for composite housing surge arrester) with required packing for support so as to withstand handling during transport and outdoor storage in the field units. **The packaging of Composite housing arresters (generally prone to damage) shall be robust enough to avoid intrusion of rats and rodents and suitable for outdoor storage in both horizontal and vertical position.** The supplier shall be responsible for any damage to the equipment during transit, due to improper and inadequate packing. The easily damageable material shall be carefully packed and marked with the appropriate caution symbols. Wherever necessary, proper arrangement of lifting such as lifting hooks etc. shall be provided. Any material found short inside the packing cases shall be supplied by the supplier without any extra cost.

10.1 Each consignment shall be accompanied by a detailed packing list containing the following information:

- (a) Name of the consignee :
- (b) Details of consignment :
- (c) Destination :
- (d) Total weight of consignment :
- (e) Sign showing upper/lower side of the crate :
- (f) Handling and unpacking instructions :
- (g) Bill of materials indicating contents of each package :

10.2 The supplier shall ensure that the bill of materials is approved by the purchaser before dispatch.

11. QUANTITY AND DELIVERY REQUIREMENT:

- (i) This is set out in Appendix – II of this specification.
- (ii) The scope of supply shall include a supply of 5% extra quantity of bolts, nuts, washers, split pins, cotter pins and such other small loose items free of cost.

APPENDIX – I.

(TECHNICAL REQUIREMENTS)

TECHNICAL REQUIREMENTS FOR METAL OXIDE (GAPLESS) SURGE ARRESTERS

The Surge Arrester under this Specification shall conform to the parameters given below:-

Sl. No.	Particulars.	Technical Parameters	Technical Parameters.	Technical Parameters	Technical Parameters
1	Nominal system voltage (phase to phase) (KV rms).	400	220	132	33
2	Highest system voltage (phase to phase) (KV rms).	420	245	145	36
3	System Frequency (HZ).	50 ± 5 %	50 ± 5 %	50±5%	50 ±5%
4	System Neutral earthing.	Effectively earthed.	Effectively earthed.	Effectively earthed	Effectively earthed
5	Installation.	Outdoor.	Outdoor.	Outdoor	Outdoor
6	Arrester Class.	Station class, 20 KA, heavy duty type.	Station class, 10 KA, Medium duty type.	Station class, 10 KA, Medium duty type.	Station class, 10 KA, Light duty type.
7	Type of construction of arrester.	Single column, single phase.	Single column, single phase.	Single column, single phase.	Single column, single phase
8	No. of phases.	Three	Three	Three	Three
9	Maximum duration of earth fault (Sec.)	3	3	3	3
10	Rated arrester voltage (KV rms)	336	216	120	30
11	Nominal discharge current (KAP)	20 KA of 8/20 μsec wave	10 KA of 8/20 μsec wave	10 KA of 8/20 μsec wave	10 KA of 8/20 μsec wave
12	Rated min. Thermal Energy Rating (KJ/KV)(Wth)	12kJ/kV	7kJ/kV	7kJ/kV	4kJ/kV
13	Repetitive charge transfer rating@ Qth	2.4 C	1.6 C	1.6 C	1 C
14	Continuous operating voltage at 50° C(KV rms)	267	172	102	24
15	Maximum switching surge residual voltage (KVP)	670 (at 2KA)	500 at 1KA	280 at 1KA	72 at 500 A
16	Maximum residual voltage at 8/20 micro second(KVP)				
	(i) 5 KA.	---	560	310	85
	(ii) 10 KA Nominal discharge current.	800	600	330	90
	(iii) 20 KA.	850	---	---	---

17	Steep fronted Wave residual Voltage at 20kA(KVp)	925	---	---	---
18	High current short duration test value (KAP) (4/10 Micro-second wave).	100	100	100	100
19	Low current long duration test value	As per latest IS and IEC			
20	Prospective Symmetrical SC current (KA-rms)	63	50	40	31.5
21	Minimum accepted creepage distance(mm/KV) unless otherwise categorically specified				
i)	Polymer Housing	31	31	31	31
ii)	Porcelain Housing	25	25	25	25
22	One minute wet power frequency withstand voltage of Arrester housing (KV-rms).	N/A	As Per latest IS and IEC	As Per latest IS and IEC	As Per latest IS and IEC
23 (a)	Impulse withstand voltage of arrester housing with 1.2/50 micro-second wave (KVP).	As Per latest IS and IEC	As Per latest IS and IEC	As Per latest IS and IEC	As Per latest IS and IEC
(b)	Switching Impulse Voltage (Wet) with 250/2500 micro-second (KVP)	As Per latest IS and IEC	N/A	N/A	N/A
24	SC Design Classification	Design -A	Design –A/B	Design–A/B	Design –A/B
25	Corona extinction voltage (KV-rms).	320	216	-	-
26	RIV for frequency between 0.5 MHz and 2 MHz in all positions	Less than 500 micro volts at 266KV	Less than 500 micro volts for 156 KV	Less than 500 micro volts for 92 KV	--
27	Partial discharge at 1.05 times continuous over-voltage.	Nor more than 10 PC.	Nor more than 10 PC.	Nor more than 10 PC	Nor more than 10 PC
28	Seismic acceleration.	0.3g horizontal 0.15g vertical	0.3g horizontal 0.15g vertical.	0.3g horizontal 0.15g vertical.	0.3g horizontal 0.15g vertical
29	Reference ambient temperature.	50°C	50°C	50°C	50°C
30	(a) IR at MCOV.	Less than 500 micro amperes.	Less than 500 micro amperes.	Less than 500 micro amperes.	Less than 400 micro amperes

	(b) IC at MCOV.	Less than 1500 micro amperes.	Less than 1500 micro amperes.	Less than 1500 micro amperes.	Less than 1200 micro amperes
31	a) Reference Current (mAp)	As per IEC	As per IEC	As per IEC	As per IEC
	b) Reference voltage at reference current.	Greater than rated voltage.	Greater than rated voltage.	Greater than rated voltage.	Greater than rated voltage.
32	Cantilever strength withstand in KG for 1 minute	350	150	150	150
33	Maximum deflection at above cantilever in mm	200	125	50	20
34	TOV (KVP).				
	(i) 0.1 sec.	575	382	170	53
	(ii) 1.0 sec.	550	366	163	51
	(iii) 10.0 sec.	475	351	156	49
	(iv) 100.0 sec.		336	149	47

APPENDIX – II

QUANTITY AND DELIVERY SCHEDULE

Lot	Description.	Quantity required in No.s	Desired delivery.	Destination.
1	2	3	4	5
1	400KV SA		Within xxxxx months from the date of placement Purchase Order	Any store/site within Orissa State, same will be mentioned in the purchase order/release order.
2	220KV SA		-do-	-do-
3	132KV SA		-do-	-do-
4	33KV SA		-do-	-do-

The detail delivery program and quantity to be delivered will be intimated at the time of placement of the purchase order/issue of release order.

ANNEXURE-A.

GUARANTEED TECHNICAL PARTICULARS FOR 420/245/145/36 KV SURGE ARRESTER

(To be filled in by the Bidder/EPC)

1	Bidder/EPC's Name and Address.	
2	Manufacturer's Name.	
3	Manufacturer's type designation.	
4	Applicable standards.	
5	Arrester class and type.	
6	Rated Arrester Voltage (KV rms).	
7	Maximum continuous operating voltages (MCOV) at design ambient temperature (KV-rms).	
8	Nominal discharge current (8/20 micro second wave) (KA).	
9	Thermal Energy rating (KJ/KV).	
10	Repetitive charge transfer rating(C)	
11	Maximum switching surge residual voltage	
12	Maximum residual voltage for 8/20 micro-second current wave.	
	(a) At 50 % nominal discharge current.	
	(b) At 100 % nominal discharge current.	
	(c) At 200 % nominal discharge current.	
13	Maximum residual voltage with 1 micro-second current wave at 20 KAP (KVP).	
14	One minute power frequency (dry) & (wet) withstand voltage of arrester (KV-rms).	
15	Impulse withstand test voltage of arrester housing with 1.2/50 micro-second wave (KVP).	
16	High current short duration (4/10 micro-second impulse wave) (KAP).	
17	Low current long duration (KAP).	
18	Reference voltage and corresponding reference current of arrester (KV)(mA).	
19	Maximum internal leakage current by its rms or peak value and both resistive and capacitive component separately at	
	(a) Nominal System voltage ($\pm 5\%$) (resistive/capacitive) (mA).	
	(a) COV (resistive/capacitive) (mA).	
	(b) 1.1 COV (resistive/capacitive) (mA).	
	(c) COV at 150°C (resistive/capacitive) (mA).	
	(d) Reference voltage (resistive/capacitive) (mA).	
20	Short Circuit Design Class(Design-A / Design-B)	
21	Are the protection levels affected by pollution of external insulation.	
22	Energy absorption capability per operation of the arrester, during a switching surge discharge (KJ).	
23	Maximum amount of energy that may be dispatched into the arrester during discharge assuming that discharge takes place within 1 minute period and state the switching surge current (KJ/KA).	
24	Internal pressure required to operate pressure relief device /weak spot of housing (in case of composite housing)	
25	Dynamic 50 Hz over-voltage with stand capability (KV-rms).	

	(a) For 0.1 Second.	
	(b) For 1 Second.	
	(c) For 10 Seconds.	
	(d) For 100 Seconds.	
26	Minimum prospective symmetrical fault current (KA).	
27	Declared Bending load for Composite Housing Surge Arrester i) Specified Short Term Load ii) Specified Long term Load iii) Maximum deflection during application of load iv) Permanent deflection measured from 1min to 10 min	
28	Declared Bending load for Porcelain/Cast resin Housing Surge Arrester i) Specified Short Term Load ii) Mean Breaking Load iii) Maximum deflection during application of load iv) Permanent deflection measured from 1min to 10 min	
29	Connecting cable from insulating base to surge monitor(material, size and length to be specified)	
30	Whether potential free contact provided in surge counter for 420/245/145 KV arrester	
31	Rejection rate of ZnO blocks during manufacturing and operation for the past three years (%) separately.	
	(a) 2017-2018.	
	(b) 2018-2019.	
	(c) 2019-2020.	
32	ZnO DISC DATA.	
	(a) Rated voltage of ZnO disc. (KV-rms).	
	(b) No. of ZnO discs in a unit (Nos.)	
	(c) No. of units of arrester (Nos.)	
	(d) Height/thickness of ZnO discs (mm).	
	(e) Diameter of ZnO disc (mm).	
33	OVER ALL DIMENSIONS.	
	(a) Overall Height (mm).	
	(b) Height up to top of terminal pad from mounting plane (mm).	
	(c) Material of terminal pad.	
	(d) Size of terminal pad (mm).	
	(e) Mounting dimensions and diameter of mounting holes (mm).	
	(f) Diameter of insulator (mm).	
	(g) Total weight of complete arrester (Kg.)	
34	TERMINAL CONNECTOR.	
	(a) Manufacturer's Name.	
	(b) Applicable standards.	
	(c) Type.	
	(d) Material of connector.	
	[i] Clamp body.	
	[ii] Bolts and Nuts.	
	[iii] Spring washers.	

	(e) Rated current (Amps.)	
	(f) Rated terminal load (kg.)	
	(g) Factor of safety.	
	(h) Minimum thickness of any part (mm).	
	(i) Weight of clamp complete with hard ware (kg.)	
	(j) Type test report as per IS enclosed.	
	(k) OGA Drawing enclosed.	
35	INSULATOR HOUSING.	
	(a) Manufacturers Name.	
	(b) Type.(Porcelain/Composite)	
	(c) Applicable standards.	
	(d) Height (mm).	
	(e) Diameter (top) mm	
	(f) Diameter (bottom) mm	
	(g) Total creepage distance (mm).	
	(h) Rated voltage (KV-rms)	
	(i) Power frequency with stand voltage for 1 min in KV-rms	
	I) Dry	
	II) Wet	
	(j) 1.2/50 micro - second impulse withstand voltage (KVP)	
	(k) Corona Extinction voltage (KV-rms)	
	(l) Weight (kg.)	
	(m) Maximum allowable span (mm).	
	(n) Cantilever strength (Kg-m).	

Signature of the Bidder/EPC with Seal & Date

ANNEXURE – B

CHECK – LIST

2. Whether there is provision of Corona Grading Ring in the SA? If not, whether justification for non-provision of the same furnished?
3. Whether calculations and supporting evidence for reference current furnished to satisfy Clause No.4.4 of TS?
4. Whether the heat treatment cycle details along with necessary quality checks used for individual blocks furnished?
5. Whether sectional view of arrester showing details of sealing provided furnished?
6. Whether S.A. is suitable for hot line washing?
7. Whether porcelain petticoat is of aero foil design? Whether drawing of porcelain Housing furnished? **OR**
Whether Composite Housing drawings, Cross-sectional views furnished in the Drawing?
8. Whether information as per Clause No.8 of TS furnished?
9. Whether drawings and documents as per Clause No.9 of TS furnished?
10. Whether the Surge Arrester base design confirms to Clause No.5.14.11?
11. Whether the surge Arrester design confirms to Clause No.4.6? If yes, justify with necessary calculation.
12. Whether special measures in the manufacture of Surge Arrester for operating at ambient temperature of 50°C (against 40°C as per IEC-99-4, Clause No.4.4.1) are to be taken? State the special measures in details

Signature of the Bidder/EPC with Seal & Date

ANNEXURE –C

CALIBRATION STATUS OF TESTING EQUIPMENTS AND INSTRUMENTS/METERS

Sl no	CALIBRATION OF EQUIPMENTS	Furnished or not
1	Name of the Test.	
2	Meters and equipment required for the corresponding test with range accuracy make and Sl. No.	
3	Date of Calibration.	
4	Due date of Calibration.	
5	Name of the Calibrating Agency	
6	Whether Calibrating Agency is Govt. Approved.	
7	Whether documents relating to Govt. Approval of the calibrating Agency furnished?	
8	Whether the meters/ equipment fulfill the accuracy class as per calibration report	
9	Whether the calibrating agency has put any limitation towards the use of the particular meter/equipment. If yes, state the limitations.	
10	Whether green sticker or blue sticker or yellow sticker has been affixed on the body of the particular equipment/meter. State the colour of the affixed sticker.	
11	In spite of imposed limitations, whether the particular meter/equipment can still be used? Justify its use for corresponding test(s).	
12	Remarks if any.	

Signature of the Bidder/EPC with seal and date

ANNEXURE-D
CHECK LIST TOWARDS TYPE TEST REPORTS

SL no	<u>TYPE TEST REPORTS</u>	Furnished or not
1	Name of the Type Test.	
2	Date of Test.	
3	Name of the Laboratory where the Test has been conducted.	
4	Whether the Laboratory is Government Approved.	
5	Test reports are valid as per T.S.	
6	Whether the copy of Test Report in complete shape along with drawings etc. furnished or not?	
7	Whether the Type Tested Surge Arrester fulfills the technical requirements as per TS.	
8	If the type tested Surge Arrester does not fulfill the technical requirements as per this specification, whether the Bidder/EPC agrees to conduct the particular type test again at their own cost without any financial liability to OPTCL in the presence of OPTCL's representative within the specified delivery period.	
9	Remarks if any.	

Signature of the Bidder/EPC with seal and date

APPENDIX -III

	<u>SUPPLIER DETAILS:</u>	STANDARD MANUFACTURING QUALITY PLAN			CUSTOMER ADDRESS: OPTCL CORPORATE OFFICE,JANPATH, BHOINAGAR,BHUBANESWAR, ODISHA, PIN-751022	
		EHV SURGE ARRESTER(UP TO 400 KV)				
		DATE OF ISSUE :- 23.12.2022	REV. :- 00	QAP NO. :- OPTCL/EQ/MQP/EHVSA		


Abbreviation used in this booklet -

PH -- PHYSICAL
EL -- ELECTRICAL
VI -- VISUAL
MM – MEASUREMENT
CH -- CHEMICAL
ME – MECHANICAL


SS – SAMPLE SELECTION
AD – APPROVED DRAWING/GTP
AS – APPLICABLE STANDARD
AL – ACCREDITED LAB
RR—RECORD REVIEW
DD—DESIGN DATASHEET

S -- SUB-VENDOR
M -- MANUFACTURER
C -- CUSTOMER
P -- PERFORM
V -- VERIFICATION
W -- WITNESS


T.C. --TEST CERTIFICATE
E.M.--EQUIPMENT MANUFACTURER
C.M.--COMPONENT MANUFACTURER
CHP -CUSTOMER HOLD POINT

	<u>SUPPLIER DETAILS:</u>	STANDARD MANUFACTURING QUALITY PLAN					<u>CUSTOMER ADDRESS:</u> OPTCL CORPORATE OFFICE,JANPATH, BHOINAGAR,BHUBAN ESWAR, ODISHA, PIN-751022	 OPTCL <i>Lifeline of Odisha</i>			
		EHV SURGE ARRESTER (UP TO 400 KV)									
		DATE OF ISSUE :- 23.12.2022		REV. :- 00		QAP NO. :- OPTCL/EQ/MQP/EHVSA					
SL. NO.	ITEM / TEST / OPERATION	TYPE OF CHECK	SAMPLING RATE	REFERENCE DOCUMENT	ACCEPTANCE NORMS			RECORD FORMATS	RESPONSIBILITY		
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1	RAW MATERIAL INSPECTION									
1.1	POLYMER INSULATOR									
1.1.1	Visual Examination	Visual	3% EM / 100% at supplier	Approved Drawing & OPTCL Specification / IEC 61462	Approved Drawing & OPTCL Specification / IEC 61462	CMTC/EMTC	P	P/W	V	
1.1.2	Overall Height	Measurement	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.3	Inner Diameter (if applicable)	Measurement	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.4	Parallelism of flanges (If applicable)	Physical	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.5	Creepage distance	Physical	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.6	Inner Pressure (If applicable)	Mechanical	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.7	Routine Bending load	Mechanical	-do-	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.1.8	Hardness shore-A (If applicable)	Mechanical	-do-	ASTM D 2240/ DIN 53505 / IEC61462	ASTM D 2240/ DIN 53505 / IEC61462	CMTC/EMTC	P	P/W	V	
1.1.9	Elongation	Mechanical	-do-	ASTM D 412/ DIN 53504	ASTM D 412/ DIN 53504	CMTC/EMTC	P	P/W	V	
1.1.10	Tensile Strength	Mechanical	-do-	ASTM D 412/ DIN 53504 / ISO 37 TY 1	ASTM D 412/ DIN 53504	CMTC/EMTC	P	P/W	V	
1.1.11	Tear strength	Mechanical	-do-	ASTM D 624B	ASTM D 624B	CMTC/EMTC	P	P/W	V	


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1.2	PORCELAIN INSULATOR (UPTO 336 KV CLASS) (If applicable)								
1.2.1	Visual Examination	Visual	100%	IS 5621/OPTCL Specification	IS 5621/OPTCL Specification	CM-TC	P	P/W	V
1.2.2	Porosity test	Physical	1 sample per lot	-do-	-do-	CM-TC	P	P/W	V
1.2.3	Temperature cycle test	Physical	2 sample per lot	-do-	-do-	CM-TC	P	P/W	V
1.2.4	Ultrasonic test	Electrical	100%	-do-	-do-	CM-TC	P	P/W	V
1.3	ALUMINIUM FLANGE/CASTING (if applicable)								
1.3.1	Chemical Composition	Chemical	1sample/batch every six months EM & 1sample/every batch supplier	IS 617 /OPTCL Specification	IS 617 /OPTCL Specification	CM-TC	P	P/W	V
1.3.2	Tensile Strength	Mechanical		-do-	-do-	CM-TC	P	P/W	V
1.3.3	Hardness	Physical		-do-	-do-	CM-TC	P	P/W	V
1.3.4	Visual/finish	Visual		-do-	-do-	CMTC/EMTC	P	P/W	V
1.3.5	Dimension	Measurement		-do-	-do-	CMTC/EMTC	P	W	V
1.4	FRP TUBE (if applicable)								
1.4.1	Specific Gravity	Physical	One sample/lot	OPTCL Specification / IEC 62217	OPTCL Specification / IEC 62217	CM-TC	P	P/W	V
1.4.2	Water Absorption	Physical	One sample/lot	-do-	-do-	CM-TC	P	P/W	V


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1.4.3	Glass Content	Physical	One sample/lot	-do-	-do-	CM-TC	P	W	V
1.4.4	Visual	Visual	5 sample/lot	-do-	-do-	CM-TC	P	W	V
1.4.5	Dielectric Strength	Electrical	EM/100% supplier	-do-	-do-	CM-TC	P	W	V
1.4.6	Dimension	Measurement	5 sample per lot	-do-	-do-	CM-TC	P	W	V

1.5	FRP ROD								
1.5.1	Specific Gravity	Physical	One sample/lot	OPTCL Specification/ ASTM D 792 // IEC 62217	OPTCL Specification/ ASTM D 792 // IEC 62217	CM-TC	P	P / W	V
1.5.2	Water Absorption	Physical	One sample/lot	OPTCL Specification / ASTM D 570	OPTCL Specification / ASTM D 570	CM-TC	P	P / W	V
1.5.3	Glass Content	Physical	One sample/lot	OPTCL Specification / ASTM D 2584	OPTCL Specification / ASTM D 2584	CM-TC	P	W	V
1.5.4	Visual	Visual	5 sample/lot EM/100% supplier	OPTCL Specification	OPTCL Specification	CM-TC	P	W	V
1.5.5	Dielectric Strength	Electrical	Once in six month	IEC 62217/ OPTCL Specification	IEC 62217/ OPTCL Specification	CM-TC	P	W	V
1.5.6	Dimension	Measurement	5 sample per lot EM & supplier	OPTCL Specification/ Approved Drawing	OPTCL Specification/ Approved Drawing	CM-TC	P	W	V


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1.6	SPRING (if applicable)									
1.6.1	Chemical Composition	Chemical	One sample/lot	OPTCL Specification/ IS 4454	OPTCL Specification / IS 4454	CM-TC	P	P/W	V	
1.6.2	Diameter	Measurement	One sample/lot	-do-	-do-	CMTC/EMTC	P	P/W	V	
1.6.3	Height	Measurement	One sample/lot	-do-	-do-	CMTC/EMTC	P	W	V	
1.6.4	Load	Electrical	One sample/lot	-do-	-do-	CM-TC	P	W	V	
1.6.5	Permanent Set	Physical	One sample/lot	-do-	-do-	CM-TC	P	W	V	
1.7	GASKET (if applicable)									
1.7.1	Shore Hardness	Mechanical	One sample/lot	OPTCL Specification/Manufacturer standard	OPTCL Specification / Manufacturer standard	CM-TC	P	W	V	
1.7.2	Tensile Strength	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V	
1.7.3	Elongation	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V	
1.7.4	Compression Permanent test	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V	
1.7.5	Ozone resistance test	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V	


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1.8	PRESSURE RELIEF PLATE (if applicable)								
1.8.1	Visual	Visual	5 sample per lot, EM/100%	OPTCL Specification/Manufacturer standard	OPTCL Specification/Manufacturer standard	CMTC/EM TC	P	P/W	V
1.8.2	Dimension	Measurement	-do-	-do-	-do-	CMTC/EM TC	P	P/W	V
1.8.3	Thickness	Measurement	-do-	-do-	-do-	CMTC/EM TC	P	W	V
1.8.4	Pressure test	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V


1.9	INSULATING BASE								
1.9.1	Electrical Test	Electrical	One sample/lot	OPTCL Specification / Manufacturer standard	OPTCL Specification / Manufacturer standard	CM-TC	P	W	V
1.9.2	Compression test (if applicable)	Mechanical	One sample/lot	-do-	-do-	CM-TC	P	W	V
1.9.3	Dimension	Measurement	5 sample per lot EM and supplier	-do-	-do-	CM-TC	P	W	V

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1.10	TERMINAL ASSEMBLY											
1.10.1	Coating thickness in HDG item	Measurement	1 sample per lot EM /supplier 5 sample	OPTCL Specification/ Approved Drawing	OPTCL Specification / Approved Drawing	CM-TC	P	P/W	V			
1.10.2	Visual	Visual	100%	-do-	-do-	CM-TC	P	P/W	V			
1.10.3	Dimension	Measurement	1 sample per lot EM & SUPPLIER	-do-	-do-	CM-TC	P	P/W	V			
1.10.4	Tensile strength	Mechanical	1 sample per lot EM & SUPPLIER	IS 733	IS 733	CM-TC	P	P/W	V			
1.11	SURGE COUNTER											
1.11.1	Calibration setting at 1mA	Electrical	100 %	OPTCL Specification, IEC 60099-5 / Manufacturer Plant standard	OPTCL Specification, IEC 60099-5/ Manufacturer Plant standard	CMTC/ EMTC	P	P/V	V			
1.11.2	Counter operation test	Electrical	100 %	-do-	-do-	CMTC/ EMTC	P	P/V	V			
1.11.3	Water dip test	Physical	100 %	-do-	-do-	CMTC/ EMTC	P	P/V	V			
1.11.4	Visual	Visual	100 %	-do-	-do-	CMTC/ EMTC	P	P/V	V			
1.11.5	Dimension	Measurement	One sample/lot	-do-	-do-	CMTC/ EMTC	P	P/V	V			

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1.12 HARDWARE									
1.12.1	Coating thickness	Measurement	5 sample per lot	OPTCL Specification/ Relevant Standard	OPTCL Specification/ Relevant Standard	CMTC/EM TC	P	P/W	V
1.12.2	Dimension	Physical	5 sample per lot	-do-	-do-	CMTC/EM TC	P	P/W	V
1.12.3	Thread check	Physical	5 sample per lot	-do-	-do-	CMTC/EM TC	P	P/W	V
1.12.4	Visual Inspection	Visual	5 sample per lot	-do-	-do-	CMTC/EM TC	P	P/W	V
1.13 BASE PLATE									
1.13.1	Coating thickness in HDG item	Measurement	1 sample per lot EM/supplier 5 sample	OPTCL Specification/ IS 2629/IS 2633/ IS 4759	OPTCL Specification / OPTCL Specification/ IS 2629/IS 2633/ IS 4759	CM-TC	P	P/W	V
1.13.2	Visual	Visual	100%	OPTCL approved drawings	OPTCL approved drawings	CM-TC	P	P/W	V
1.13.3	Dimension	Measurement	1 sample per lot EM & supplier	OPTCL approved drawings	OPTCL approved drawings	CM-TC	P	P/W	V
1.14 GRADING RING									
1.14.1	Chemical Composition	Chemical	one sample/lot	OPTCL Specification/ IS 733	OPTCL Specification/IS 733	CM-TC	P	P/W	V

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1.14.2	Dimension	Measurement	1 sample per lot EM/supplier 5 sample	-do-	-do-	CMTC/EM TC	P	P/W	V
1.14.3	Visual	Visual	1 sample per lot EM/supplier 100%	-do-	-do-	CMTC/EM TC	P	P/W	V

1.15	ZNO BLOCKS
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1.15.1	Aging Test for 72 hrs & Watt loss & Thermal Stability	Electrical	3Sample/lot	OPTCL Specification/ Relevant standard	OPTCL Specification/ Relevant standard	CM-TC	P	P/W	W/V
1.15.2	Energy Capability Test	Electrical	100%	-do-	-do-	CM-TC	P	P/W	W/V
1.15.3	Residual voltage	Electrical	100%	-do-	-do-	CM-TC	P	P/W	W/V
1.15.4	Reference Voltage	Electrical	5 Samples per lot	-do-	-do-	CM-TC	P	P/W	W/V
1.15.5	Visual	Visual	100%	-do-	-do-	CM-TC	P	P/W	W/V
1.15.6	Dimension	Measurement	5 Sample/lot	-do-	-do-	CM-TC	P	P/W	W/V


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B	IN PROCESS INSPECTION (OPTCL may carry out inspection as and when required)								
2.1	POWDER PROCESSING								
2.1.1	Powder Processing	Physical	OPTCL Specification & EM Drawing	OPTCL Specification/ Manufacturer's standard	OPTCL Specification/ Manufacturer's standard	EM-TC	---	P	V
2.2	FURNACE AREA								
2.2.1	Furnace area	Physical	OPTCL Specification & EM Drawing	OPTCL Specification / Manufacturer's standard	OPTCL Specification / Manufacturer's standard	EM-TC	---	P	V
2.3	ZNO BLOCK INSPECTION								
2.3.1	Visual Examination	Visual	100%	OPTCL Specification	OPTCL Specification	EMTC	--	P	V
2.3.2	Physical	Visual	3 sample/batch	OPTCL Specification & EM Approved Drawing	OPTCL Specification & EM Approved Drawing	EMTC	--	P	V
2.3.3	Dimension	Visual	3 sample/batch	-do-	OPTCL Specification & EM Approved Drawing	EMTC	---	---	V
2.3.4	Parallality	Visual	3 sample/batch	-do-	OPTCL Specification & EM Approved Drawing	EMTC	---	P	V
2.3.5	Residual Voltage Test	Electrical	3 sample/batch	OPTCL Specification & IEC 60099-4	OPTCL Specification & IEC 60099-4	EMTC	--	P	V
2.3.6	Thermal stability test & energy capability test on ZnO Blocks	Electrical	3 sample/batch	OPTCL Specification / IEC 60099-4 (2 L.D. impulses of 2 msec Duration)	OPTCL Specification / IEC 60099-4	EMTC	--	P	V

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2.3.7	Watt loss test on ZnO Blocks	Electrical	3 sample/batch	OPTCL Specification/ IEC 60099	OPTCL Specification/ IEC 60099	EMTC	--	P	V	
2.3.8	Repetitive charge transfer rating(Qrs)	Electrical	3 sample/batch	OPTCL Specification/ IEC 60099	OPTCL Specification/ IEC 60099	EMTC	--	P	V	

C	FINAL INSPECTION AND TESTING									
	NOTE: ALONG WITH FINAL INSPECTION OFFER, THE OEM HAS TO SUBMIT THE FOLLOWING (IN BOTH SOFT AND HARD COPIES): <ol style="list-style-type: none"> INTERNAL TEST REPORT (ROUTINE TEST REPORT) INSTRUMENT CALIBRATION CERTIFICATES TEST PROCEDURES AND CONNECTION DIAGRAM IN CASE OF INSPECTION IS CONDUCTED THROUGH VIDEO CONFERENCING, THE FIRM HAS TO DECLARE IN WRITTEN THAT ATLEAST 4 HIGH RESOLUTION CAMERAS SHALL FOCUS TOWARDS THE TEST OBJECT FROM DIFFERENT ANGLES GIVING THE INSPECTOR MULTIDIRECTIONAL VIEW AND ONE PORTABLE CAMERA WHICH SHALL GIVE CLOSE IN VIEW OF THE TEST RUSLTS OF TESTING INSTRUMENTS.THE VC APPLICATION REQUIRED FOR CONDUCTING THE INSPECTION SHALL ALSO BE MENTIONED. 									
	OPTCL WILL DEPUTE /NOMINATE ITS INSPECTOR FOR INSPECTION ONLY AFTER VERIFICATION AND CONFIRMATION OF THE ABOVE.									
3.1	ROUTINE TEST									
3.1.1	Sealing test for units with sealed housings.	Physical	100%	OPTCL Specification	Water dip test at 1.5m depth from top of Surge Arrestor for 30 minutes shall be performed.	EM-TC	---	P	V	
3.1.2	Reference Voltage Measurement	Electrical	100%	IEC 60099-4 / OPTCL Datasheet	IEC 60099-4 / OPTCL datasheet. After water Dip at 1.5 meter depth for 30 min	EM-TC	---	P	V	


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3.1.3	Lightening impulse Residual Voltage Test	Electrical	100%	IEC 60099-4 / OPTCL Datasheet	IEC 60099-4 / OPTCL datasheet. After water Dip at 1.5 meter depth for 30 min	EM-TC	--	P	V
3.1.4	Measurement of Internal Partial Discharge and contact noise	Electrical	100%	IEC 60099-4 / OPTCL Datasheet	IEC 60099-4 / OPTCL datasheet. After water Dip at 1.5 meter depth for 30 min	EM-TC	--	P	V
3.1.5	Current distribution test (for multi column arrester)	Electrical	100%	IEC 60099-4	IEC 60099-4	EM-TC	--	P	V


3.2	FINAL ACCEPTANCE TEST ON ARRESTER								
3.2.1	Sealing test for units with sealed housings.	Physical	Cube root of quantity	OPTCL Specification	Water dip test at 1.5m depth from top of Surge Arrestor for 30 minutes shall be performed.(Test 3.2.2 to 3.2.4 shall be conducted after water dip test)	EMTC	-	P	W/V
3.2.2	Power frequency Reference Voltage Test	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification. Post water dip at 1.5 meter depth, 30 Mins	EMTC	-	P	W/V
3.2.3	Lightening Residual Voltage Test(at N.D.C., 50% of N.D.C. & 200% of N.D.C)	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification. Post water dip at 1.5 meter depth, 30 Mins	EMTC	-	P	W/V
3.2.4	Partial Discharge Test (at 1.05 times M.C.O.V)	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification. Post water dip at 1.5 meter depth, 30 Mins	EMTC	-	P	W/V

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3.2.5	Measurement of leakage current and capacitive current at M.C.O.V	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification	EMTC	-	P	W/V
3.2.6	Watt loss test (at U_c and 10K.V)	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification	EMTC	-	P	W/V
3.2.7	Special Thermal stability test	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification	EMTC	-	P	W/V
3.2.8	Galvanization test on metal parts	Electrical	Cube root of quantity	IEC 60099-4 / IS 2633/ IS 2629 OPTCL Specification	IEC 60099-4 / IS 2633/ IS 2629 OPTCL Specification	EMTC	-	P	W/V
3.2.9	Counter Operation Test a) 100 Amps with 8/20 micro second wave shape. (b) 10 KA with 8/20 micro second wave shape	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification	EMTC	-	P	W/V
3.2.10	Meter Operation and calibration Test	Electrical	Cube root of quantity	IEC 60099-4 / OPTCL Specification	IEC 60099-4 / OPTCL Specification	EMTC	-	P	W/V

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3.3	TYPE TEST										
3.3.1	Insulation withstand tests on the arrester housing	Electrical	As per Purchase Order /Agreed term	IEC 60099-4 & OPTCL Specification	IEC 60099-4 & OPTCL Specification	EMTC	-	P/W	W/V		
3.3.2	Residual voltage test a) Steep current impulse residual voltage test. b) Lightning impulse residual voltage test c) Switching impulse residual voltage test.	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V		
3.3.3	Test to verify long term stability under continuous operating voltage	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V		
3.3.4	Repetitive charge transfer withstand	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V		
3.3.5	Heat dissipation behavior of test samples	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V		
3.3.6	Operating duty test	Electrical	3 samples as per IEC 60099	-do-	-do-	EMTC	-	P/W	W/V		

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		EHV SURGE ARRESTER (UP TO 400 KV)								
		DATE OF ISSUE :- 23.12.2022		REV. :- 00		QAP NO. :- OPTCL/EQ/MQP/EHVSA				
SL. NO.	ITEM / TEST / OPERATION	TYPE OF CHECK	SAMPLING RATE	REFERENCE DOCUMENT	ACCEPTANCE NORMS		RECORD FORMATS	RESPONSIBILITY		
							S	M	C	

3.3.7	Short circuit test (a) High current test. (b) Low current test.	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.8	Power frequency voltage vs. time curve. (Temporary over voltage test)	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.9	Bending moment test	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.10	Seismic withstand test	Electrical	-do-	CISPR Publication 16-1(2019) Part -1 / Relevant IEC	CISPR Publication 16-1(2019) Part -1/ Relevant IEC	EMTC	-	P/W	W/V
3.3.11	Radio interference voltage test	Electrical	-do-	IEC 60099-4 & OPTCL Specification	IEC 60099-4 & OPTCL Specification	EMTC	-	P/W	W/V
3.3.12	Corona Extinction voltage test(For 420/245 KV arresters)	Electrical	-do-	IEC 60099-4 & OPTCL Specification	IEC 60099-4 & OPTCL Specification	EMTC	-	P/W	W/V
3.3.13	Seal leak rate test	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.14	Test to verify dielectric withstand of the internal components of an arrester (if applicable)	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V

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3.3.15	Test of internal grading components(if applicable)	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.16	Weather ageing test(for polymer housing arrester)	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.17	IP-67 test on surge counter	Electrical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.18	Environmental test (not for polymer)	Physical	-do-	-do-	-do-	EMTC	-	P/W	W/V
3.3.19	Polluted housing test (not for polymer)	Physical	-do-	-do-	-do-	EMTC	-	P	W/V

D	PACKING AND DESPATCH								
4.1	Checking for completeness of the equipment and accessories including spares as per order.	Visual	100%	As per EM Process Specification	As per EM Process Specification		-	P	W/V
4.2	Check for proper packing (for polymer/porcelain housing arrester)	Visual	100%	As per EM Process Specification	As per EM Process Specification and cl no 10 of OPTCL specification		-	P	W/V
4.3	Ensure supply of O&M manual and Test reports						-	P	W/V