



CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.

(A Govt. of Chhattisgarh undertaking) (A successor company of CSEB)

* * *

OFFICE OF CHIEF ENGINEER (STORE & PURCHASE)
CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
DAGANIYA, RAIPUR (C.G.) 492-013

Phone: 0771- 2574236, 2574240 Fax: 0771- 2574246

Website- www.csptcl.co.in

TENDER SPECIFICATION

TR-19/S&P/48 Dtd. 19.05.2020

Supply Of Lightening Arrestors of different ratings (Through E-Bidding) RFx No-8100017458

LAST DATE & TIME OF SUBMISSION OF TENDER
15.06.2020 (Time 15:00 Hrs.)

DUE DATE OF OPENING OF TENDER
15.06.2020 (Time 15:30 Hrs.)

Cost of Tender:- i) Rs.1120 (Incl 12% GST) (if purchased from O/o CE(S&P)
ii) Rs.1180 (Incl 18% GST) (if downloaded from website)

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TENDER FORM**CHHATTISGARH STATE POWER TRANSMISSION CO. LTD., RAIPUR (C.G.)****SUPPLY OF LIGHTENING ARRESTERS**

Tender document Sl.No.....

ISSUED to M/s

Cost of Tender documents Rs.....

Received vide D.D. No.....Dtd.....

Name of Bank

Signature & Seal of Issuing Authority**CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
RAIPUR C.G. (INDIA)****TENDER FORM**

The undersigned hereby tender and offer (subject to CSPTCL's conditions of tendering), the Chhattisgarh State Power Transmission Company Limited to test and supply, plant, machinery, materials, deliver and execute and do the several works and things which are described or referred to in the enclosures & Annexures to the specification **TR-19/S&P/48**, copies of which are annexed hereto and which under the terms thereof are to be supplied, executed and done by the contractor in a thoroughly good and workman like manner, and to perform and observe the provisions and agreements or the part of the contract contained in or reasonably to be inferred from the said tender documents for the sum and at the rates set out in schedules annexed hereto.

It is confirmed that:

- (i) Questionnaire for Commercial terms and conditions.
- (ii) Questionnaire for Technical specifications of the Equipments, and
- (iii) All other conditions wherever described in the tender documents have been replied in full giving clear details. It has been noted that in case any reply is not given or any reply is incomplete / ambiguous, the CSPTCL will have right to take the same to be advantageous for the CSPTCL. CSPTCL's decision in this regard will be final. The bidder will have no right to furnish any technical or commercial clarification after opening of the bid which may in any way alter the offered prices.

Dated, this day of

Bidder's Signature**Bidder's Address**

Note:- This form duly signed & stamped should be enclosed with Commercial bid invariably in original i.e. in sheet bearing CSPTCL's officer's sign.

CHHATTISGARH STATE POWER TRANS. CO. LTD.

(A Govt. of Chhattisgarh undertaking) (A successor company of CSEB)

CIN- U40108CT2003SGCO15820 / GSTIN-22AADCC5773E1ZX**O/o Chief Engineer (Store & Purchase)**3rd Floor, SLDC Building, Daganiya, Raipur(C.G.)-492013

Website- www.cspc.co.in

Phone-0771-2574240/36/4002/4004

email- nk.bisen@cspc.co.in

Fax-0771-2574246

AR.Bunkar@cspc.co.in

No.02-16/SE-I(S&P)/TR-19-S&P-41/45/48/159

Raipur, Dtd 19.05.2020

E-PROCUREMENT TENDER NOTICE

Sealed tenders are invited from experienced manufacturers for supply of following equipments/materials.

Sl. No.	Tender No.	Particulars		Qty (in Nos)	Cost of tender document including GST (Rs.)		EMD (Rs.)	Due date
		Lot	Items		Printed Tender Form	E-Tender Form Online (downloaded from website)		
1.	TR-19/S&P/41 RFx No- 8100017496	1	Tan-Delta Test Kit for Bushings & CTs etc	10	1120/-	1180/-	2,50,000/-	11/06/2020
		2	Turns Ratio Test Kit	04				
		3	Transformer Winding Resistance measurement Kit	02				
		4	Automatic Transformer Oil BDV Testing Kit	10				
2.	TR-19/S&P/45 RFx No- 8100017499		Procurement of Portable Dissolve Gas Analyzer (DGA) for Transformer Oil	16	1120/-	1180/-	6,40,000/-	12/06/2020
3.	TR-19/S&P/48 RFx No- 8100017458		Procurement of Lightning Arrester		1120/-	1180/-	71,000/-	15/06/2020
			i) 400 KV LA	04				
			ii) 220 KV LA	41				
			iii) 132 KV LA	99				
			iv) 33 KV LA	204				

- NOTE:- i) In case any of the above dates is declared as holiday then the particular date will automatically get shifted to next working day.
- ii) The quantities mentioned above are tentative & may vary according to final requirement.
- iii) Any notice for extension of due date of tender opening shall not be published in newspapers. It will be displayed only on official website of the company.

- iv) The tender will be processed through e-bidding module of SAP-SRM. Bidders are advised to visit our website www.cspc.co.in/csptcl for viewing detailed instructions regarding submission of offer through SAP-SRM.
- v) **The NIT shall also be published in www.tarang.website**

// TERMS AND CONDITIONS //

- (i) The tender documents can be obtained from the office of the CE (S&P) in person on payment of cost of tender documents in the form of DD only made out in the name of Manager (RAO: HQ), CSPTCL, Raipur accompanied with firm's application on its letter head. If tender document is required by post, Rs.250/- is to be paid by DD additionally along with the cost of documents. If more than one tender document is required, separate DDs should be furnished for each tender. CSPTCL shall not be responsible for any postal delay in receipt/ non-receipt of tender documents. No receipt of tender shall be issued in any case.
- (ii) The tender document can also be downloaded from official website of CSPTCL 'www.cspc.co.in (go through Chhattisgarh State Power Transmission Co. Ltd.- Tender Notice/ Store & Purchase Offices) and required tender fee in form of DD in favour of Manager (RAO:HQ), CSPTCL, Raipur payable at Raipur should be submitted along with EMD in envelope containing DD of EMD. The envelope containing DDs of cost of tender document and EMD should be suitably super scribed "DDs containing cost of tender document and EMD". The details of DDs be mentioned on the outer side of the envelope also. Please note carefully in absence of aforesaid requisite tender fee, further bids shall not be considered for opening.
- (iii) Tender document and the details specification can be obtained on any working day one day prior to the due date. The tenders duly filled in shall be dropped/ get dropped in the specified tender box up to 15.00 Hrs on the due date. Any other means of delivery shall not be accepted. No receipt of tender shall be issued in any case. The tender box shall be locked/ sealed at 15.00 Hrs on the due date and shall be opened at 15.30 Hrs on the same date.
- (iv) After publication of NIT & before the date of opening of TC bid, corrigendum/ other information (if any) shall be displayed on our official web only. The bidders are requested to remain in contact with this office or visit our web-site for any development/ clarification/ amendment issued subsequently.
- (v) CSPTCL reserves the right to accept or reject any or all the offers, in part or full without assigning any reason whatsoever.

(Er. S.D.Telang)
Chief Engineer (S&P)
CSPTCL : Raipur

Special Instructions to bidders for submission of bid through SAP- SRM module (e-bidding)

The tender specification no. **TR-19/S&P/48** is to be processed through e-bidding. The bid is to be submitted online as well as offline (hard copy). Details of NIT & Tender Documents are available on our website – <http://www.cspc.co.in> & <http://ebidding.cspcl.co.in:50724/irj/portal>. The bidder may download the same from the above site. In e-bidding portal, tender documents will be displayed in online tender display at Technical RFx section.

Last date & time of submission of bid in hard copy and also in softcopy is **15.06.2020 upto 3.00 pm** and due date & time of opening of part –I and part-II of the tender. is **15.06.2020-at 3.30 pm.**

Important Instructions :-

1. Please note that this tender shall be processed online as well as offline. The bidder has to submit all the documents in hard copy as per tender specifications in four envelopes. Besides above, scanned copy of following documents are to be uploaded in e-bidding portal:-
 - (a) The scanned copy of DD for tender fee.
 - (b) The scanned copy of DD for EMD/ EMD exemption.
 - (c) Schedule V commercial information.
 - (d) Schedule VI (A) Schedule for commercial deviation.
 - (e) Schedule VI (B) Schedule for Technical deviation.

It may please be noted that only above mentioned documents are to be uploaded in e-bidding portal and no other document is required to be submitted in e-bidding portal. The bidder shall give reply to following questions regarding above documents in e-bidding portal:-

 - (i) Whether scanned copy of tender fee DD uploaded. Yes/No
 - (ii) Whether scanned copy of DD of EMD /EMD Exemption uploaded. Yes/No
2. It is not required to upload /attach scanned copy of price bid in Soft/ Hard copy. **Only the rates are to be filled in the item tab in e-bid in SAP SRM System (online e-tender).** Rates should be quoted online & in specified fields only. Once the rates are filled, the bidders may change their rates up to the due date and time of submission of tender. After due date and time, no change on any ground whatsoever will be accepted.
3. After scrutiny of techno-commercial bid, the price bid will be opened in e-bidding system only of eligible bidders for which suitable intimation will be given to the bidders offline & through email.
4. Please note that e-mail is always system generated, hence bidders are advised to regularly check their inbox/junk mail box.
5. CSPTCL shall not assume any responsibility for non-supporting of system, internet, line & associated hardware & software for bidding their tender. No extension in time shall be granted on such grounds. The bidder should submit their bid well before submission dead line to avoid any system related problem. It is strongly recommended not to wait for submission of bid in last minutes as internet/technical problem may disrupt their works.
6. Reference time for submission dead line shall be the time displayed in the portal and shall be treated as final.
7. After end of submission dead line, no alteration in the tender will be allowed by the system. However, in case of extension of due date of opening of tender, the bidders will be allowed to submit revised bid in the system.
8. CSPTCL will not accept incomplete bid.

9. The bidder must have a valid Digital Signature & SAP SRM User ID. User ID & Password from CSPTCL and Digital Signing Certificate and Digital Encryption Certificate from any recognized digital signature issuing authority are required for participation in any Tender. The bidder shall intimate in advance regarding details of digital signature issuing authority for ensuring the reliability of the same. For User ID and Password for participating in the tender, the bidder shall register on line through e-bidding portal.
10. The e-bidding vendor user manual displayed on website-<http://ebidding.cspcl.co.in:50724/irj/portal> for the help of the bidders. For any further queries the bidder may contact at Helpline no. 0771-2576672/73 (EITC, CSPDCL, Raipur)
11. The training for bidders will be on every Wednesday from 3.00 pm to 5.00 pm at office premises of Energy Info Tech Center (EITC) at Dangania, Raipur.
12. Tender shall be opened in the scheduled time as notified. If the due date of opening/submission of tender documents is declared a holiday by the Govt. or local administration, it will be automatically shifted to next working day for which no prior intimation shall be given. Tender opening shall be continued on subsequent days, in case the opening of all tenders is not completed on due date because of the technical constraints of system on the day of opening. It may be noted that the due date of opening/time may be altered/ extended if desired by CSPTCL without assigning any reason. However, intimation shall be available on company's tender portal/bidders email (if participation shown). The bidders are requested to keep track of the same.
13. Amendment in tender specification will be published on our website as well as in SRM system and the intimation regarding amendment in date extension will be conveyed through system generated e-mail to registered bidders only.
14. Before participating the bidder shall carefully read all the instructions and processes.
15. Tender duly completed in all respects will be accepted online up to due date & time and will be opened on the due date at specified time in the presence of tenderers or their authorized representatives. In case of authorized representative(s) they shall bring the original authorization letter with their signature attested by the tenderer.

Chief Engineer (S&P)
CSPTCL: RAIPUR

SECTION –I
SPECIAL INSTRUCTIONS TO BIDDERS

IMPORTANT: Except as otherwise provided in any subsequent modification/LOI/Order, the provision of this Section shall have effect notwithstanding anything inconsistent therewith contained in any other Schedule/Annexure/ Clause/ Terms/ Condition of this tender document)

e-Bidding & Due date: Please note that the Tender shall be processed through e-bidding. Instruction to Bidders for submission of Bids through SAP-SRM Module (e-Bidding) are detailed in **Instructions to bidders for submission of bid through SAP- SRM module (e-bidding)**

1. The bidders are requested to go through these instructions carefully and submit the tender in e -Bidding portal and also in hard copy accordingly.

Date of submission of tender is **15.06.2020 upto 3.00 PM** and tender will be opened on same day at 3.30 PM in the Office of CE (S&P), CSPTCL, Danganiya, Raipur, through E-bidding as per the guidelines .

The Chhattisgarh State Power Transmission Company Ltd., Raipur (or any authority designated) - hereinafter called 'OWNER' or 'CSPTCL' or 'Company' - will receive bids as per the accompanying specification. All bids shall be prepared and submitted in accordance with instructions, terms and conditions stipulated in the tender.

2. **Tender Fee:** - The tender document can also be downloaded from official website of the CSPTCL (www.cspc.co.in/csptcl). In case bidder chooses to submit his offer on downloaded tender document, they will be required to deposit specified tender fee (cost of tender documents- non refundable) in form of DD in favour of Manager (RAO:HQ), CSPTCL, Raipur payable at Raipur. The bank draft shall be issued from the nationalized/scheduled bank. **DD should be enclosed with the part I of the tender offer. In absence of tender fee, offer will not be considered for opening of price bid.**
3. **Earnest Money:**- The earnest Money in the instant tender is **Rs 71,000/-** (Rs Seveny One Thousand only) payable in the form of demand draft in favor of Manager (RAO : HQ), CSPTCL, Raipur.

The bidding is open to manufacturers only who can provide satisfactory evidence to substantiate this.

Goods & Service Tax:-The bidder should furnish valid GST registration number and certificate alongwith EMD. In absence of GST registration the offer shall not be accepted.

4. The bidding is open to manufacturers only who can provide satisfactory evidence to substantiate this.
5. **Qualifying Requirements:-** *The bidder is required to furnish Self attested (i.e. copy attested by authorized signatory of the tender) document proof for having acquired following Pre Qualifying Requirement (PQR) :-*

S N	PQR	Documents to be submitted by Bidder
	Technical qualifying requirement	

S N	PQR	Documents to be submitted by Bidder
1	<p>Supply experience:- The Bidder should be Indian manufacturer having manufacturing unit in India. The Bidder should have minimum experience of at least three years for manufacture & supply of respective (390KV, 220KV,132 KV & 33 KV) or higher voltage class Lightening Arrestor to following Indian entities:-</p> <p>i.) Power utilities owned and controlled by Central or State Govt., Or ii.) PSUs, Or iii.) Govt. Organizations’ as on date of NIT.</p>	<p>Self attested copies of following–</p> <p>i) In support of manufacturing unit, self attested valid NSIC/DIC (applicable for CG state SSI unit) certificate should be submitted. In case firm is not registered with NSIC/DIC, self attested copy of valid factory licence issued by industries department of State/Central Government for tendered items.</p> <p>ii) In support of supply, copies of purchase order (in the name of manufacturer) and relevant MRCs (Material Receipt Certificate) issued by entities mentioned in PQR point no.- A-1 will be submitted. The date of receipt mentioned in the MRC will be treated as actual date of supply. <i>The supply experience as on the date of issue of NIT will be counted from the aforesaid actual date of supply.</i> In case of non-availability of MRC, commissioning certificate /Performance certificate may also be treated as proof of actual supply provided it establishes the requirements as per PQR and is issued by an officer not below the rank of Executive Engineer/Manager of the entities mentioned in clause A-1 of the PQR. If the performance certificate indicates both proof of supply experience of 03 years or more separate MRC will not be required as a proof of supply. However, if only MRC is submitted as proof of supply, performance certificate will have to be submitted separately to establish minimum performance of three years as per PQR. All these documents should be attested by the authorized signatory of the tender.</p>
2	<p>Performance Certificate:- Self attested copy of certificate of satisfactory performance for minimum 02 years as on the date of NIT should be furnished for respective 390KV, 220KV,132 KV & 33 KV or higher voltage class Lightening Arrestor as on date of issue of NIT in the</p>	<p>(iii) <i>In support of satisfactory performance,</i> a self attested copy of performance certificate for successful operation of two years as on date of issue of NIT, certificate shall be issued by the entities mentioned in clause-1 of the PQR will be submitted for</p>

S N	PQR	Documents to be submitted by Bidder
	aforesaid entities. These LA should be in successful operation for minimum 2 years from date of commissioning as on date of issue of NIT in the aforesaid entities.	respective 390KV, 220KV,132 KV & 33 KV or higher voltage class Lightening Arrestor.
3	Type test Certificates:- The bidder should submit self attested copy of the type test certificates of tendered item/ materials as per relevant standards i.e. ISS/ IEC carried out at & issued by NABL accredited laboratory / International laboratories like KEMA or equivalent. The type test certificate of tendered item/ materials shall not be more than ten years old as on the date of issue of NIT. The makes/ models of Lightening Arrestor proposed to be offered by the bidder should be mentioned in the TC bid.	The bidder shall submit all valid type test certificate as per relevant standards i.e IS/ IEC of for 400KV, 220 KV, 132KV and 33 KV LA separately.
	Commercial qualifying requirement	
4	MAAT:- The bidder should have minimum average annual turn-over (MAAT) for best three years out of last five financial years (i.e. 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19) of Rs. 1.06 Crore. Duly certified by CA & Self attested copies of audited Balance Sheet, Annual Profit & Loss Statement and turnover of last five years is to be submitted. In case bidder is a holding company, MAAT shall be that of holding company only (i.e. excluding its subsidiary / group holding company only (i.e. excluding its subsidiary / group companies). In case bidder is a subsidiary of a holding company, the MAAT shall be of subsidiary company only (excluding its holding company).	Self attested copies of statement of annual turnover (as per annexure of the tender), audited balance sheets and profit & Loss statement should be furnished in support, duly certified by Chartered Accountant. The balance sheets furnished should be for last five financial years (i.e. 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19
5	Networth:- Net worth of bidder for last 3 financial year i.e. 2016-17, 2017-18 and 2018-19 should be positive .Net worth means the sum of total of the paid up of the capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated losses (including debit balance in profit and loss account for current year) and intangible assets.	i) Self attested copies of audited balance sheets and profit and loss statement for the last five years (i.e. 2016-17, 2017-18 & 2018-19. ii) A certificate (in original) issued by a C.A. certifying positive net worth for the last 03 financial years i.e. 2016-17, 2017-18 &

S N	PQR	Documents to be submitted by Bidder
		2018-19.
	Other Requirement	
6	<p>The bidder should not be debarred/black listed by Bank/State Govt./Central Govt./State PSU/CPSU/SEB/ Public utility as on the date of issue of NIT.</p> <p>However, the bid may not be considered for further processing in following cases also:</p> <p>i) If bidder is debarred/blacklisted by Bank/state Govt./Central Govt./State PSU/CPSU/SEB/public utility up to date of opening of price bid of the instant tender.</p> <p>ii) If a case comes to notice regarding submission of forged/fake document in any other tender under process in CSPTCL up to date of opening of price bid of the instant tender.</p>	<p>A declaration in this regard shall be furnished by the bidder.</p> <p><i>(Name of the bidder) M/s.....is not debarred/black listed by Bank/State Govt./CentralGovt./StatePSU/CPSU/SEB/ Public utility as on the date of issue of NIT.</i></p>
7	<p>Any sum of money due to CSPTCL on the date of opening of tender should have been paid/settled in full prior to the date of opening of tender. Price bids of bidders not complying with this requirement shall not be opened</p>	<p>A declaration in this regard shall be furnished by the bidder.</p>
8	<p>CA Certificate:- The bidder shall furnish self attested certificate issued by CA(in original).</p> <p>(a) Bidder should have discharged all its payment obligations (Principal/Interest) on outstanding debentures (i.e. debentures which have not yet been redeemed), if any, and no such payment as on 31.12.19 should be outstanding/overdue</p> <p>(b)Bidder should not be presently in default in payment of any bank loan or interest thereon for more than three months or any loan account of the bidder should not have been classified as NPA (Non performing Assets) by the creditor/lending bank, as on date of issue of NIT.</p>	<p>The bidder shall submit certificates (in original) issued by C.A. confirming fulfillment of criteria mentioned in the adjoining column.</p>
9	<p>All the documents/ statements/ Attachments /information submitted by the bidder in proof of the qualifying requirements must be authentic/genuine/correct and in case, any of the said</p>	<p>Self attested declaration shall be furnished by the bidder:-</p> <p><i>All the documents/ statements/ attachments/information submitted by</i></p>

S N	PQR	Documents to be submitted by Bidder
	documents/statements/attachments/information is found to be false /fake/misleading the bidder will be disqualified and action will be taken against the bidder as per relevant provision of the tender.	<i>(Name of the bidder) M/s..... in proof of the qualifying requirements are authentic/genuine/correct and in case, any of the said documents/statements/attachments/information is found to be false /fake/misleading the bid will be disqualified and action will be taken as per relevant provisions of the tender.</i>
1 0	The bidder shall have to submit pre-contract integrity pact in the format enclosed as Schedule X on non-judicial stamp paper worth Rs.250/- duly signed by the bidder along with the Techno-Commercial bid. The validity of this integrity pact shall be from the date of its signing and extended up to 2 years or the complete execution of the order to the satisfaction of both the Buyer and the Bidder/Seller, whichever is later. In case Bidder is unsuccessful, this Integrity Pact shall expire after six months from the date of its signing.	The bidder shall have to submit duly signed pre-contract integrity pact in the format enclosed as Schedule X on non-judicial stamp paper worth Rs.250/-.

6. The offered prices should be variable as per IEEMA price variation formula as per circular enclosed in Annexure-II of this specifications with base indices as issued by IEEMA in its circular one month prior to the due date of opening. In case of any extension of due date the base date for working out the price variation shall be as per the original due date only. If delivery of material get delayed beyond contractual delivery period, price variation claimed shall be governed as detailed in clause 4.3.1 of section-I of this specifications.
7. **It is not required to upload /attach scanned copy of price in soft/hard copy. Only the rates are to be filled in the item tab in e-bid in SAP SRM System (online e- bidding portal). The prices should be quoted through SAP SRM system should indicating unit ex-works price inclusive of packing & forwarding charges, GST, freight charges & any other charges should be quoted separately. The freight shall be on FIRM basis irrespective of whether the ex-works prices are firm or variable. The total F.O.R. destination price should be quoted in the relevant column.**
8. It will be presumed that the bidder has taken utmost care while quoting ex-works unit rates and tax rates in the price bid, which shall be considered as base for computation of total prices. However, in case of any arithmetical mistakes/errors in calculation for arriving at total FORD rate, arithmetic corrections shall be made as per the quoted basic rate/ tax rate for the purpose of computation to decide the relative position of bidder. However, for placement of order lower of the two values will be considered.
9. The tender offers of those Bidders, who do not agree to CSPTCL's payments terms, security deposit clause, penalty clause, performance guarantee clause shall be liable for rejection.
10. A certified copy of valid ISI license/ marking sight duly self attested may be submitted along with the offer. The license should be valid on the due date of opening of tender.

11. The tender document shall be available for sale in the Office of CE (S&P) CSPTCL on payment of the cost of tender document through demand draft / cash payment on all working days up to one day prior to the due date of opening. The tender document shall also be displayed in CSPTCL's website i.e. www.cseb.gov.in and bidders may download the tender from the website directly. In such case, the payment of cost of tender document shall be made through demand draft along with the tender. The details are given in clause No. 5 of Section-I (General Instruction to bidders).
12. The Company reserves the right to reject any or all tenders or accept any tender in full or part, considered advantageous to the C.S. Power Transmission Co. Ltd., whether, it is lowest or not without assigning any reason whatsoever.
13. **The bidder should ensure following points in order to avoid rejection of tender:-**
 - i) DD towards EMD **OR** proof of exemption valid on due date of opening duly self attested is to be submitted in envelope –I. Please note that in case of exemption claimed from EMD by the SSI units registered under NSIC/ DIC, the copy of certificate issued by concerned authority along with enclosures, in which name of materials for which certificate has been issued should also be furnished. The name of material under tender should appear in this list. Further, the copy of certificate (each page) should bear original signature & seal of the Notary. In case of non compliance of above instructions, tender shall be liable for rejection. **The bidder should furnish valid GST registration number and certificate along with EMD. In absence of GST registration the offer shall not be accepted.**
 - ii) DD toward tender document cost, in case tender has been downloaded from our website, is also to be placed inside envelope-I. In case of non compliance of above instructions tender shall be liable for rejection.
 - iii) Techno-Commercial Bid are to be submitted inside envelope II.
14. **INTEGRITY PACT :-** The bidder shall have to submit pre-contract integrity pact in the format enclosed as **Annexure-II** on non-judicial stamp paper worth Rs. 250/- duly signed by the bidder along with the Techno-Commercial bid.
15. **'EXTREMELY IMPORTANT'- Bidders to note this to avoid rejection-**
 - i) **Attention of bidder is drawn to the fact that no additional/new documents will be allowed to be submitted after bid submission with only exception that clarifications/confirmations on the points which lack clarity after techno-commercial evaluation may be obtained. Bidders are therefore, requested to exercise utmost care to make sure that all the documents required as per eligibility criteria/PQR/techno-commercial requirements of the tender are submitted with their bid on or before the date of bid submission. The bid submission date is a cut-off date for submission of all the documents required as per tender conditions/requirements and the bidder must adhere to this deadline.**
 - ii) **It may also be noted that if a bidder has quoted 'NIL' deviation in the bid, this will have an overriding effect on any other conditions noted as deviations elsewhere in the bid and no correspondence will be made to withdraw such specific contradictory conditions".**

GENERAL INSTRUCTIONS TO BIDDERS**1. Scope :**

The tender specifications shall cover supply of tendered items as per the technical specifications mentioned in Section-II of the tender document.

2.1 ACCEPTANCE OF OFFERS:-

While the Bidders may make all out efforts to offer for the complete scope of tender, they may please note that the CSPTCL reserves the right to split the tender into different lots towards supply.

Bidders are advised to go through the contents of specific requirement for standard conditions very carefully and in absence of non-compliance/lapse, responsibility for the same will rest on Bidders.

2.2 CRITERIA FOR PLACEMENT OF ORDER: -

The entire tendered quantity will be offered to respective L-1 bidder for each type of Lightning Arrestor. The following points will also be considered for placing the orders:-

- (i) The competitive rates quoted by each Bidder: - The original ranking based on FOR destination rates offered.
- (ii) If L-1 rate is not considered to be reasonable, negotiation will be held with the L-1 bidder only.

3. Bidders are requested to go through our Technical requirement carefully and it may be noted that furnishing of all information as required in various schedules enclosed is a must. In case any of the schedule, duly filled in, is not found furnished as required in the Schedules/Annexure the tender will be treated as incomplete, and will be liable for rejection without any correspondence by the CSPTCL.**3.1 Extension order:** The CSPTCL reserves the right to place extension order for supply of 50% additional quantity of material/equipments with associated accessories within six months from date of order and accordingly offered prices should be taken into account for these requirements.

For procurement of singular quantity of material/equipments the extension order clause shall be applicable for 100% additional quantity.

3.2 Price reduction clause: In case a fresh tender is issued for the same item before completion of supply against extension order and lower rates are received in the fresh tender. The lower rates received in the fresh tender shall be applicable to the quantity of extension order balance to be supplied also.**4. OFFERS:-** The offer for equipments/materials is required to be submitted in duplicate in separate sealed envelopes for which following details may be noted:-**4.1 Part-I: EARNEST MONEY DEPOSIT:**

Please note that techno-commercial bid of tender will not be opened if earnest money is not deposited in form of demand draft for the value mentioned in tender clause No. 3 of "SPECIAL INSTRUCTIONS TO BIDDERS" in the tender, unless exempted by the CSPTCL.

The following are exempted from payment of EMD:-

- i) SSI units of Chhattisgarh state permanently registered with DIC. The registration should be permanent & should be specifically for the items quoted in the tender & valid on the date of opening of tender. Copy of certificate duly self attested should be submitted.
- ii) Small scale units registered with NSIC: - In case of small scale units registered with NSIC, their registration certificates should be valid for the item under tender on due date of opening of Techno-commercial bid. In case the certificate is not valid on due date of opening the tender shall be liable for rejection. *Incomplete certificate should not be submitted. The list of items for which certificate is valid should also be furnished and name of item under tender should appear in this list failing which tender shall be liable for rejection.*
- iii) Fully owned State Govt /Central Govt. units, if 100% shares are held by the state Govt. concerned for which documentary evidence duly notarised must be furnished with offer.
- iv) Self attested copy of the NSIC/ SSI registration certificate for the tendered item duly notarised by a notary should be furnished with the offer. In case of un notarised copy, the original certificate should be produced at the time of opening for verification failing which their offer will be liable for rejection.
- v) **It has been noticed that some bidders submit photocopy of certificate. This is not acceptable. The photocopy of valid NSIC certificate should be self attested (i.e copies attested by authorized signatory of the tender) failing which tender shall be liable for rejection.**
- vi) The Bidders who come under any of above category must produce documentary evidence failing which offer shall be rejected.
- vii) The bidder should furnish valid GST registration number and certificate along with EMD. In absence of GST registration the offer shall not be accepted.

In case the bidder withdraws his offer during the validity period or after placement of order, the Earnest Money shall be forfeited. EMD of unsuccessful bidders shall be returned on placement of order. EMD of bidder on whom order is placed shall be returned on acceptance of security deposit. No interest shall be paid on the EMD amount.

4.2 Part - II (A):- TECHNICAL BID:

- 4.2.1 In this part of bid, Bidder will have to furnish confirmation in regard to all our Technical requirements. The bid should clearly describe various technical particulars, as per details given in this specification. Also along with above information all details required in various schedules should be furnished so that the purchaser may be able to examine whether the offer submitted is technically acceptable or not. All relevant technical schedules viz. Guaranteed Technical Particulars, technical deviation etc shall be submitted with the bid.

The bidder shall have to submit pre-contract integrity pact in the format enclosed as Annexure-I on non-judicial stamp paper worth Rs. 250/- duly signed by the bidder along with the Techno-Commercial bid.

4.2.2 COMPLETENESS OF EQUIPMENT AND BOUGHT OUT ITEMS: -

The Bidders must furnish the following information along with technical bid.

- i) The responsibility for obtaining timely supplies of bought out items will rest on the Bidder and only on this basis, delivery period will be offered in the tender.
- ii) It may be noted in the case of damages/shortages due to improper packing or any other negligence, replacement shall be arranged within one month's time. If this is

not done, date of delivery of such accessory will be treated as date of delivery of main equipment and full penalty shall be recoverable from the Bidder on total cost of the material.

- iii) For bought out items, responsibility for guarantee and obtaining immediate replacement in case any defects are noticed and in case defective supply of any item is reported will rest on the Bidder.
- iv) In case for attending to defect in any equipment or inspection/replacement of the equipment, which may be bought out item for the Bidder; services of engineer of original manufacturer is required, the same will be organised on immediate basis by the Bidder at his cost.

4.2.3 It would be obligatory on the part of Bidder to enclose a schedule of Technical deviation in Schedule VI-B in case there are any deviations from our technical requirement. **Even if no deviations are involved, a separate schedule of deviation for technical particulars should be enclosed wherein a certificate may be recorded that there are no deviations from all our technical requirements.** In the event of non-compliance of this instruction, it may be noted that the CSPTCL reserves the right to reject all such offers without assigning any reason or without making any correspondence for obtaining any clarification.

4.3 Part - II (B) COMMERCIAL BID:

This bid should clearly spell confirmation in regard to various commercial terms and conditions for supply. Basis of price, acceptance of various important terms and conditions for supply and questionnaire for commercial terms and conditions for supply duly filled in, will form part of commercial bid. All commercial schedules viz. commercial terms & conditions, commercial deviations, bidders experience, details plan of manufacturing & testing shall be furnished with this bid.

Un-priced bid in prescribed format shall be submitted along with TC bid.

It may please be noted that it is obligatory on the part of Bidder to comply with all our commercial terms and conditions. In particular, specific confirmation towards acceptance of following commercial terms and conditions should be furnished in the tender.

4.3.1 PRICES & TAXES:

The prices offered should be valid for 180 days from due date of tender in Indian Rupees only. Quoted prices for Lightning Arrester should be variable as per IEEMA formula indicated in Annexure-II with base indices as issued by IEEMA in its circular one month prior to the due date of opening. In case of any extension of due date the base date for working out the price variation shall be as per the original due date only and the validity of offer shall be counted from the extended due date on which TC bid has been opened. The payment shall be initially done on the basis of base rates offered by the bidder subject to price adjustment to reflect changes in cost.

It is not required to upload /attach scanned copy of price in soft copy. Only the rates are to be filled in the item tab in e-bid in SAP SRM System (online e- bidding portal). The prices should be quoted through SAP SRM system should indicating unit ex-works price inclusive of packing & forwarding charges, GST, freight charges & any other charges should be quoted separately. The freight shall be on FIRM basis irrespective of whether the ex-works prices are firm or variable. It may please be noted that only statutory variations due to Govt. Regulation in the rate of GST shall be permitted by CSPTCL only within contractual delivery schedule. In case supplies against the contract are affected late i.e. beyond contractual delivery period and rate of GST undergoes upward revision the payment will continue to be made only on the basis of rates prevailing during the contractual delivery period. However, in case the rate of statutory levies undergoes

downwards revision than the delayed supplies beyond contractual delivery period will attract reduced rate of levies/ GST.

The price adjustment shall be invoked by either party subject to the following conditions:

- (i) For calculation of price adjustment date on which the equipment is notified to be ready for inspection at the works of the manufacturer shall be taken as date of delivery provided the material is passed in the inspection and material is received in CSPTCL's Area Stores within 21 days from date of issue of dispatch instructions failing which actual date of receipt of materials shall be treated as date of delivery.
- (ii) In case of delay in supply beyond contractual delivery, price variation up to scheduled delivery date or actual date of delivery, whichever is advantageous to CSPTCL, shall be considered.
- (iii) The bidder shall submit price adjustment invoices for supplies positively within three months from date of supply whether positive or negative. **However, price variation bills submitted after 06 months from the date of supply will not be entertained, but negative variation will be recoverable.** The invoices should be supported with calculation of price variation along with documentary evidence of applicable indices. If price adjustment works out to be positive, the same is payable to contractor by CSPTCL and if it works out to be negative, the same shall be recovered from the contractor. The price variation bills should be submitted to Manager (Bills) O/o ED (Fin.), CSPTCL, Raipur.
- (iv) In case subsequent to issue of this tender IEEMA notifies either modification in Prevailing formula or new formula the same shall be applicable.

4.3.2 **TERMS OF PAYMENT:**

100% payment along with all taxes and duties shall be made on production of necessary documents along with material receipt certificate (MRC) from our consignee normally within 30 days time.

The supplier should submit original Material Receipt Certificate issued by the Area Stores along with copies of bill and other necessary documents to Manager (Bills), O/o E.D. (Fin.) CSPTCL, Raipur for arranging payment.

4.3.3 **DELIVERY PERIOD:**

100% quantity should be supplied within **03 months** from the date of issue of purchase order.

The time for and date of delivery of the stores stipulated in the order shall be deemed to be the essence of the contract. In case of delay in execution of the order, the CSPTCL shall either:-

- (i) Recover from the supplier as agreed Penalty/liquidated damages at the rate mentioned in "Penalty" clause.
- (ii) Purchase elsewhere on account and at the risk of the supplier, the stores not delivered or other of similar description or;
- (iii) Cancel the contract.

4.3.4 **PENALTY:**

The time for and the date of delivery of the material stipulated in the order shall be deemed the essence of the contract. In case of delay in execution or non-execution of the order, the CSPTCL at its option shall recover from the supplier/contractor as agreed towards

liquidated damages a sum of ½ % of the total price of any stores not delivered per week or part thereof up to a maximum of 10%.

For this purpose date of offer (**date of readiness of material for inspection shall be treated as date of offer**) for inspection of material in the O/o CE (S&P), CSPTCL shall be considered as the date of delivery subject to condition that:-

- i) The intimation of readiness of material in respect of each lot should be made atleast 15 days in advance from the scheduled date of completion of supply.
- ii) Material should be delivered at stores within 21 days from issue of dispatch clearance. Please note that in case material is not received within 21 days from date of issue of dispatch instructions even though the delivery period exists penalty shall be imposed on delay of dispatch.

The inspection offer, apart from postal/courier service shall be invariably **Faxed/E-mailed** to the CE (S&P), CSPTCL so that ambiguity does not arises for date of offer. In case the inspection offer is not received in the O/o CE (S&P), CSPTCL through Fax/E-mail the date of receipt of offer letter shall be taken as date of offer for inspection

4.3.5 **GUARANTEE PERIOD:**

Equipments offered and associated accessories covered under the tender shall be guaranteed for performance and quality for a period of 30 months from the date of supply in Store or 24 months from date of commissioning whichever is earlier.

In case any defect in the equipment/material is found within guarantee period, the same will be replaced/repared by you on free of cost basis. The replacement/repairing will have to be organized by you expeditiously and in any case within one month's time.

If for the purpose of replacement/repairs, the equipment/material is required to be dispatched to your works, all charges towards transportation/insurance/ packing/ forwarding will have to be paid by you for to and fro dispatches. In this connection, please note that the following additional conditions will also be applicable in case any damages/defects are noticed in the equipments or its accessories supplied by you.

- (i) If the material develops defect within guarantee period after installation at site, for the purpose of replacement/repairs & if the same is dismantled and taken out by us. In such cases actual cost of dismantling and replacement of the equipment/material will also be recoverable from you.
- (ii) In case it is observed that replacement/repairs of equipments or its accessories is not being provided to us within one month time from date of report of defect to you and proper response is not received from you, then apart from operating clause of penalty (which provides for imposition of penalty/liquidated damages, risk purchase at your cost and cancellation of contract) the CSPTCL may also take suitable penal action against you which may include debarring you from all future business with the CSPTCL for a period which will be at the discretion of the CSPTCL.
- (iii) In case of replacement of material due to failure within guarantee period, the guarantee shall automatically get extended. In such case, the material shall be guaranteed as per the terms of guarantee with the commencement date of guarantee from the date on which replaced material has been received.

4.3.6 **SECURITY DEPOSIT:**

The supplier has to submit the security deposit in form of cash / Demand Draft / Bank Guarantee for value of order as indicated below to cover performance guarantee period for supply of equipments covered in this specification.

- (i) All the outside state units shall be required to pay security deposit @10% of order value.

- (ii) The SSI units of CG having annual business (**FY 2018-19**) with successor Companies of CSEB above Rs.50.00 Lacs, shall be required to pay Security deposit @7.5% of the value of order.
- (iii) In case of SSI units of CG whose annual business (**FY 2018-19**) with successor Companies of CSEB is up to Rs.50.00 Lacs, they will be required to pay Security deposit @ 5% of the value of order subject to maximum of Rs.20,000/- (Twenty Thousand Only).

In support of annual business of SSI units of CG with successor companies of CSEB, the certificate of Chartered Accountant duly self attested should be furnished. **The bank guarantee shall be submitted within 30 days from date of order and shall be kept valid for guarantee period exceeding claim period of 06 months.** The bank guarantee shall be submitted on stamp paper worth Rs. 250/- or as per the prevailing legal requirements/ any other amount as per the C.G. State Stamp Duty Act and shall be from a Nationalized/ Scheduled Bank in the prescribed form of CSPTCL. No interest shall be paid by CSPTCL on the security deposit. In case of non-fulfillment of contractual obligations by the supplier the security deposit shall be forfeited

4.3.7 TRANSIT INSURANCE & RISK:-

- a) Responsibility regarding covering of risk, during transit of material shall entirely be on the supplier. The CSPTCL, shall in any case, not bear the transit risk/transit insurance charges.
- b) Transit damages/ shortages/ losses shall be reported by the consignees within 30 days from the receipt of the consignments. Such damages/shortages/losses shall be repaired /replaced by the suppliers, free of cost within one month from the date of intimation by the consignee without waiting for the settlement from carrier or insurance company etc. If the supplier fails to do so the consignee(s) shall be free to get the repair work done fro other sources and they shall be free to recover the cost of such material/ expenses of repairs either from the supplier/balance bills or from the security deposit as deemed fit.
- c) While the necessary assistance shall be rendered by the consignee in lodging and processing the claims with carriers and the supplier's insurance underwriters, the responsibility shall rest with the supplier to immediately make good the shortages/ losses/ damages, without extra cost and without waiting for the settlement of the claim.
- d) Replacement of goods lost/ broken or damaged including loss to fire:- Notwithstanding anything herein contained, the supplier shall undertake responsibility for the safe arrival of the material in good condition and without any loss or damage at the final destination and until the same is actually delivered to / received by the CSPTCL at its stores or other places of final destination. For this purpose, material carried by Railway or Road transport or other carriers shall be deemed to be so carried at the risk of the suppliers. In the case of transport damages/shortages, the payment shall be made only for the quantity received in good and working condition and consignee shall lodge claim with the supplier/carrier with necessary documents of the same with carriers at supplier's end.

4.3.8 DEVIATIONS:-

It would be obligatory on the part of the Bidder to enclose a separate schedule of deviation, if there are any deviations from our commercial terms/conditions. Even if no deviations are involved, **a separate schedule of deviation for commercial conditions should be enclosed wherein a certificate may be recorded that there are no deviations from all**

our commercial conditions. All tenders, wherein these conditions are not complied with, may run the risk of rejection without any correspondence from our side.

- 4.3.9 **UNSATISFACTORY PERFORMANCE:** The bidder who has supplied material earlier in CSPTCL and which has been found to be defective / not rendering satisfactory service within guarantee period and has not been replaced in the stipulated period shall not be considered for opening of price bid. (The cases reported as on date of NIT shall be considered).

In addition to the above, the bidders who have supplied material to CSPTCL and if any adverse reports regarding higher rate of failure, poor performance of equipment or defective supply reported from field, the price bid of such bidders shall not be considered for opening. (The cases reported as on date of NIT shall be considered).

- 4.4 **Part - III PRICE BID:- It is not required to upload /attach scanned copy of price in soft /hard copy. Only the rates are to be filled in the item tab in e-bid in SAP SRM System (online e- bidding portal).** The prices should be quoted through SAP SRM system should indicating unit ex-works price inclusive of packing & forwarding charges, GST, freight charges & any other charges should be quoted separately. However, the delivery schedule offered by bidder should be indicated in Part - III "Commercial Bid". In case of any discrepancy is found suitable loading on prices will be considered for which responsibility will rest on the Bidder.

5. **SUBMISSION OF OFFERS:-** The Bidders should submit their bids in three envelopes as under:-

- (i) **Envelope - I :-** (To contain Part-I of the tender document)
This envelope should contain a covering letter with earnest money or earnest money exemption certificate as detailed in clause (4.1). The cover of the envelope should be suitably super scribed with the details of earnest money and tender number. The envelope should be sealed properly. **The bidder should furnish valid GST registration number & certificate alongwith EMD. In absence of GST registration the offer shall not be accepted.**

In case the tender document is downloaded from CSPTCL's Website the required cost of tender document in the form of MICR DD drawn in favour of Manager (RAO-HQ), CSPTCL, Raipur should also be kept inside this Envelope.

Please note that the tender shall be liable for rejection if

- i) EMD as per tender specification / proof in support of exemption of EMD as per clause 4.1 is not found inside the envelope.
and
ii) In case DD towards tender cost is not found inside this envelope in case tender document is downloaded from website.
- (ii) **Envelope - II :-** (To contain Part-II of the tender document) This envelope should contain the Technical Bid and commercial bid complete in all respects along with **un-priced** bid, in duplicate & Integrity pact as per proforma in Annexure -II.
- (iii) **Envelope - III:-** This large envelope should contain all the above two envelopes. A certificate in the following format should be recorded on main envelope itself.

**TENDER SPECIFICATION No.TR-19/S&P/48 DUE FOR OPENING ON DTD.
15.06.2020 FOR SUPPLY OF LIGHTNING ARRESTER**

THIS ENVELOPE CONTAINS TWO ENVELOPES FOR:-

1. Envelop-I- Part – I of tender document i.e. Earnest Money Deposit , **GST registration certificate** & cost of tender document, if downloaded.
2. Envelop-II- Part – II (A) i.e. Technical bid , Part– II (B) i.e. Commercial Bid & Integrity pact as per proforma in Annexure –II

**To,
The Chief Engineer (Store & Purchase),
C.S. Power Transmission Co. Ltd.,
Danganiya, RAIPUR (C.G.) 492 013**

IT IS CERTIFIED THAT WE AGREE TO THE FOLLOWING CLAUSES OF TENDER SPECIFICATION:-

1	PAYMENT TERMS	AGREED
2	SECURITY DEPOSIT	AGREED
3	PENALTY	AGREED
4	PERFORMANCE GUARANTEE & INTEGRITY PACT	AGREED
5	TECHNICAL SPECIFICATION	IT IS CERTIFIED THAT THE MATERIAL OFFERED BY US IS STRICTLY AS PER TECHNICAL SPECIFICATION AS STIPULATED IN THIS TENDER AND IN CASE ANY DEVIATION IS OBSERVED LATER ON, WE SHALL BE SOLELY RESPONSIBLE AND THAT OUR TENDER SHALL BE LIABLE FOR REJECTION.

Sign & Seal of Bidder

Tenders being submitted must be signed by a person holding a power of attorney authorising him to do so. **The self attested copy of power of attorney should be furnished.** Tenders submitted on behalf of company registered under Indian Companies Act shall be signed by persons duly authorised to submit the tender on behalf of the company and shall be accompanied by notarised copy of resolution / abstract of Article of Association/ special or general power of attorney.

6. OPENING OF TENDERS:-

Part - I i.e. The envelop for tender cost, Earnest Money & GST registration certificate shall be first opened on the due date & time. Part-II i.e. “Technical & Commercial Bid” will be opened thereafter on the same day in respect of the bidders **whose GST registration certificate is attached, EMD are found to be as per tender specification and tender cost is found to be as per tender** .These bids will be scrutinized and then we will take decision regarding opening of Part - III price bid in respect of successful Bidders. For the purpose of opening of price bid, a notice of not less than 7 days shall be given to the Bidders so that they may depute their representative for attending price bid opening. It may be mentioned that period of 7 days will be counted from the date of issue of fax intimation by us. Such intimation shall be given within a reasonable period from the date of opening of commercial and technical bids, and after its scrutiny. **Only authorized representatives**

possessing necessary authority letter from the Bidder shall be allowed to participate in the tender.

7. COMPLIANCE WITH OTHER CONDITIONS :-

Although all other conditions have clearly been spelt out in the tender document, it is once again brought to the notice of Bidder that they should go through our tender document carefully and comply all other conditions also, like furnishing of type test report, furnishing of list of past supplies, performance certificate, profit and loss account, balance sheet for last five years etc., furnishing of drawing and write up for the manufacturing process. In the nut shell, the offer at the time of submission of Technical and Commercial bid itself should be complete in all respects. It should not be expected that in case of lack of any information, the CSPTCL will make any correspondence with the Bidder. The documents and details as called for in the tender must be submitted without making any reference to submission of such certificate against past order, tender or past experience of supplies with the Board/CSPTCL etc. All tenders wherein these conditions are not complied with may run the risk of rejection without correspondence from our side.

8. CHANGE OF QUANTITY:-

The purchaser reserves the right to vary the quantities of any or all the items as specified in the technical specifications/schedules as may be necessary based on requirement. No correspondence shall be entered into regarding quantity variation.

9. INSPECTION:-

- a) The CSPTCL shall have access at all times to the works and all other places of manufacture where the equipments are being manufactured and the supplier shall provide all facilities for unrestricted inspection of the suppliers works, raw material, manufacture of all the accessories and for conducting necessary tests as detailed herein.
- b) The successful supplier shall keep the purchaser informed in advance of the time of starting and of the progress of manufacture of equipment in various stages so that arrangements could be made for inspection.
- c) No material shall be dispatched from its point of manufacture unless the material has been satisfactorily inspected and tested by the CSPTCL's representative.
- d) The acceptance of any quantity of equipment shall in no way relieve the successful supplier from 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.
- e) The readiness of material for inspection should be intimated to O/o the CE (S&P), CSPTCL at least 15 days in advance so that Inspector can be deputed on scheduled date. In case material is not found ready on the intimated date of readiness, the CSPTCL reserves the right to recover from the supplier the charges.
- f) **Random testing:**
 - a) The CSPTCL's authorized Inspector shall test the samples selected at random from the material offered for inspection and tests as per relevant ISS/IEC standards shall be conducted at their works on the randomly selected samples. In case, the samples fail to withstand the required tests, the entire lot will be liable for rejection .
 - b) However, inspection of material before dispatch or waiver of inspection will not relieve the supplier from his responsibility to supply the material strictly in accordance with the tender specification.
 - c) If required, the Company may at its option test the samples selected at random from the supplies affected and/or may get the selected samples tested for acceptance /

type test as per relevant ISS and Technical specifications at any standard laboratories as deemed fit e.g. CPRI, ERDA etc.

- i) If the sample passes the test, charges towards testing & transportation shall be borne by CSPTCL & the lot shall be accepted.
- ii) In case, the samples fail the required tests, supplier will be required to bear all the charges including transportation and taxes etc paid to standard laboratories e.g. CPRI, ERDA etc. towards conducting the tests and the entire lot will be liable for rejection. The supplier will have to replace/repair the whole rejected lot at his own cost.
- iii) The replaced material, at CSPTCL's option shall be tested for acceptance tests in the Govt. standard laboratory as deemed fit on terms & conditions similar to first testing. If the sample passes the required test, the lot shall be accepted. The charges required for getting the tests conducted shall be borne by CSPTCL. If the sample again fails, the lot shall be rejected & the charges required for getting the tests conducted shall be borne by the supplier and action as per provision of contract shall be taken.

- g) **Stage inspection:-**The CSPTCL reserves the right to carryout stage inspection during manufacture. The inspection will include verification of all raw materials, construction practice, quality control process and inspection of equipment before final assembly. Bidders will have to confirm that they will render all assistance for this purpose.

10. FALSE INSPECTION CALL:

In case, the material is not offered for inspection on the date of inspection offered by the firm, due to any reason the firm shall be required to remit a sum of Rs.5,000/- or actual expenditure incurred in the visit of the inspector whichever is more.

11. QUALITY ASSURANCE PLAN:

The supplier shall invariably furnish following information along with his offer, failing which the offer shall be liable for rejection. Information shall be separately given for individual type of equipment offered.

- (a) Statements giving list of important raw materials, name of sub-suppliers for the raw material, list of standards according to which the raw material are tested, list of tests normally carried out on raw material in presence of suppliers representative, copies of test certificates.
- (b) Information and copies of test certificates as in (a) above in respect of bought out items.
- (c) List of manufacturing facilities available.
- (d) Level of automation achieved and list of areas where manual processing exists.
- (e) List of areas in manufacturing process where stage inspections are normally carried out for quality control and details of such tests and inspections.
- (f) Special features provided in the equipment to make it maintenance free.
- (g) List of testing equipment available with the supplier for final testing of equipment specified and test plan limitation, if any, vis-à-vis the type/ special acceptance and routine test specified in the relevant standards. These limitations shall be very clearly brought out in schedule of deviations from specified test requirements.

12. TEST CERTIFICATE:-

Self attested copies of type test certificate from Govt. standard test laboratory/ NABL accredited laboratory / International laboratories like KEMA or equivalent shall be submitted along with the tender failing which the tender will be liable for rejection. The type test certificate of tendered item material shall not be more than 10 years old from date of NIT. Without required type test certificate the offer shall be liable for rejection.

13. POOL RATE/CARTEL:

Formation of bidder's cartel is strictly prohibited. "Cartel" includes an association of sellers, distributors, traders or service providers who by agreement amongst themselves, limit, control or attempt to control the production, distribution, sale or price of or trade in goods or provision of services, Here, "agreement" includes any arrangement or understanding or action, whether or not is formal or in writing.

Quoting same rates i.e. pool rate is not acceptable. In case the same rate is found to be quoted by more than two bidders, offers of all such bidders shall be out rightly rejected. However, if rates of two bidders are found to be same, quantity of orders to be placed on them will be reduced to half of the quantity a bidder is entitled to be allocated by virtue of their common rank. But, in case of multi-item tender, if rates of even two bidders for more than one item are found to be same, it will be considered as deliberate cartel and offers of both the bidders shall be rejected. Accordingly, all the bidders are advised to quote their own individual and most competitive rates.

Rated received in a tender will be minutely scrutinised to find out as to whether some or all bidders have entered in to any such "agreement". If CSPTCL is satisfied with the conclusion that some or all the bidders have formed a cartel, offers of all such bidders shall be rejected.

14. **Amendment in specifications:** CSPTCL may revise or amend the specification and drawing, prior to the date notified for opening of tender. Such revision/ amendment, if any, will be communicated to all the bidders as amendment/ addendum to the invitation of tender and the same will be displayed in CSPTCL's website also.
15. **Telex/ telegraphic/ fax bids:** Telex/ telegraphic/ fax offers will not be considered under any circumstances.
16. **Mistakes in bids:** Rates shall be quoted in price tab in E bidding SAP SRM portal only. No hard copy is required.
17. **Lump sum based bids:** In case prices for some items or all items are given as lump sum, instead of unit prices as required in the tender specifications, CSPTCL can summarily reject such incomplete tender.
18. **Printed terms & conditions in bids:** Supplier's printed terms and conditions will not be considered as forming part tender under any circumstance whatsoever.
19. **Alterations/ correction in bids:** No alternations in the tender document will be permitted.
20. **Incomplete bids:** Tender which is incomplete or obscure is liable for rejection.
21. **Ambiguities in conditions of bids:** In case of ambiguous or self contradictory terms/ conditions mentioned in the bid, interpretations as may be advantageous to the CSPTCL may be taken without any reference to the tender.
22. **Disqualification of bids:** A bid which gets opened before the due date as a result of improper or no indication has been given on the cover to indicate that it is a tender, will be disqualified. Bidders will not be permitted to change the substance of his tender on post interpretation/ improper understanding grounds. This includes post tender price changes/

- modifications etc. after opening of price bid. In such events, otherwise, that is, when a bidder does not comply, tender will be rejected.
23. **Language of bids:** All tenders should be made either in English or in Hindi only.
24. **Canvassing of bids:** Tenders shall be deemed to be under consideration, after opening of tender/ bid till placement of order. During this period, the bidders or their authorised representatives or other interested parties are advised strongly in their own interest, to refrain from contacting by any means any of the CSPTCL's personnel or representative.
25. **Cancellation of order:**
- 25.1 The company may upon written notice of default, terminate contract in the circumstances detailed here under:
- a) If in the opinion of the Company, the supplier fails to deliver the material within the time specified or during the period for which extension has been granted by the Company.
 - b) If in the opinion of the Company, the supplier fails to comply with any of the other provisions of this contract or material is found not in accordance with prescribed specifications and or the approved samples.
 - c) If as a result of stage inspection, it is revealed that material and / or workmanship is substandard, which is likely to affect the performance of the finished product, a notice would be served by the Company to the supplier to suspend further activities and to take urgent steps towards corrective measures, failing which the entire order would be cancelled.
- 25.2 In the event of such termination, the CSPTCL shall exercise its discretionary power as:
- (a) To recover from the supplier the agreed liquidated damages as given in the clause No. 4.3.4 above.
 - or
 - (b) To purchase form elsewhere after giving due notice to the supplier on account and at the risk of the supplier such stores/ material not so delivered or others of similar description in respect of consignment not yet delivered.
 - or
 - (c) To cancel the contract reserving Company right to recover damages.
- 25.3 Notwithstanding that the power under clause (25.2 a, b & c) referred to above, are in addition to the rights and remedy available to the Company under the general law of India relating to contract.
- 25.4 In the event of risk purchase of stores of similar description, the opinion of the Company shall be final. In the event of action taken under clause 25.2 (a) or (b) above, the supplier shall be liable to pay for any loss, which the Company may sustain on that account but the supplier shall not be entitled to any saving on such purchases made against the default.
- 25.5 The decision of the CSPTCL shall be final regarding the acceptability of the stores supplied by the supplier and the Company shall not be required to give any reasons in writing or otherwise at any time for the rejection of the stores/ material.
- 25.6 In the event Company does not terminate the order as provided in clause 25.1 & 25.2 above, the supplier shall continue execution of this order, in which case he shall be liable to the CSPTCL for liquidated damages for the delay as per clause 4.3.4 until supplies are accepted.
- 26. Arbitration:**
If at any time, any question, dispute or difference, whatsoever shall arise between the Purchase and the supplier, upon or in relation to or in connection with the Contract, either party may forth with give to the other, notice in writing of the existence of such question,

dispute or difference and the same shall be referred to the adjudication of two arbitrators, one to be nominated by the Purchase and the other to be nominated by the supplier or in the case of said arbitrators not agreeing, then to the adjudication of the Umpire to be appointed by the arbitrators, whose decision shall be final and binding on the parties and the provisions of the Indian Arbitration Reconciliation Act 1996, and of the rules there under and any statutory modification thereof shall be deemed to apply. The arbitrators or the Umpire, as the case may be, are bound to give a detailed speaking award assigning reasons for the findings.

Supplies under the contract shall be continued by the Contractor during the arbitration proceedings, unless otherwise, directed in writing by the Purchase or unless the matter is such that the work cannot possibly be continued until the decision of the arbitrators or of the Umpire, as the case may be is issued.

27. **Jurisdiction:** Any dispute or difference, arising under, out of or about this tender/ contract order shall be subject to exclusive jurisdiction of competent court at Raipur only.
28. **Approval of Drawing:-** The drawings of the ordered material should be submitted to this office within 10 days from the date of order for approval.
29. **Limitation of Liability:-** Except in cases of gross negligence or wilful misconduct,
 - a) The bidder and CSPTCL shall not be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the contractor to pay liquidated damages to the CSPTCL

AND

 - b) The aggregate liability of the contractor to CSPTCL, whether under the contract, in tort or otherwise, shall not exceed the total contract price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipments, or to any obligation of the contractor to indemnify CSPTCL with respect to patent infringement.

**Chief Engineer (S&P)
CSPTCL: Raipur**

SECTION-II(A)

TECHNICAL SPECIFICATION

FOR METAL OXIDE 400 KV LIGHTNING ARRESTORS FOR 400 KV SYSTEM

I - SCOPE:

The specification covers Design, Manufacturing, Assembly, Testing at manufacturer's works, Supply and Delivery of Single Phase Outdoor 390 KV metal oxide type gap-less surge arrestors for 400 KV systems complete with discharge counters, insulating base, Grading ring and other accessories. The quantity of arrestors required is as detailed in Schedule - II of Prices & Quantity.

2. CLIMATIC CONDITIONS:-

1	Location	In the state of Chhattisgarh
2	Maximum Ambient Air Temperature	50° C
3	Minimum Ambient Air Temperature	4° C
4	Average Daily Ambient Air Temperature	30° C
5	Maximum Relative Humidity	95% (sometime approaches to saturation)
6	Average no of thunderstorm days per annum	50
	Average no of rainy days per annum	90
7	Average Annual Rain fall	125cm
8	Months of tropical monsoon condition in the year	June to October
9	Maximum wind pressure	150Kg/sq.m.
9	Altitude not exceeding	1000 Meters.
10	Seismic Level(horizontal acceleration)	0.3 g

3. SPECIAL CONDITIONS:-

The atmosphere at places is laden with dust in suspension during the dry months and subject to fog in cold months. The temperature variation between the daily minimum and maximum is large. Heavy lightning is usual in the area during the months from May to November. This area is also subjected to heavy monsoon rains 80% to 90% of the annual precipitation during the months of June to October.

4. SYSTEM CONDITIONS:-

S.No.	Particulars	
1.	Nominal System Voltage	400 KV
2.	Highest System Voltage	420 KV
3.	Frequency	50 Hz.
4.	Short Circuit Level (KA) for 3 Seconds	40 KA
5.	Anticipation Levels of Temporary Over voltage & its duration	
	a. Voltage	1.5 PU
	b. Duration (Cycles)	5 Cycles

Note:- 1 PU = $[(V * \text{Root } 2) / (\text{Root } 3)]$ KVP Where V is the highest System voltage.

4.1 Our system is 3 phase 50 Hz. solidly grounded

- 4.2 We will place one of the surge Arrestor at the entry of the each line (Feeder) in the sub-station and one Set nearer to each transformer.
- 4.3 The insulation level provided in our transformer is 1550 kVp for 400 KV system respectively.

5. STANDARD:-

The surge Arrestors shall strictly conform to IEC 99-4 in all respects & shall also conform to the latest editions of and amendments available at the time of supply of the Standards listed hereunder:-

Sl. No.	Standard reference No.	TITLE
1	IEC : 99-4	Specification For Metal Oxide Surge Arrestors Without Gap For AC Systems.
2	IS : 3070 (Part-I & III)	Specification For Lightning Arrestors For AC System
3	IS : 4759	Hot Dip Zinc Coating On Structural Steel And Allied Products
4	IS : 2633	Method For Testing Uniformity Of coating on Zinc Coated Articles.
5	IS : 5621	Specification For Large Hollow Porcelain For Use In Electrical Installations
6	IS : 2147	Degree Of Protection Provided By Enclosures For Low Voltage Switchgear & Control.
7.	-	Indian Electricity Rules - 1956
8.	IS : 5561	Specification for Electric Power Connector
9.	IS : 2629	Recommended Practice For Hot Dip Galvanisation of Iron & Steel

Note:-

- For the purpose of this specification all Technical Terms used herein shall have the meaning as per IEC 99-4.
- For the parameters of the Arrestors which are not specified in IEC draft specification for Surge Arrestors, the provisions of IS : 3070 (Part - 3) shall be applicable.
- The surge Arrestors meeting any other authoritative standards which ensure equal or better performance than mentioned above shall also be acceptable.

6. TECHNICAL REQUIREMENTS:-

The technical requirements have been detailed out here-in-below:-

- The supplier should offer nearest rating of Surge Arrestors & Minimum residual voltage shall comply with the requirements given under clause S.No. 15 & 16 below:-
- The transformer which is to be protected has BIL of 1300 kVp for 400 KV system considering 20% safe margin as per IEC. The impulse voltage of more than 1050 KVp should not appear across the transformer of 400 KV. We will be installing our L.A.s at a distance of 5 / 10 metres from the transformer (another 5 metres be added towards height of LAs lead length and bushing of the transformers). It should be explained with suitable graphs and calculations, the voltage more than that specified above will not appear on transformer. This requirement is essential and in absence of this, the offer shall be liable for rejection.

- (c) The graph for TOV capability should be submitted alongwith the offer.
- (d) Calculation for energy handling capability should essentially be submitted alongwith the offer. The calculations should be as per IEC -99-4. The energy handling capability for single shot of wave and multiple shots of wave as per IEC should be submitted alongwith the offer.
- (e) The Technical particulars are as under :-

The equipment offered under this specification shall conform to the parameters given below:

S. No.	Particulars	
1.	Manufacturer type Designation.	Gap less type
2.	Applicable Specification and Standards.	IEC 99-4 :1991 & IS: 3070 (Part I & III)
3.	Rated frequency of Arrestors	50 Hz.
4.	Applicable ambient temperature	50° C
5.	Nominal System Voltage	400 KV
6.	Maximum Continuous Operating Voltage(MCOV)	303 KV
7.	Rated Arrestor voltage	390 KV
8.	Highest System Voltage	420 KV
9.	Duty for which suitable	Heavy Duty
10.	Class designation	Station Class
11.	Temporary power frequency voltage withstand capacity	
	1. 0.1 Second	580 KV rms.
	2. 1.0 Second	565 KV rms.
	3. 10 Seconds	550 KV rms.
	4. for 3 peaks	750 KV rms.
12.	Nominal discharge current (8 / 20 micro second)	10 KA
13.	Minimum Energy Discharge Capability(KJ / KV)	As per Long duration discharge class 3 IEC 99-4
14.	Long duration Discharge Class	3
15.	Maximum residual voltage at normal discharge current of 8/20 micro second wave for 10 KA	780 KVp
16.	Minimum prospective symmetrical fault current for pressure relief test (KA rms)	40
17.	Impulse current withstand capacity : High current short (4/10 microwave) (KA)	100
18.	Maximum Radio interference voltage when energised at MCOVI (micro volts)	Less than 250
20.	Creepage distance of porcelain housing (in m.m.)	10500
21.	Pressure Relief Device	Class "A"
22.	Insulation level of Housing:- Lightning Impulse withstand voltage (kVp) of housing	1425 kVp

- (f) While furnishing technical details, it is obligatory on the part of tenderer to furnish value of current peak and virtual duration for each of LAs for long duration current test.
- (g) Residual voltage test for 8 / 20 micro second wave of 10 KA are specified above, however, we will prefer still lower residual voltage to ensure better protection .

- (h) The requirement of energy rating is very specific, based on our system. The tenderers are requested to offer nearest energy rating of LAs for both single and double shot.

7. GENERAL TECHNICAL PARTICULARS :-

- 7.1 The surge Arrestors shall conform to the Technical requirements as per 6 above.
- 7.2 The energy handling capability of Arrestors both for single shot and double shot offered should be supported by the calculations. It is obligatory on the part of tenderer to offer energy handling capability for single shot and double shot alongwith calculations. In absence of this the offer shall be liable for rejection.
- 7.3 The grading ring on each complete arrester shall be provided if required for proper stress distribution for attaining relevant technical particulars .
- 7.4 The surge Arrestors shall be fitted with pressure relief devices and arc diverting ports and shall be tested as per the requirements of IEC draft specifications for minimum prospective symmetrical fault current as specified in S.No. 16 of the technical particulars.
- 7.5 The basic insulation levels and switching impulse withstand levels of the lines and equipment to be protected have been specified in clause 6 (b) above. The protective characteristics of the Arrestors offered shall be clearly specified in Schedule - I of Guaranteed Technical Particulars.
- 7.6 The materials and components not specifically stated in this specification but which are necessary for satisfactory operation of the equipment are deemed to be included in the scope of supply unless specifically excluded.
- 7.7 Unless otherwise brought out separately by the tenderer in the schedule of deviations, the surge Arrestors shall conform to the specifications scrupulously. All deviations from the specifications shall be brought out in the schedule of Technical Deviations. The discrepancies between the specification and the catalogues or literature submitted as part of offer shall not be considered as valid deviations unless specifically brought out in the schedule of deviations.
- 7.8 The minimum permissible separation between surge Arrestors and any earthed object shall be indicated by the tenderers in their offer.
- 7.9 Each and every individual unit of surge Arrestors shall be hermetically sealed and fully protected against the ingress of moisture. The hermetic seal shall be effective for entire life time of arrestors and under the service conditions specified. The supplier shall furnish sectional view showing details of sealing employed. Complete details of sealing arrangements may please be furnished.
- 7.10 Tenderer shall furnish in the offer sectional view of pressure relief device employed in the arrestors offered.
- 7.11 All the Units of Arrestors of the same rating shall be interchangeable type without adversely affecting the performance.
- 7.12 The lightening (Surge) Arrestors shall be suitable for pedestal type mounting which shall be arranged by purchaser. The drawing of mounting structure for LAs is enclosed.
- 7.13 All necessary bolts, nuts, clamps etc. required for mounting on support structure to be supplied by tenderer shall be included in the scope of supply.
- 7.14 The surge counter & Leakage current meter shall be provided for 390 KV LAs. The leakage current meter should be marked for normal leakage current & threshold current of operation.

7.15 All exposed ferrous parts shall be hot dip galvanised as per IS : 2633. The material shall be galvanised only after completing all shop operations.

7.16 **TERMINAL CONNECTORS :-**

- (a) All castings shall be free from blow holes, surface blisters, cracks & cavities. All sharp edges and corners shall be blurred and rounded off.
- (b) All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- (c) The contact surface must be machined smooth to obviate excessive current density.
- (d) The terminal connector for connection of conductor should be suitable for moose conductor for 390 KV LAs with vertical / horizontal take off arrangement and should have adequate current carrying capacity.
- (e) The terminal connector shall be manufactured out of Aluminium alloy LM6 as per IS and by gravity die casting process only.
- (f) Terminal connector should have minimum six bolts to hold the conductors. Conductor hold length shall not be less than 100 m.m.. All nuts, bolts, washers etc. shall be of stainless steel.
- (g) The minimum thickness of any part of clamps body shall not be less than 12 m.m.

7.17 **PORCELAIN BUSHING :-**

- (a) All porcelain housing shall be free from lamination cavities and other flaws affecting the maximum level of mechanical and electrical strength.
- (b) The porcelain shall be well vitrified and non-porous.
- (c) The creepage distance of arrester housing shall be as per technical particulars detailed out in clause 6 above.
- (d) The porcelain petticoat shall be preferably of self cleaning type (Aerofoil design).
- (e) The details of porcelain housing such as height, angle of inclination, shape of petticoats, gap between the petticoats, diameters (I.D. & O.D.) etc. shall be indicated by the tenderer in his offer in the form of a detailed drawing.
- (f) The arrester housing shall conform to the requirements of IEC specification.
- (g) Galvanising, Nickel plating etc. shall be generally as under :-
 - (i) All ferrous parts exposed to atmosphere shall be hot dip galvanised as per BIS : 2628 as amended from time to time. Tinned Copper / Brass lugs shall be used for internal wirings of discharge counter. Screws used for electrical connector shall be either made of brass or Nickel plated.
 - (ii) Ground terminal pads and name plate brackets shall be hot dip galvanised.
 - (iii) The material shall be galvanised only after completing all shop operations.

8. **ACCESSORIES & FITTINGS :-**

- 8.1 The discharge counter shall be provided for the arrester meant for 400 KV systems. The discharge counter shall be provided with milli ampere meter for measuring the leaking current and shall not require any DC or AC auxiliary supply. It shall be suitable for outdoor use. The installation of discharge counter shall not adversely affect the arrester performance.
- 8.2 The discharge counter shall register operation whenever lightning or any other type of surge strikes the surge arrester.
- 8.3 All necessary accessories and earthing connections leads between the bottom of the arrestors and the discharge counter shall be in the suppliers scope of supply. The discharge counter shall be so designed that the readings of discharges recorded by the counter and the readings of milli-ammeter shall be clearly visible through an inspection window to a person standing on ground. The minimum height of purchasers support shall be 2.5 m.

- 8.4 Each surge counters shall have terminals of robust construction for connection to earthing and these shall be suitably arranged so as to enable the incoming and outgoing connection to be made with minimum bends.
- 8.5 The grounding terminals (2 no.) shall be suitable for bolted connection of 50 x 8 mm M.S. flat to be provided by the purchaser for connection to station earth mat. Proper functioning of surge counter with Surge Arrestor shall be ensured by the supplier.

9. **NAME PLATE:-**

The arrestors shall be provided with non-corrosive legible name plate indelibly marked with the following information:

1	Chhattisgarh State Power Transmission Co.Ltd.
2	Order Number
3	Manufacturer's name or Trade Mark and Identification Number of the arrestors being supplied
4	Rated Voltage
5	Maximum continuous voltage
6	Type
7	Rated frequency
8	Long duration discharge class
9	Pressure relief current in KA rms.
10	B.I.L. of the equipment to be protected
11	Year of manufacture

10. The supplier shall furnish two sets of following drawings along with his offer:-
- General outline drawings of the complete arrester with technical parameters.
 - Drawings showing clearance from grounded and other live objects and between adjacent poles of surge Arrestors required at various heights of surge Arrestors.
 - Drawing showing details of pressure relief devices.
 - Detailed drawing of discharge counters along with the wiring and schematic drawing of discharge counters and meters.
 - Details of grading rings if used.
 - Outline drawing of insulating base.
 - Mounting details of surge Arrestors.
 - Details of the line terminal connector and ground terminals.
 - Volt time characteristics of surge Arrestors.
 - Details of galvanising being provided and different ferrous parts.
 - The detailed dimensional drawing of porcelain 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.
 - Name Plate drawing.

11. **TESTS :-**

All the equipment offered shall be fully type tested as per the relevant standards. In case the equipment of the type and design offered has already been type tested in an independent test laboratory, the suppliers shall furnish type test reports along with the offer. These tests must not have been conducted earlier than five years. Accordingly type test report containing all type as per IEC-99-4 must be submitted alongwith the offer for required rating of LAs . The type test reports to be submitted as per IS are:-

- Insulation withstand test (as per clause 6.2 of IS 3070 part III)

- b) Residual voltage test(as per clause 6.4 of IS 3070 part III)
- c) Long duration current impulse test(as per clause 6.5 of IS 3070 part III)
- d) Operating Duty cycle(as per clause 6.6 of IS 3070 part III)
- e) Pressure relief test(as per clause 6.7 of IS 3070 part III)
- f) Artificial pollution test(as per annexure-I of IS 3070 part III)
- g) Temperature cycle test on hollow porcelain housing (Annexure-H of IS:3070 part-III)
- h) Porosity test on porcelain housing(Annexure-H of IS:3070 part-III)
- i) Galvanizing test on exposed ferrous metal parts((Annexure-H of IS:3070 part- III)

12.1 ACCEPTANCE AND ROUTINE TESTS:-

All acceptance and routine tests as stipulated in the relevant standards i.e. ISS:3070 part III & reproduced below shall be carried out by the supplier in presence of purchaser representative.

- (i) Measurement of reference voltage(U_{ref})
- (ii) Residual voltage test
- (iii) Satisfactory absence from partial discharges & contact noise on each unit

Acceptance Test:-

- i) Measurement of power frequency reference voltage on complete arrester(refer clause 7.2.1 (a) of IS:3070)
- ii) Lightning impulse residual voltage on the complete arrester unit (refer clause 7.2.1 (b) of IS:3070)
- iii) Partial discharge test as per clause 7.2.1© of IS:3070 part III
- iv) Galvanising test
- v) Functional test on surg arrester
- vi) Visual examination and dimension verifications.

Acceptance tests, whenever possible shall be conducted on the complete arrester unit. The number of samples to be subjected to acceptance tests shall be decided by the purchaser at the time of actual testing.

Routine Test:-

- i) Measurement of power frequency reference vottage
- ii) Measurement of partial discharge
- iii) Measurement of Residual voltage test
- iv) Seal Leak test
- v) Functional test on surge arrester
- vi) Visual examination
- vii) Dimension verification

13.All guaranteed technical particulars of LAs offered must be clearly stated in Schedule – II(A) in breach of this condition offer may be summarily rejected.

14.The LA should be suitable for mounting on our structures.The drawing of standard mounting structure of Las shall be providedd to successful bidder.

SECTION II(B)
TECHNICAL SPECIFICATION
FOR METAL OXIDE LIGHTNING ARRESTORS FOR 220 KV SYSTEM

1. SCOPE:

The specification covers Design, Manufacturing, Assembly, Testing at manufacturer's works, Supply and Delivery of Single Phase Outdoor 198 KV metal oxide type gap-less surge arrestors for 220 KV systems complete with discharge counters, insulating base, Grading ring and other accessories. The quantity of arrestors required is as detailed in Schedule – I of Prices & Quantity.

2. CLIMATIC CONDITIONS:-

1	Location	In the state of Chhattisgarh
2	Maximum Ambient Air Temperature	50 ^o C
3	Minimum Ambient Air Temperature	4 ^o C
4	Average daily Ambient Air Temp.	30 ^o C
5	Maximum relative humidity	95%(sometime approaches to saturation)
6	Average no. of thunderstorm days per annum	50
7	Average no. of rainy days per annum	90
8	Average annual rainfall	125 cm.
9	Months of tropical monsoon condition in the year.	June to October
10	Maximum wind pressure.	150 Kg/sq.m.
11	Altitude not exceeding	1000 meters
12	Seismic level (horizontal acceleration)	0.3 g

3. SPECIAL CONDITIONS:-

The atmosphere at places is laden with dust in suspension during the dry months and subject to fog in cold months. The temperature variation between the daily minimum and maximum is large. Heavy lightning is usual in the area during the months from May to November. This area is also subjected to heavy monsoon rains 80% to 90% of the annual precipitation during the months of June to October.

4. SYSTEM CONDITIONS:-

S.No.	Particulars	
1.	Nominal System Voltage	220 KV
2.	Highest System Voltage	245 KV
3.	Frequency	50 Hz.
4.	Short Circuit Level (KA) for 3 Seconds	40 KA
5.	Anticipation Levels of Temporary Over voltage & its duration	
	a. Voltage	1.5 PU
	b. Duration (Cycles)	5 Cycles

Note:- 1 PU = [(V * Root 2) / (Root 3)] KVP Where V is the highest System voltage.

- 4.1 Our system is 3 phase 50 Hz, solidly grounded.
- 4.2 We will place one of the surge Arrestor at the entry of the each line (Feeder) in the substation and one Set nearer to each transformer.
- 4.3 The insulation level provided in our transformer is 950 kVp for 220 KV system

respectively.

5. **STANDARD:-** The surge Arrestors shall strictly conform to IEC 99-4 in all respects & shall also conform to the latest editions of and amendments available at the time of supply of the Standards listed hereunder :-

S. No.	Standard reference No.	TITLE
1	IEC : 99-4	Specification For Metal Oxide Surge Arrestors Without Gap For AC Systems.
2	IS : 3070 (Part-I & III)	Specification For Lightning Arrestors For AC System
3	IS : 4759	Hot Dip Zinc Coating On Structural Steel And Allied Products
4	IS : 2633	Method For Testing Uniformity Of coating on Zinc Coated Articles.
5	IS : 5621	Specification For Large Hollow Porcelain For Use In Electrical Installations
6	IS : 2147	Degree Of Protection Provided By Enclosures For Low Voltage Switchgear & Control.
7.	-	Indian Electricity Rules – 1956
8.	IS : 5561	Specification for Electric Power Connector
9.	IS : 2629	Recommended Practice For Hot Dip Galvanisation of Iron & Steel

Notes:-

- For the purpose of this specification all Technical Terms used herein shall have the meaning as per IEC 99-4.
- For the parameters of the Arrestors which are not specified in IEC draft specification for Surge Arrestors, the provisions of IS : 3070 (Part – 3) shall be applicable.
- The surge Arrestors meeting any other authoritative standards which ensure equal or better performance than mentioned above shall also be acceptable.

6. **TECHNICAL REQUIREMENTS:-**

The technical requirements have been detailed out here-in-below:-

- The supplier should offer nearest rating of Surge Arrestors & Minimum residual voltage shall comply with the requirements as below:-
- The transformer which is to be protected has BIL of 950 kVp for 220 KV system considering 20% safe margin as per IEC. The impulse voltage of more than 780 KVp should not appear across the transformer of 220 KV. We will be installing our L.A.s at a distance of 5 / 10 metres from the transformer (another 5 metres be added towards height of LAs lead length and bushing of the transformers). It should be explained with suitable graphs and calculations, the voltage more than that specified above will not appear on transformer. This requirement is essential.
- The graph for TOV capability should be submitted alongwith the offer.
- Calculation for energy handling capability should essentially be submitted alongwith the offer. The calculations should be as per IEC -99-4. The energy handling capability for single shot of wave and multiple shots of wave as per IEC should be submitted alongwith the offer.
- The Technical particulars are as under :-

The equipment offered under this specification shall conform to the parameters given below:

S. No.	Particulars	
1.	Manufacturer type Designation.	Gap less type
2.	Applicable Specification and Standards.	IEC 99-4 :1991 & IS: 3070 (Part I & III)
3.	Rated frequency of Arrestors	50 Hz.
4.	Applicable ambient temperature	50° C
5.	Nominal System Voltage	220 KV
6.	Maximum Continuous Operating Voltage(MCOV)	168 KV
7.	Rated Arrestor voltage	198 KV
8.	Highest System Voltage	245 KV
9.	Duty for which suitable	Heavy Duty
10.	Class designation	Station Class
11	Temporary power frequency voltage withstand capacity	
	1. 0.1 Second	237 KV rms.
	2. 1.0 Second	218 KV rms.
	3. 10 Seconds	198 KV rms.
12.	Nominal discharge current (8 / 20 micro second)	10 KA
13.	Minimum Energy Discharge Capability (KJ / KV)	As per Long duration discharge class 3 IEC 99-4 (for single shot 5 KJ/ KV)
14.	Long duration energy Discharge Class	3
15.	Maximum residual voltage at normal discharge current of 8/20 micro second wave for 10 KA	480 KVp
16.	Minimum prospective symmetrical fault current for pressure relief test (KA rms)	40
17.	Impulse current withstand capacity : High current short (4/10 microwave) (KA)	100
18.	Maximum Radio interference voltage when energised at MCOVI (micro volts)	Less than 250
19.	Creepage distance of porcelain housing (in m.m.)	6125 mm
20.	Pressure Relief Device	Class "A"
21.	Insulation level of Housing:- Lightning Impulse withstand voltage (kVp) of housing	1050 kVp

- (f) While furnishing technical details, it is obligatory on the part of Bidder to furnish value of current peak and virtual duration for each of LAs for long duration current test.
- (g) Residual voltage test for 8 / 20 micro second wave of 10 KA are specified above, however, we will prefer still lower residual voltage to ensure better protection .
- (h) The requirement of energy rating is very specific, based on our system. The Bidders are requested to offer nearest energy rating of LAs for both single and double shot.

- 7. GENERAL TECHNICAL PARTICULARS FOR 198 KV LIGHTING ARRESTOR :-**
- 7.1 The surge Arrestors shall conform to the Technical requirements as per 6 above.
 - 7.2 The energy handling capability of Arrestors both for single shot and double shot offered should be supported by the calculations. It is obligatory on the part of Bidder to offer energy handling capability for single shot and double shot alongwith calculations. In absence of this the offer shall be liable for rejection.
 - 7.3 The grading ring on each complete arrester shall be provided if required for proper stress distribution for attaining relevant technical particulars for 198 KV LAs.
 - 7.4 The surge Arrestors shall be fitted with pressure relief devices and arc diverting ports and shall be tested as per the requirements of IEC draft specifications for minimum prospective symmetrical fault current as specified in S.No. 16 of the technical particulars.
 - 7.5 The basic insulation levels and switching impulse withstand levels of the lines and equipment to be protected have been specified in clause 6 (b) above. The protective characteristics of the Arrestors offered shall be clearly specified in Schedule – II of Guaranteed Technical Particulars.
 - 7.6 The materials and components not specifically stated in this specification but which are necessary for satisfactory operation of the equipment are deemed to be included in the scope of supply unless specifically excluded.
 - 7.7 Unless otherwise brought out separately by the bidder in the schedule of deviations, the surge Arrestors shall conform to the specifications scrupulously. All deviations from the specifications shall be brought out in the schedule of Technical Deviations. The discrepancies between the specification and the catalogues or literature submitted as part of offer shall not be considered as valid deviations unless specifically brought out in the schedule of deviations.
 - 7.8 The minimum permissible separation between surge Arrestors and any earthed object shall be indicated by the bidders in their offer.
 - 7.9 Each and every individual unit of surge Arrestors shall be hermetically sealed and fully protected against the ingress of moisture. The hermetic seal shall be effective for entire life time of arrestors and under the service conditions specified. The supplier shall furnish sectional view showing details of sealing employed. Complete details of sealing arrangements may please be furnished.
 - 7.10 Bidders shall furnish in the offer sectional view of pressure relief device employed in the arrestors offered.
 - 7.11 All the Units of Arrestors of the same rating shall be interchangeable type without adversely affecting the performance.
 - 7.12 The lightning (Surge) Arrestors shall be suitable for pedestal type mounting which shall be arranged by purchaser. The drawing of mounting structure for LAs will be provided after placing of order.
 - 7.13 All necessary bolts, nuts, clamps etc. required for mounting on support structure to be supplied by bidder shall be included in the scope of supply.
 - 7.14 The surge counter & Leakage current meter shall be provided for 198 KV LAs. The leakage current meter should be marked for normal leakage current & threshold current of operation.
 - 7.15 All exposed ferrous parts shall be hot dip galvanised as per IS : 2633. The material shall be galvanised only after completing all shop operations.

7.16 TERMINAL CONNECTORS :-

- (a) All castings shall be free from blow holes, surface blisters, cracks & cavities. All sharp edges and corners shall be blurred and rounded off.
- (b) All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- (c) The contact surface must be machined smooth to obviate excessive current density.
- (d) The terminal connector for connection of conductor should be suitable for Zebra conductor for 198 KV LAs with vertical / horizontal take off arrangement and should have adequate current carrying capacity.
- (e) The terminal connector shall be manufactured out of Aluminium alloy LM6 as per IS and by gravity die casting process only.
- (f) Terminal connector should have six bolts to hold the conductors. Conductor hold length shall not be less than 100 m.m.. All nuts, bolts, washers etc. shall be of Galvanised iron.
- (g) The minimum thickness of any part of clamps body shall not be less than 12 m.m.

7.17 PORCELAIN BUSHING :-

- (a) All porcelain housing shall be free from lamination cavities and other flaws affecting the maximum level of mechanical and electrical strength.
- (b) The porcelain shall be well vitrified and non-porous.
- (c) The creepage distance of arrester housing shall be as per technical particulars detailed out in clause 6 above.
- (d) The porcelain petticoat shall be preferably of self cleaning type (Aerofoil design).
- (e) The details of porcelain housing such as height, angle of inclination, shape of petticoats, gap between the petticoats, diameters (I.D. & O.D.) etc. shall be indicated by the Bidder in his offer in the form of a detailed drawing.
- (f) The arrester housing shall conform to the requirements of IEC specification.
- (g) Galvanising, Nickel plating etc. shall be generally as under :-
 - (i) All ferrous parts exposed to atmosphere shall be hot dip galvanised as per BIS : 2628 as amended from time to time. Tinned Copper / Brass lugs shall be used for internal wirings of discharge counter. Screws used for electrical connector shall be either made of brass or Nickel plated.
 - (ii) Ground terminal pads and name plate brackets shall be hot dip galvanised.
 - (iii) The material shall be galvanised only after completing all shop operations.

8. ACCESSORIES & FITTINGS :-

- 8.1 The discharge counter shall be provided for the arrester meant for 220 KV systems. The discharge counter shall be provided with milli ampere meter for measuring the leaking current and shall not require any DC or AC auxiliary supply. It shall be suitable for outdoor use. The installation of discharge counter shall not adversely affect the arrester performance.
- 8.2 The discharge counter shall register operation whenever lightning or any other type of surge strikes the surge arrester.
- 8.3 All necessary accessories and earthing connections leads between the bottom of the arrestors and the discharge counter shall be in the suppliers scope of supply. The discharge counter shall be so designed that the readings of discharges recorded by the counter and the readings of milli-ammeter shall be clearly visible through an inspection window to a person standing on ground. The minimum height of purchasers support shall be 2.5 m.

- 8.4 Each surge counters shall have terminals of robust construction for connection to earthing and these shall be suitably arranged so as to enable the incoming and outgoing connection to be made with minimum bends.
- 8.5 The grounding terminals (2 no.) shall be suitable for bolted connection of 65 x 8 mm M.S. flat to be provided by the purchaser for connection to station earth mat. Proper functioning of surge counter with Surge Arrestor shall be ensured by the supplier.

09. NAME PLATE:-

The arrestors shall be provided with non-corrosive legible name plate indelibly marked with the following information:

1	Chhattisgarh State Power Transmission Co. Ltd.
2	Order Number
3	Manufacturer's name or Trade Mark and Identification Number of the arrestors being supplied
4	Rated Voltage
5	Maximum continuous voltage
6	Type
7	Rated frequency
8	Long duration discharge class
9	Pressure relief current in KA rms.
10	B.I.L. of the equipment to be protected
11	Year of manufacture

10. The supplier shall furnish two sets of following drawings along with his offer:-
- General outline drawings of the complete arrester with technical parameters.
 - Drawings showing clearance from grounded and other live objects and between adjacent poles of surge Arrestors required at various heights of surge Arrestors.
 - Drawing showing details of pressure relief devices.
 - Detailed drawing of discharge counters along with the wiring and schematic drawing of discharge counters and meters.
 - Details of grading rings if used.
 - Outline drawing of insulating base.
 - Mounting details of surge Arrestors.
 - Details of the line terminal connector and ground terminals.
 - Volt time characteristics of surge Arrestors.
 - Details of galvanising being provided and different ferrous parts.
 - The detailed dimensional drawing of porcelain 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.
 - Name Plate drawing.

11. TESTS :-

TYPE TEST:-

All the equipment offered shall be fully type tested as per the relevant standards. In case the equipment of the type and design offered has already been type tested in an independent test laboratory, the suppliers shall furnish type test reports along with the offer. These tests must not have been conducted earlier than ten years. Accordingly type test report containing all type as per IEC-99-4 must be submitted alongwith the offer for required rating of LAs . The type test reports to be submitted as per IS are:-

- Insulation withstand test(as per clause 6.2 of IS 3070 part III)
- Residual voltage test(as per clause 6.4 of IS 3070 part III)
- Long duration current impulse test(as per clause 6.5 of IS 3070 part III)

4. Operating Duty cycle(as per clause 6.6 of IS 3070 part III)
5. Pressure relief test(as per clause 6.7 of IS 3070 part III)
6. Artificial pollution test(as per annexure-I of IS 3070 part III)
7. Temperature cycle test on hollow porcelain housing(Annexure-H of IS:3070 part-III)
8. Porosity test on porcelain housing(Annexure-H of IS:3070 part-III)
9. Galvanizing test on exposed ferrous metal parts((Annexure-H of IS:3070 part- III)

12.1 ACCEPTANCE AND ROUTINE TESTS:-

All acceptance and routine tests as stipulated in the relevant standards i.e. ISS:3070 part III & reproduced below shall be carried out by the supplier in presence of purchaser representative.

- (i) Measurement of reference voltage(U_{ref})
- (ii) Residual voltage test
- (iii) Satisfactory absence from partial discharges & contact noise on each unit

Acceptance Test:-

- i) Measurement of power frequency reference voltage on complete arrester(refer clause 7.2.1 (a) of IS:3070)
- ii) Lightning impulse residual voltage on the complete arrester unit (refer clause 7.2.1 (b) of IS:3070)
- iii) Partial discharge test as per clause 7.2.1© of IS:3070 part III
- iv) Galvanising test
- v) Functional test on surge arrester
- vi) Visual examination and dimension verifications

Acceptance tests, whenever possible shall be conducted on the complete arrester unit. The number of samples to be subjected to acceptance tests shall be decided by the purchaser at the time of actual testing.

Routine Test :-

- i) Measurement of power frequency reference voltage
- ii) Measurement of partial discharge
- iii) Measurement of Residual voltage test
- iv) Seal Leak test
- v) Functional test on surge arrester
- vi) Visual examination
- vii) Dimension verification

13. All guaranteed technical particulars of LAs offered must be clearly stated in Schedule – II(A) in breach of this condition offer may be summarily rejected.
14. The LA should be suitable for mounting on our structures. The drawing of standard mounting structure of LAs shall be provided to successful bidder.

SECTION-II (C)

TECHNICAL SPECIFICATION FOR METAL OXIDE LIGHTNING ARRESTORS 132KV

1 SCOPE:

The specification covers design, manufacturing, assembly, testing at manufacturer's works, supply and delivery of Single Phase outdoor metal oxide type gap-less surge arrestors for 132 KV systems complete with discharge counters, insulating base, Grading ring and other accessories. The quantity of arrestors required is as detailed in Schedule – I of Prices & Quantity.

2. CLIMATIC CONDITIONS:-

1	Location	In the state of Chhattisgarh
2	Maximum Ambient Air Temperature	50 ^o C
3	Minimum Ambient Air Temperature	4 ^o C
4	Average daily Ambient Air Temp.	30 ^o C
5	Maximum relative humidity	95% (sometime approaches to saturation)
6	Average no. of thunderstorm days per annum	50
7	Average no. of rainy days per annum	90
8	Average annual rainfall	125 cm.
9	Months of tropical monsoon condition in the year.	June to October
10	Maximum wind pressure.	150 Kg/sq.m.
11	Altitude not exceeding	1000 meters
12	Seismic level (horizontal acceleration)	0.3 g

3. SPECIAL CONDITIONS:-

The atmosphere at places is laden with dust in suspension during the dry months and subject to fog in cold months. The temperature variation between the daily minimum and maximum is large. Heavy lightning is usual in the area during the months from May to November. This area is also subjected to heavy monsoon rains 80% to 90% of the annual precipitation during the months of June to October.

4. SYSTEM CONDITIONS:-

S.No.	Particulars	132 KV
1	Nominal System Voltage	132 KV
2	Highest System Voltage	145 KV
3	Frequency	50 Hz.
4	Short Circuit Level (KA) for 3 Seconds	40 KA
5	Anticipation Levels of Temporary Over voltage & its duration	
	a. Voltage	2.0 PU
	b. Duration (Cycles)	5 Cycles

Note:- 1 PU = $[(V * \text{Root } 2) / (\text{Root } 3)]$ kVp Where V is the highest System voltage.

Our system is 3 phase 50 Hz. Solidly grounded

- 4.2.1. We will place one of the surge Arrestor at the entry of the each line (Feeder) in the sub-station and one Set nearer to each transformer.
- 4.2.2. The insulation level provided in our transformer is 550 kVp for 132 KV system respectively.

5. **STANDARD:-** The surge Arrestors shall strictly conform to IEC 99-4 in all respects & shall also conform to the latest editions of and amendments available at the time of supply of the Standards listed hereunder:-

S. No.	Standard ref. No.	TITLE
1	IEC : 99-4	Specification For Metal Oxide Surge Arrestors Without Gap For AC Systems.
2	IS : 3070 (Part-I & III)	Specification For Lightning Arrestors For AC System
3	IS : 4759	Hot Dip Zinc Coating On structural Steel And Allied products
4	IS : 2633	Method for testing uniformity of coating on zinc coated articles.
5	IS : 5621	Specification for large hollow porcelain for use in electrical installations
6	IS : 2147	Degree of protection provided by enclosures for low voltage Switchgear & Control.
7.	-	Indian Electricity Rules – 1956
8.	IS : 5561	Specification for Electric Power connector
9.	IS : 2629	Recommended practice for Hot Dip Galvanisation of Iron & Steel

Notes:-

- (i) For the purpose of this specification all Technical Terms used herein shall have the meaning as per IEC 99-4.
- (ii) For the parameters of the Arrestors which are not specified in IEC draft specification for Surge Arrestors, the provisions of IS : 3070 (Part – 3) shall be applicable.
- (iii) The surge Arrestors meeting any other authoritative standards which ensure equal or better performance than mentioned above shall also be acceptable.

6. **TECHNICAL REQUIREMENTS:**

The technical requirements have been detailed out here-in-below:-

- (a) The supplier should offer nearest rating of Surge Arrestors & Minimum residual voltage shall comply with the requirements as below:-
- (b) The transformer which is to be protected has BIL of 550 kVp for 132 KV system considering 20% safe margin as per IEC. The impulse voltage of more than 440 KVp should not appear across the transformer of 132 KV. We will be installing our L.A.s at a distance of 5 / 10 metres from the transformer (another 5 metres be added towards height of LAs lead length and bushing of the transformers). It should be explained with suitable graphs and calculations, the voltage more than that specified above will not appear on transformer. This requirement is essential.
- (c) The graph for TOV (Temporaty over voltage) capability should be submitted alongwith the offer.
- (d) Calculation for energy handling capability should essentially be submitted alongwith the offer. The calculations should be as per IEC-99-4. The energy handling capability for single shot of wave and multiple shots of wave as per IEC should be submitted alongwith the offer.
- (e) The Technical Particulars are as under :- The equipment offered under this specification shall conform to the parameters given below:

S. No.	Particulars	Data for 132 KV
01.	Manufacturer type Designation.	Gap less type
02.	Applicable Specification and Standards.	IEC 99-4 :1991 & IS: 3070 (Part I & III)
03.	Rated frequency of Arrestors	50 Hz.
04.	Applicable ambient temperature	50° C
05.	Nominal System Voltage	132 KV
06.	Max. continuous operating voltage (MCOV)	96 KV
07.	Rated Arrestor voltage	120 KV
08.	Highest System Voltage	145 KV
09.	Duty for which suitable	Heavy Duty
10.	Class designation	Station Class
11.	Temporary power frequency voltage withstand capacity 1. 0.1 Second 2. 1.0 Second 3. 10 Seconds	139 KV rms. 132 KV rms. 120 KV rms.
12.	Nominal discharge current (8/20 micro second)	10 KA
	Minimum Energy Discharge Capability (KJ / KV)	As per long duration discharge class 3 IEC 99-4 (for single shot 5 KJ/ KV)
13.	Long duration Discharge Class	3
14.	Maximum residual voltage at normal discharge current of 8/20 micro second wave for 10 KA	300 KVp
15.	Maximum Residual voltage at switching current impulse of 30/60 us for 1000 A (kVp)	-
16.	Minimum prospective symmetrical fault current for pressure relief test (KA rms)	40
17.	Impulse current withstand capacity : High current short (4/10 microwave) (KA)	100
18.	Maximum Radio interference voltage when energised at MCOVI (micro volts)	Less than 250
19.	Creepage distance of porcelain housing (in mm)	3625
20.	Pressure Relief Device	Class "A"
21.	Insulation level of Housing a. Lightning Impulse withstand voltage (kVp) of housing b. One minutes power frequency withstand voltage (kVp) of housing	650 kVp -

- (f) While furnishing technical details, it is obligatory on the part of bidder to furnish value of current peak and virtual duration for each of LAs for long duration current test.
- (g) Residual voltage test for 8 / 20 micro second wave of 10 KA are specified above, however, we will prefer still lower residual voltage to ensure better protection .
- (h) The requirement of energy rating is very specific, based on our system. The bidders are requested to offer nearest energy rating of LAs for both single and double shot.

7. GENERAL TECHNICAL PARTICULARS :-

- 7.1 The surge Arrestors shall conform to the Technical requirements as per 6 above.
- 7.2 The energy handling capability of Arrestors both for single shot and double shot offered should be supported by the calculations. It is obligatory on the part of bidder to offer energy handling capability for single shot and double shot alongwith calculations. In absence of this the offer shall be liable for rejection.
- 7.3 The grading ring on each complete arrester shall be provided if required for proper stress distribution for attaining relevant technical particulars for 120 KV LAs.
- 7.4 The surge Arrestors shall be fitted with pressure relief devices and arc diverting ports and shall be tested as per the requirements of IEC draft specifications for minimum prospective symmetrical fault current as specified in S.No. 17 of the technical particulars.
- 7.5 The basic insulation levels and switching impulse withstand levels of the lines and equipment to be protected have been specified in clause 6 (b) above. The protective characteristics of the Arrestors offered shall be clearly specified in Schedule – II of Guaranteed Technical Particulars.
- 7.6 The materials and components not specifically stated in this specification but which are necessary for satisfactory operation of the equipment are deemed to be included in the scope of supply unless specifically excluded.
- 7.7 Unless otherwise brought out separately by the bidder in the schedule of deviations, the surge Arrestors shall conform to the specifications scrupulously. All deviations from the specifications shall be brought out in the schedule of Technical Deviations. The discrepancies between the specification and the catalogues or literature submitted as part of offer shall not be considered as valid deviations unless specifically brought out in the schedule of deviations.
- 7.8 The minimum permissible separation between surge Arrestors and any earthed object shall be indicated by the bidders in their offer.
- 7.9 Each and every individual unit of surge Arrestors shall be hermetically sealed and fully protected against the ingress of moisture. The hermetic seal shall be effective for entire life time of arrestors and under the service conditions specified. The supplier shall furnish sectional view showing details of sealing employed. Complete details of sealing arrangements may please be furnished.
- 7.10 Bidder shall furnish in the offer sectional view of pressure relief device employed in the arrestors offered.
- 7.11 All the Units of Arrestors of the same rating shall be interchangeable type without adversely affecting the performance.
- 7.12 The lightning (Surge) Arrestors shall be suitable for pedestal type mounting which shall be arranged by purchaser. The drawing of mounting structure for LAs is enclosed.
- 7.13 All necessary bolts, nuts, clamps etc. required for mounting on support structure to be supplied by bidder shall be included in the scope of supply.
- 7.14 The surge counter & Leakage current meter shall be provided for 120 KV LAs. The leakage current meter should be marked for normal leakage current & threshold current of operation.
- 7.15 All exposed ferrous parts shall be hot dip galvanised as per IS : 2633. The material shall be galvanised only after completing all shop operations.
- 7.16 **TERMINAL CONNECTORS :-**
- a. All castings shall be free from blow holes, surface blisters, cracks & cavities. All sharp edges and corners shall be blurred and rounded off.

- b. All current carrying parts shall be designed and manufactured to have minimum contact resistance.
- c. The contact surface must be machined smooth to obviate excessive current density.
- d. The terminal connector for connection of conductor should be suitable for Zebra conductor for 132 KV LAs with vertical / horizontal take off arrangement and should have adequate current carrying capacity.
- e. The terminal connector shall be manufactured out of Aluminium alloy LM6 as per IS and by gravity die casting process only.
- f. Terminal connector should have six bolts to hold the conductors. Conductor hold length shall not be less than 100 m.m.. All nuts, bolts, washers etc. shall be of Galvanized Iron.
- g. The minimum thickness of any part of clamps body shall not be less than 12 m.m.
- h. Bimetallic material shall be provided between copper and aluminium contact.

7.17 PORCECTIN BUSHING :-

- a. All porcelain housing shall be free from lamination cavities and other flaws affecting the maximum level of mechanical and electrical strength.
- b. The porcelain shall be well vitrified and non-porous.
- c. The creepage distance of arrester housing shall be as per technical particulars detailed out in clause 6 above.
- d. The porcelain petticoat shall be preferably of self cleaning type (Aerofoil design). The details of porcelain housing such as height, angle of inclination, shape of petticoats, gap between the petticoats, diameters (I.D. & O.D.) etc. shall be indicated by the bidder in his offer in the form of a detailed drawing.
- e. The arrester housing shall conform to the requirements of IEC specification.
- f. Galvanising, Nickel plating etc. shall be generally as under :-
 - i) All ferrous parts exposed to atmosphere shall be hot dip galvanised as per BIS : 2628 as amended from time to time. Tinned Copper / Brass lugs shall be used for internal wirings of discharge counter. Screws used for electrical connector shall be either made of brass or Nickel plated.
 - ii) Ground terminal pads and name plate brackets shall be hot dip galvanised.
 - iii) The material shall be galvanised only after completing all shop operations.

8. ACCESSORIES & FITTINGS :-

- 8.1 The discharge counter shall be provided for the arrester meant for 132 KV systems. The discharge counter shall be provided with milli ampere meter for measuring the leaking current and shall not require any DC or AC auxiliary supply. It shall be suitable for outdoor use. The installation of discharge counter shall not adversely affect the arrester performance.
- 8.2.1 The discharge counter shall register operation whenever lightning or any other type of surge strikes the surge arrester.
- 8.3 All necessary accessories and earthing connections leads between the bottom of the arrestors and the discharge counter shall be in the suppliers scope of supply. The discharge counter shall be so designed that the readings of discharges recorded by the counter and the readings of milli-ammeter shall be clearly visible through an inspection window to a person standing on ground. The minimum height of purchasers support shall be 2.5 m.

- 8.4 Each surge counters shall have terminals of robust construction for connection to earthing and these shall be suitably arranged so as to enable the incoming and outgoing connection to be made with minimum bends.
- 8.5.1.1 The grounding terminals (2 nos.) shall be suitable for bolted connection of 65 x 8 mm M.S. flat to be provided by the purchaser for connection to station earth mat. Proper functioning of surge counter with Surge Arrestor shall be ensured by the supplier.

9. NAME PLATE:-

The arrestors shall be provided with non-corrosive legible name plate indelibly marked with the following information:

1.	CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
2.	Order Number
3.	Manufacturer's name or Trade Mark and Identification Number of the arrestors being supplied
4.	Rated Voltage
5.	Maximum continuous voltage
6.	Type
7.	Rated frequency
8.	Long duration discharge class
9.	Pressure relief current in KA rms.
10.	B.I.L. of the equipment to be protected
11.	Year of manufacture

10. The supplier shall furnish two sets of following drawings along with his offer:-
- General outline drawings of the complete arrester with technical parameters.
 - Drawings showing clearance from grounded and other live objects and between adjacent poles of surge Arrestors required at various heights of surge Arrestors.
 - Drawing showing details of pressure relief devices.
 - Detailed drawing of discharge counters along with the wiring and schematic drawing of discharge counters and meters.
 - Details of grading rings if used.
 - Outline drawing of insulating base.
 - Mounting details of surge Arrestors.
 - Details of the line terminal connector and ground terminals.
 - Volt time characteristics of surge Arrestors.
 - Details of galvanising being provided and different ferrous parts.
 - The detailed dimensional drawing of porcelain 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.
 - Name Plate drawing.

11. TESTS :-

TYPE TEST:-

All the equipment offered shall be fully type tested as per the relevant standards. In case the equipment of the type and design offered has already been type tested in an independent test laboratory, the suppliers shall furnish type test reports along with the offer. These tests must not have been conducted earlier than ten years. Accordingly type test report containing all type as per IEC-99-4 must be submitted alongwith the offer for required rating of LAs . The type test reports to be submitted as per IS are:-

- Insulation withstand test(as per clause 6.2 of IS 3070 part III)

2. Residual voltage test (as per clause 6.4 of IS 3070 part III)
3. Long duration current impulse test (as per clause 6.5 of IS 3070 part III)
4. Operating Duty cycle (as per clause 6.6 of IS 3070 part III)
5. Pressure relief test (as per clause 6.7 of IS 3070 part III)
6. Artificial pollution test (as per annexure-I of IS 3070 part III)
7. Temperature cycle test on hollow porcelain housing (Annexure-H of IS:3070 part-III)
8. Porosity test on porcelain housing (Annexure-H of IS:3070 part-III)
9. Galvanizing test on exposed ferrous metal parts ((Annexure-H of IS:3070 part- III)

12.1 ACCEPTANCE AND ROUTINE TESTS:-

All acceptance and routine tests as stipulated in the relevant standards i.e. ISS:3070 part III & reproduced below shall be carried out by the supplier in presence of purchaser representative.

- (i) Measurement of reference voltage (Uref)
- (ii) Residual voltage test
- (iii) Satisfactory absence from partial discharges & contact noise on each unit

Acceptance Test:-

- i) Measurement of power frequency reference voltage on complete arrester (refer clause 7.2.1 (a) of IS:3070)
- ii) Lightning impulse residual voltage on the complete arrester unit (refer clause 7.2.1 (b) of IS:3070)
- iii) Partial discharge test as per clause 7.2.1© of IS:3070 part III
- iv) Galvanising test
- v) Functional test on surge arrester
- vi) Visual examination and dimension verifications

Acceptance tests, whenever possible shall be conducted on the complete arrester unit. The number of samples to be subjected to acceptance tests shall be decided by the purchaser at the time of actual testing.

Routine Test :-

- i) Measurement of power frequency reference voltage
- ii) Measurement of partial discharge
- iii) Measurement of Residual voltage test
- iv) Seal Leak test
- v) Functional test on surge arrester
- vi) Visual examination
- vii) Dimension verification

13. All guaranteed technical particulars of LAs offered must be clearly stated in Schedule – II(B) in breach of this condition offer may be summarily rejected.
14. The LA should be suitable for mounting on our structures. The drawing of standard mounting structure of LAs shall be provided to successful bidder.

SECTION II (D)

TECHNICAL SPECIFICATION FOR METAL OXIDE LIGHTNING ARRESTERS FOR 33 KV SYSTEM

1. SCOPE:

The specification covers design, manufacturing, assembly, testing at manufacturer's works, supply and delivery of Single Phase outdoor metal oxide type gap-less surge arresters for 33 KV systems complete with all accessories. The quantity of arresters required is as detailed in Schedule – I of Prices & Quantity.

2. CLIMATIC CONDITIONS:-

1	Location	In the state of Chhattisgarh
2	Maximum Ambient Air Temperature	50 ^o C
3	Minimum Ambient Air Temperature	4 ^o C
4	Average daily Ambient Air Temp.	30 ^o C
5	Maximum relative humidity	95%(sometime approaches to saturation)
6	Average no. of thunderstorm days per annum	50
7	Average no. of rainy days per annum	90
8	Average annual rainfall	125 cm.
9	Months of tropical monsoon condition in the year.	June to October
10	Maximum wind pressure.	150 Kg/sq.m.
11	Altitude not exceeding	1000 meters
12	Seismic level (horizontal acceleration)	0.3 g

3. SPECIAL CONDITIONS:-

The atmosphere at places is laden with dust in suspension during the dry months and subject to fog in cold months. The temperature variation between the daily minimum and maximum is large. Heavy lightning is usual in the area during the months from May to November. This area is also subjected to heavy monsoon rains 80% to 90% of the annual precipitation during the months of June to October.

4. SYSTEM CONDITIONS:-

S.No.	Particulars	33 KV
1.	Nominal System Voltage	33KV
2.	Highest System Voltage	36 KV
3.	Frequency	50 Hz.
4.	Short Circuit Level (KA) for 3 Seconds	25 KA
5.	Anticipation Levels of Temporary Over voltage & its duration	
	a. Voltage	2.0 PU
	b. Duration (Cycles)	5 Cycles

Note:- 1 PU=[(V * Root 2) / (Root 3)]KVp Where V is the highest System voltage.

4.1 Our system is 3 phase 50 Hz solidly grounded.

4.2 We will place one of the surge Arrester at the entry of the each line (Feeder) in the sub-station and one Set nearer to each transformer.

4.3 The insulation level provided in our transformer is 170 kVp for 33KV system respectively.

- 5 STANDARD:-** The surge Arrestors shall strictly conform to IEC 99-4 in all respects & shall also conform to the latest editions of and amendments available at the time of supply of the Standards listed hereunder:-

S. No.	Standard ref. No.	TITLE
1	IEC : 99-4	Specification for Metal Oxide Surge Arrestors without Gap for AC Systems.
2	IS : 3070 (Part-I & III)	Specification for Lightning Arrestors for AC System
3	IS : 4759	Hot Dip Zinc Coating on structural Steel and Allied products
4	IS : 2633	Method for testing uniformity of coating on zinc coated articles.
5	IS : 5621	Specification for large hollow porcelain for use in electrical installations
6	IS : 2147	Degree of protection provided by enclosures for low voltage Switchgear & Control.
7.	-	Indian Electricity Rules – 1956
8.	IS : 5561	Specification for Electric Power connector
9.	IS : 2629	Recommended practice for Hot Dip Galvanisation of Iron & Steel

Notes:-

For the purpose of this specification all Technical Terms used herein shall have the meaning as per IS:3070 (part-III).

6. TECHNICAL REQUIREMENTS:

The technical requirements have been detailed out here-in-below:-

- The supplier should offer nearest rating of Surge Arrestors & Minimum residual voltage shall comply with the requirements as below:-
- The transformer which is to be protected has BIL of 170 kVp for 33 KV system respectively considering 20% safe margin as per IEC. The impulse voltage of more than 136 KVp should not appear across the transformer's 33 KV side. We will be installing our Lightning Arrestors at a distance of 5 / 10 metres from the transformer (another 5 metres be added towards height of Lightning Arrestors lead length and bushing of the transformers). It should be explained with suitable graphs and calculations, the voltage more than that specified above will not appear on transformer. This requirement is essential.
- The graph for TOV capability should be submitted alongwith the offer.
- Calculation for energy handling capability should essentially be submitted alongwith the offer. The calculations should be as per IS:3070. The energy handling capability for single shot of wave and multiple shots of wave as per IS:3070 should be submitted alongwith the offer.
- The Technical Particulars are as under :-

The equipment offered under this specification shall conform to the parameters given below:

SN	Particulars	Data for 33 KV
1.	Manufacturer type Designation.	Gap less type
2.	Applicable Specification and Standards.	IS: 3070 (Part – III)
3.	Rated frequency of Arrestors	50 Hz.
4.	Applicable ambient temperature	50° C

5.	Nominal System Voltage	33 KV
6.	Maximum Continuous Operating Voltage(MCOV)	24 KV
7.	Rated Arrestor voltage	30 KV
8.	Highest System Voltage	36 KV
9.	Duty for which suitable	Heavy Duty
10.	Class designation	Station Class
11.	Temporary power frequency voltage withstand capacity 1. 0.1 Second 2. 1.0 Second 3. 10 Seconds	36 KV rms. 34 KV rms. 32 KV rms.
12.	Nominal discharge current (8 / 20 micro second)	10 KA
13.	Minimum Energy Discharge Capability (KJ / KV)	As per long duration discharge class 2
14.	Long duration Discharge Class	2
15.	Minimum prospective symmetrical fault current for pressure relief test (KA rms)	25
16.	Impulse current withstand capacity : High current short (4/10 microwave) (KA)	100
17.	Maximum Radio interference voltage when energised at MCOVI (micro volts)	500
18.	Creepage distance of porcelain housing (in mm)	900
19.	Pressure Relief Device	Class "A"
20.	Insulation level of Housing : Lightning Impulse withstand voltage (kVp) of housing	170 KVp

- f) While furnishing technical details, it is obligatory on the part of bidder to furnish value of current peak and virtual duration for each of Lightning Arrestors for long duration current test.
- g) Residual voltage test for 8 / 20 micro second wave of 10 KA are specified above, however, we will prefer still lower residual voltage to ensure better protection .
- (h) The requirement of energy rating is very specific, based on our system. The bidders are requested to offer nearest energy rating of Lightning Arrestors for both single and double shot.

7. GENERAL TECHNICAL PARTICULARS :-

- 7.1 The surge Arrestors shall conform to the Technical requirements as per 6 above.
- 7.2 The energy handling capability of Arrestors both for single shot and double shot offered should be supported by the calculations. It is obligatory on the part of bidder to offer energy handling capability for single shot and double shot alongwith calculations. In absence of this the offer shall be liable for rejection.
- 7.3 The surge Arrestors shall be fitted with pressure relief devices and arc diverting ports and shall be tested as per the requirements of IEC draft specifications for minimum prospective symmetrical fault current as specified in S.No. 15 of the technical particulars.
- 7.4 The basic insulation levels and switching impulse withstand levels of the lines and equipment to be protected have been specified in clause 6 (b) above. The protective characteristics of the Arrestors offered shall be clearly specified in Schedule – I of Guaranteed Technical Particulars.

-
- 7.5 The materials and components not specifically stated in this specification but which are necessary for satisfactory operation of the equipment are deemed to be included in the scope of supply unless specifically excluded.
- 7.6 Unless otherwise brought out separately by the bidder in the schedule of deviations, the surge Arrestors shall conform to the specifications scrupulously. All deviations from the specifications shall be brought out in the schedule of Technical Deviations. The discrepancies between the specification and the catalogues or literature submitted as part of offer shall not be considered as valid deviations unless specifically brought out in the schedule of deviations.
- 7.7 The minimum permissible separation between surge Arrestors and any earthed object shall be indicated by the bidders in their offer.
- 7.8 Each and every individual unit of surge Arrestors shall be hermetically sealed and fully protected against the ingress of moisture. The hermetic seal shall be effective for entire life time of arrestors and under the service conditions specified. The supplier shall furnish sectional view showing details of sealing employed. Complete details of sealing arrangements may please be furnished.
- 7.9 Bidder shall furnish in the offer sectional view of pressure relief device employed in the arrestors offered.
- 7.10 The lightning (Surge) Arrestors shall be suitable for pedestal type mounting which shall be arranged by purchaser. The drawing of mounting structure for Las shall be given to successful bidder by CSPTCL.
- 7.11 All necessary bolts, nuts, clamps etc. required for mounting on support structure to be supplied by bidder shall be included in the scope of supply.
- 7.12 All exposed ferrous parts shall be hot dip galvanised as per IS : 2633. The material shall be galvanised only after completing all shop operations.
- 7.13 **TERMINAL CONNECTORS :-**
- (a) All castings shall be free from blow holes, surface blisters, cracks & cavities. All sharp edges and corners shall be blurred and rounded off.
 - (b) All current carrying parts shall be designed and manufactured to have minimum contact resistance.
 - (c) The contact surface must be machined smooth to obviate excessive current density.
 - (d) The terminal connector for connection of conductor should be suitable for Zebra conductor for 33 KV Las with vertical / horizontal take off arrangement and should have adequate current carrying capacity.
 - (e) The terminal connector shall be manufactured out of Aluminium alloy LM6 as per IS and by gravity die casting process only.
 - (f) Terminal connector should have six bolts to hold the conductors. Conductor hold length shall not be less than 100 m.m.. All nuts, bolts, washers etc. shall be of galvanised steel only.
 - (g) The minimum thickness of any part of clamps body shall not be less than 12 m.m.
- 7.14 **PORCECTIN BUSHING :-**
- (a) All porcelain housing shall be free from lamination cavities and other flaws affecting the maximum level of mechanical and electrical strength.
 - (b) The porcelain shall be well vitrified and non-porous.
 - (c) The creepage distance of arrester housing shall be as per technical particulars detailed out in clause 6 above.
 - (d) The porcelain petticoat shall be preferably of self cleaning type (Aerofoil design). The details of porcelain housing such as height, angle of inclination, shape of
-

petticoats, gap between the petticoats, diameters (I.D. & O.D.) etc. shall be indicated by the bidder in his offer in the form of a detailed drawing.

- (e) The arrester housing shall conform to the requirements of IEC specification.
- (f) Galvanising, Nickel plating etc. shall be generally as under :-
 - (i) All ferrous parts exposed to atmosphere shall be hot dip galvanised as per BIS : 2628 as amended from time to time. Tinned Copper / Brass lugs shall be used for internal wirings of discharge counter. Screws used for electrical connector shall be either made of brass or Nickel plated.
 - (ii) Ground terminal pads and name plate brackets shall be hot dip galvanised.
 - (iii) The material shall be galvanised only after completing all shop operations.

8. ACCESSORIES & FITTINGS :-

- 8.1 Each surge counters shall have terminals of robust construction for connection to earthing and these shall be suitably arranged so as to enable the incoming and outgoing connection to be made with minimum bends.
- 8.2 The grounding terminals (2 nos.) shall be suitable for bolted connection of 50 x 8 mm M.S. flat to be provided by the purchaser for connection to station earth mat. Proper functioning of surge arrester shall be ensured by the supplier.

9. NAME PLATE:-

The arrestors shall be provided with non-corrosive legible name plate indelibly marked with the following information:

1.	CHHATTISGARH STATE POWER TRANSMISSION CO. LTD.
2.	Order Number
3.	Manufacturer's name or Trade Mark and Identification Number of the arrestors being supplied
4.	Rated Voltage
5.	Maximum continuous voltage
6.	Type
7.	Rated frequency
8.	Long duration discharge class
9.	Pressure relief current in KA rms.
10.	B.I.L. of the equipment to be protected
11.	Year of manufacture

- 10. The supplier shall furnish two sets of following drawings along with his offer:-
 - (a) General outline drawings of the complete arrester with technical parameters.
 - (b) Drawings showing clearance from grounded and other live objects and between adjacent poles of surge Arrestors required at various heights of surge Arrestors.
 - (c) Drawing showing details of pressure relief devices.
 - (d) Outline drawing of insulating base.
 - (e) Mounting details of surge Arrestors.
 - (f) Details of the line terminal connector and ground terminals.
 - (g) Volt time characteristics of surge Arrestors.
 - (h) Details of galvanising being provided and different ferrous parts.
 - (i) The detailed dimensional drawing of porcelain 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.
 - (j) Name Plate drawing.

11. TESTS :-

TYPE TEST:- All the equipment offered shall be fully type tested as per the relevant standards. In case the equipment of the type and design offered has already been type tested in an independent test laboratory, the suppliers shall furnish type test reports along with the offer. These tests must not have been conducted earlier than ten years. Accordingly type test report containing all type as per IEC-99-4 must be submitted alongwith the offer for required rating of Las . The type test reports to be submitted as per IS are:-

1. Insulation withstand test(as per clause 6.2 of IS 3070 part III)
2. Residual voltage test(as per clause 6.4 of IS 3070 part III)
3. Long duration current impulse test(as per clause 6.5 of IS 3070 part III)
4. Operating Duty cycle(as per clause 6.6 of IS 3070 part III)
5. Pressure relief test(as per clause 6.7 of IS 3070 part III)
6. Artificial pollution test(as per annexure-I of IS 3070 part III)
7. Temperature cycle test on hollow porcelain housing(Annexure-H of IS:3070 part-III)
8. Porosity test on porcelain housing(Annexure-H of IS:3070 part-III)
9. Galvanizing test on exposed ferrous metal parts((Annexure-H of IS:3070 part- III)

12.1 ACCEPTANCE AND ROUTINE TESTS:-

All acceptance and routine tests as stipulated in the relevant standards i.e. ISS:3070 part III & reproduced below shall be carried out by the supplier in presence of purchaser representative.

- (i) Measurement of reference voltage(Uref)
- (ii) Residual voltage test
- (iii) Satisfactory absence from partial discharges & contact noise on each unit

Acceptance Test:-

- i) Measurement of power frequency reference voltage on complete arrester(refer clause 7.2.1 (a) of IS:3070)
- ii) Lightning impulse residual voltage on the complete arrester unit (refer clause 7.2.1 (b) of IS:3070)
- iii) Partial discharge test as per clause 7.2.1© of IS:3070 part III
- iv) Galvanising test
- v) Functional test on surge arrester
- vi) Visual examination and dimension verifications

Acceptance tests, whenever possible shall be conducted on the complete arrester unit. The number of samples to be subjected to acceptance tests shall be decided by the purchaser at the time of actual testing.

Routine Test :-

- i) Measurement of power frequency reference voltage
- ii) Measurement of partial discharge
- iii) Measurement of Residual voltage test
- iv) Seal Leak test
- v) Functional test on surge arrester
- vi) Visual examination
- vii) Dimension verification

13. All guaranteed technical particulars of Las offered must be clearly stated in Schedule – II(C) in breach of this condition offer may be summarily rejected.

14. The LA should be suitable for mounting on our structures. The drawing of standard mounting structure of Las shall be provided to successful bidder.

SCHEDULE-I**SCHEDULE OF PRICE AND QUANTITY**

S. No	Particulars	Qty. in (Nos.)	Unit ex-works price including packing & forwarding in Rs.	Unit freight charges in Rs.	GST on Ex works and Freight charges @ ---%	Unit FOR destn. Price including GST, freight and other taxes (4+5+6) in Rs.	Total Amount (in Rs)
1	2	3	4	5	6=(4+5)* GST%	7=(4+5+6)	8
1.	390KV Lightning Arrestor	04					
2.	220 KV Lightning Arrestor	41					
3.	132 KV Lightning Arrestors	99					
4.	33 KV lightning Arrestor	204					

1. The quoted prices for should be variable as per price variation formula of IEEMA with base indices as issued by IEEMA one month prior to the due date of opening of tender. The PV formula is indicated in annexure-II enclosed with the tender.
2. Only statutory variation shall be paid within contractual delivery period.
3. The unpriced copy of above schedule is to be submitted alongwith TC bid.
4. **The rates will be quoted through online e- bidding portal (SAP SRM system) only. Price schedule duly filled in hard copy is not required.**

Signature & Seal of Tenderer Signature & Seal of Bidder

SCHEDULE – II (A)**SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS (G.T.P.) OF
LIGHTNING ARRESTOR**

S.No	PARTICULARS	390 KV LA
1.	Name of manufacturer	
2.	Type / Model	
3.	Applicable standards	
4.	No. of Units & ratings of each Unit	
5.	Rated Arrestors Voltage (kV rms)	
6.	Rated frequency (Hz)	
7.	Maximum continuous operating voltage (KV rms)	
8.	Maximum leakage current at Continuous Operating Voltage (micro amps)	
	(a)Maximum resistive component of continuous current (mA peak)	
	(b)Maximum capacitive component of continuous current (mA peak)	
	© Total	
9.	Temporary power frequency over voltage capacity (KV rms) a)For 0.1 sec. b)For 1 sec. c)For 10 sec. d)For 100 sec.	
10.	Nominal discharge current (kA) (8/20 micro sec wave)	
11.	Long duration energy discharge class	
12.	Minimum energy discharge capability (KJ/ KV)	
13.	Maximum switching current impulse residual voltage at 1000 A (KVp)	
14.	Maximum equivalent front wave protection level (KVp)	
15.	Maximum residual voltage at Nominal discharge current of 8/20 micro sec wave (KVp) a)5 KA b)10 KA c)20 KA	
16.	Minimum prospective symmetrical Current (KA)	
17.	High current short duration (KVp) Impulse withstand level with 4 / 10 micro sec wave (KA) peak.	

18.	Low current long duration a)Current peak (Amps) b)Virtual duration of rectangular wave (micro sec.)	
19.	Maximum radio interference voltage at 100 KHz (micro Volts / DB)	
20.	Pressure relief class	
21.	Pressure relief device capability a)High current (Amps) b)Low current (Amps)	
22.	Protective ratio	
23.	Minimum total creepage distance (mm)	
24.	Insulation withstand voltage of arrester having :	
	a)Lightning impulse withstand voltage with 1.2/ 50 micro sec. Wave (KV peak)	
	b)Switching impulse (KV peak)	
	c)One minute power frequency withstand voltage of housing (dry / wet / KV rms)	
25.	Weight of complete unit.	
26.	Overall height of complete unit from base to line side.	
27.	Minimum recommended spacing between centre to centre of LA	
28.	Minimum distance between Grounded object (mm)	
29.	Clearance required form ground Equipment at various heights of Arrester Units.	
30.	Earthing arrangement provided for earthing side of arrester.	
31.	Any other particulars	
	Signature of the Bidder Name & Seal of the company.	

SCHEDULE – II (B)**SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS (G.T.P.) OF
LIGHTNING ARRESTOR**

S.No	PARTICULARS	220KV LA
1.	Name of manufacturer	
2.	Type / Model	
3.	Applicable standards	
4.	No. of Units & ratings of each Unit	
5.	Rated Arrestors Voltage (kV rms)	
6.	Rated frequency (Hz)	
7.	Maximum continuous operating voltage (KV rms)	
8.	Maximum leakage current at Continuous Operating Voltage (micro amps) Maximum resistive component of continuous current (mA peak) Maximum capacitive component of continuous current (mA peak) Total	
9.	Temporary power frequency over voltage capacity (KV rms) a)For 0.1 sec. b)For 1 sec. c)For 10 sec. d)For 100 sec.	
10.	Nominal discharge current (kA) (8/20 micro sec wave)	
11.	Long duration energy discharge class	
12.	Minimum energy discharge capability (KJ/ KV)	
13.	Maximum switching current impulse residual voltage at 1000 A (KVp)	
14.	Maximum equivalent front wave protection level (KVp)	
15.	Maximum residual voltage at Nominal discharge current of 8/20 micro sec wave (KVp) a)5 KA b)10 KA c)20 KA	
16.	Minimum prospective symmetrical Current (KA)	
17.	High current short duration (KVp) Impulse withstand level with 4 / 10 micro sec wave (KA) peak.	

18.	Low current long duration a)Current peak (Amps) b)Virtual duration of rectangular wave (micro sec.)	
19.	Maximum radio interference voltage at 100 KHz (micro Volts / DB)	
20.	Pressure relief class	
21.	Pressure relief device capability a)High current (Amps) b)Low current (Amps)	
22.	Protective ratio	
23.	Minimum total creepage distance (mm)	
24.	Insulation withstand voltage of arrester having : a)Lightning impulse withstand voltage with 1.2/ 50 micro sec. Wave (KV peak) b)Switching impulse (KV peak) c)One minute power frequency withstand voltage of housing (dry / wet / KV rms)	
25.	Weight of complete unit.	
26.	Overall height of complete unit from base to line side.	
27.	Minimum recommended spacing between centre to centre of CT	
28.	Minimum distance between Grounded object (mm)	
29.	Clearance required form ground Equipment at various heights of Arrester Units.	
30.	Earthing arrangement provided for earthing side of arrester.	
31.	Any other particulars	
	Signature of the Bidder Name & Seal of the company.	

SCHEDULE – II(C)**SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS (G.T.P.) OF LIGHTNING ARRESTOR**

S.No	PARTICULARS	132 KV LA
01.	Name of manufacturer	
02.	Type / Model	
03.	Applicable standards	
04.	No. of Units & ratings of each Unit	
05.	Rated Arrestors Voltage (kV rms)	
06.	Rated frequency (Hz)	
07.	Maximum continuous operating voltage (KV rms)	
08.	Maximum leakage current at Continuous Operating Voltage (micro amps)	
	(a). Max. resistive component of continuous current (mA peak)	
	(b). Max. capacitive component of continuous current (mA peak)	
	(c) Total	
09.	Temporary power frequency over voltage capacity (KV rms)	
	(a). For 0.1 sec.	
	(b). For 1 sec.	
	(c) For 10 sec.	
	(d). For 100 sec.	
10.	Nominal discharge current (kA) (8/20 micro sec wave)	
11.	Long duration energy discharge class	
12.	Minimum energy discharge capability (KJ/ KV)	
13.	Max. switching current impulse residual voltage at 1000 A (KVp)	
14.	Max. equivalent front wave protection level (KVp)	
15.	Maximum residual voltage at Nominal discharge current of 8/20 micro sec wave (KVp)	
	(a). 5 KA	
	(b). 10 KA	
	©. 20 KA	
16.	Minimum prospective symmetrical Current (KA)	
17.	High current short duration (KVp) Impulse withstand level with 4 / 10 micro sec wave (KA) peak.	
18.	Low current long duration	
	(a). Current peak (Amps)	
	(b). Virtual duration of rectangular wave (micro sec.)	
19.	Max. radio interference voltage at 100 KHz (micro Volts / DB)	
20.	Pressure relief class	
21.	Pressure relief device capability	
	(a). High current (Amps)	
	(b). Low current (Amps)	
22.	Protective ratio	
23.	Minimum total creepage distance (mm)	
24.	Insulation withstand voltage of arrester having :	
	(a) Lightning impulse withstand voltage with 1.2/ 50 micro sec. Wave (KV peak)	
	(b) Switching impulse (KV peak)	

	(c) One minute power frequency withstand voltage of housing (dry / wet / KV rms)	
25.	Weight of complete unit.	
26.	Overall height of complete unit from base to line side.	
27.	Minimum recommended spacing between centre to centre of LA	
28.	Minimum distance between Grounded object (mm)	
29.	Clearance required form ground Equipment at various heights of Arrester Units.	
30.	Earthing arrangement provided for earthing side of arrester.	
31.	Any other particulars	

Signature of the Bidder
Name & Seal of the company

SCHEDULE – II(D)**SCHEDULE OF GUARANTEED TECHNICAL PARTICULARS (G.T.P.) OF LIGHTNING ARRESTOR**

S.No	PARTICULARS	33 KV LA
01.	Name of manufacturer	
02.	Type / Model	
03.	Applicable standards	
04.	No. of Units & ratings of each Unit	
05.	Rated Arrestors Voltage (kV rms)	
06.	Rated frequency (Hz)	
07.	Maximum continuous operating voltage (KV rms)	
08.	Maximum leakage current at Continuous Operating Voltage (micro amps)	
	(a). Max. resistive component of continuous current (mA peak)	
	(b). Max. capacitive component of continuous current (mA peak)	
	(c) Total	
09.	Temporary power frequency over voltage capacity (KV rms)	
	(a). For 0.1 sec.	
	(b). For 1.0 sec.	
	(c). For 10 sec.	
	(d). For 100 sec.	
10.	Nominal discharge current (kA) (8/20 micro sec wave)	
11.	Long duration energy discharge class	
12.	Minimum energy discharge capability (KJ/ KV)	
13.	Max. switching current impulse residual voltage at 1000 A (KVp)	
14.	Max. equivalent front wave protection level (KVp)	
15.	Maximum residual voltage at Nominal discharge current of 8/20 micro sec wave (KVp)	
	(a). 5 KA	
	(b). 10 KA	
	©. 20 KA	
16.	Minimum prospective symmetrical Current (KA)	
17.	High current short duration (KVp) Impulse withstand level with 4 / 10 micro sec wave (KA) peak.	
18.	Low current long duration	
	(a). Current peak (Amps)	
	(b). Virtual duration of rectangular wave (micro sec.)	
19.	Max. radio interference voltage at 100 KHz (micro Volts / DB)	
20.	Pressure relief class	
21.	Pressure relief device capability	
	(a). High current (Amps)	
	(b). Low current (Amps)	
22.	Protective ratio	
23.	Minimum total creepage distance (mm)	
24.	Insulation withstand voltage of arrester having :	
	(a) Lightning impulse withstand voltage with 1.2/ 50 micro sec. Wave (KV peak)	
	(b) Switching impulse (KV peak)	

	(c) One minute power frequency withstand voltage of housing (dry / wet /KV rms)	
25.	Weight of complete unit.	
26.	Overall height of complete unit from base to line side.	
27.	Minimum recommended spacing between centre to centre of LA	
28.	Minimum distance between Grounded object (mm)	
29.	Clearance required form ground Equipment at various heights of Arrester Units.	
30.	Earthing arrangement provided for earthing side of arrester.	
31.	Any other particulars	

Signature of the Bidder
Name & Seal of the company

SCHEDULE – III**SCHEDULE OF BIDDER'S EXPERIENCE**

Bidder shall furnish here a list of similar jobs executed by him. A reference may be made by the purchase to them in order be considers such a reference necessary.

Sl. No.	Name & Description of work. (adequate details to be given certifying the work done)	Order No. & date	Period & date of supply	Client or order placing authority	Person to whom reference to be made

Signature of Bidder

Name :

Company :

SCHEDULE- IV**Name of the manufacturer, place of manufacturer, testing and inspection**

S. No.	Description	Manufacturer	Place of manufacturer	Date of testing and inspection

Signature of Bidder**Name :****Company :**

SCHEDULE-V**COMMERCIAL INFORMATION****Strike-off, whichever is not applicable**

1.i)	Whether purchased from this office or downloaded?	Yes/No
ii)	If down loaded, whether tender cost is furnished? Details of MICR DD for tender cost	Yes/No
iii)	Amount of EMD	Rs.
iv)	Earnest Money details & GST Number & registration certificate	Bank draft/ Banker's cheque/ Cash with Manager (RAO:HQ), CSPTCL, Raipur. GST Number & Registration certificate Enclosed
v)	If exempted, state whether bidder is	SSI Unit of CG/ Small scale unit registered with NSIC/ Fully owned State Central Govt. Unit.
vi)	Reference of documentary evidence regarding exemption enclosed	Yes/ No
2.	Whether the offer is valid for 180 days from the date of opening of commercial/technical bid	Yes/ No (If no, state validity period)
3.	State whether the quoted prices are variable as per IEEMA formula as per Annexure-I.	Yes/ No
4.	Whether agreeable to clause 4.3.1 (iii) page 15 The bidder shall submit price adjustment invoices for supplies positively within three months from date of supply whether positive or negative. However, price variation bills submitted after 06 months from the date of supply will not be entertained, but negative variation will be recoverable. The invoices should be supported with calculation of price variation along with documentary evidence of applicable indices. If price adjustment works out to be positive, the same is payable to contractor by CSPTCL and if it works out to be negative, the same shall be recovered from the contractor	
5.	Rate of GST(goods and service tax)	
6.	PAYMENT TERMS:- Whether CSPTCL's terms of payment is acceptable to the bidder .	Yes/ No
7.	DELIVERY PERIOD:- Whether CSPTCL's terms of Delivery is acceptable to the bidder.	Yes/ No
8.	PENALTY CLAUSE Whether agreeable to CSPTCL's Penalty clause	Yes/ No
9.	GUARANTEE PERIOD :-	Yes/ No

	Whether agreed to CSPTCL's guarantee period of 30 months from supply or 24 months from date of commissioning whichever is earlier.	
10.	SECURITY DEPOSIT Whether agreeable to furnish CSPTCL's Standard security deposit @ 10% of value of order for satisfactory execution of the order and to cover guarantee period. (If not, indicate deviation specifically)	Yes/ No
11.	EXTENSION ORDER:- Whether you are agreeable to accept extension order for 50% of qty. on the same rates, terms & condition if any extension order is placed within 6 months from the date of placement of detailed order.	Yes/ No
12.	Please mention whether rates offered are applicable for part quantities.	Yes/ No
13.	Mention Turn-over of the firm for last five years (Enclose balance sheets in support)	
(a)	2014-15	
(b)	2015-16	
(c)	2016-17	
(d)	2017-18	
(e)	2018-19	
14.	C.A. audited self attested copy of net worth for the last three financial years submitted.	
15.	Year of start of manufacture of offered equipment/ material.	Yes/No
17.	Whether submitted Pre – contract Integrity pact	Yes/ No

Place:-

Date:-

Signature of bidder
Name in full
Designation/ status in the firm
Company seal

SCHEDULE-VI-A**SCHEDULE OF COMMERCIAL DEVIATIONS**

We/I have carefully gone through the Commercial requirement of the specification and the General condition of contract and we/I have satisfied ourselves/myself and hereby conforms to the requirement of technical specification and General Conditions of contract except for the deviations, which are given below:-

Sl. No.	Description & clause no. of the specification and page no.	Stipulation in specification	Deviation offered	Remarks regarding justification of the deviation

Dated
Place

Name and seal of the tendering Company.

SCHEDULE-VI-B**SCHEDULE OF TECHNICAL DEVIATIONS**

We/I have carefully gone through the Technical specification and the General condition of contract and we/ I have satisfied ourselves/ myself and hereby conform to the requirement of technical specification and General Conditions of contract except for the deviations, which are given below:-

Sl. No.	Description & clause no. of the specification & page no.	Stipulation in specification	Deviation offered	Remarks regarding justification of the deviation

Dated

Name and seal of the tendering Company

SCHEDULE-VII**GENERAL INFORMATION**

The bidders shall furnish general information in the following format:-

1. Name of the Firm
2. Head Office address
3. Works address
4. Contact Person
5. Mobile No. of contact person
6. Telephone No. Office
7. Telephone No. Residence
8. Fax No.
9. E-mail:-
10. PF / ESIC Registration No.

Dated

**Name and seal of the tendering
Company.**

Place

SCHEDULE-VIII-A**ANNUAL TURNOVER CERTIFICATE (To be submitted in original copy)**

Annual Turnover for the Last 5 Years	
Year	Amount in Rs.
2014-15	
2015-16	
2016-17	
2017-18	
2018-19	
Average Turnover	

**Seal and signature
of Chartered Accountant**

Seal & Signature of bidder

SCHEDULE-VIII-B**NET WORTH CALCULATION CERTIFICATE(To be submitted in original copy)**

Year	Amount in Rs.
2016-17	
2017-18	
2018-19	

**Seal and signature
of Chartered Accountant**

Seal & Signature of bidder

Note:- Net Worth of bidder for last three financial year i.e. 2016-17, 2017-18 & 2018-19 should be positive. Net worth means the sum total of the paid up capital and free reserves (excluding reserves created out of revaluation) reduced by aggregate value of accumulated losses (including debit balance in profit and loss account for current year) and intangible assets.

SCHEDULE-VIII-C**CERTIFICATE OF PAYMENT OBLIGATION AND DEFAULT**

It is certified that:-

(a) The (Bidders name) has discharged all its payment obligations (Principal/Interest) on outstanding debentures (i.e. debentures which have not yet been redeemed), if any, and no such payment as on 31.12.19 should be outstanding/ overdue.

b) The (Bidders name) is presently not in default in payment of any bank loan or interest thereon for more than three months or any loan account of the bidder should not have been classified as NPA (Non performing Assets) by the creditor/lending bank, as on date of issue of NIT.

**Seal and signature
of Chartered Accountant**

Seal & Signature of bidder

SCHEDULE-VIII-D**BIDDER'S DECLARATION**

It is certified that:-

- a) M/s (Company's name) not debarred/black listed by Bank/State Govt./Central Govt./State PSU/CPSU/SEB/ Public utility as on the date of issue of NIT.**
- b) "Any sums of money due to CSPTCL on the date of opening of tender should have been paid/settled in full prior to the date of opening of tender. Price bids of bidders not complying with the requirement shall not be opened."**
- c) We undertake that all the documents/ statements/ attachments/information submitted by M/s.....(Name of the bidder) in proof of the qualifying requirements are authentic/ genuine/ correct and in case, any of the said documents/ statements/attachments /information is found to be false / fake/ misleading the bid will be disqualified and ready for action may be taken as per relevant provisions of the tender.**

Seal & Signature of bidder

ANNEXURE- I**PRE-CONTRACT INTEGRITY PACT****1. GENERAL**

- 1.1 This pre-bid contract Agreement (hereinafter called the Integrity Pact) is made on.....day of the month20..., between the CSPTCL acting through Shri.....CE (S&P) (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in the office and assigns) and the First Party, proposes to procure (name of the Stores/Equipment/Work/Service) and M/s. represented by Shri.....Chief Executive Officer (hereinafter called the "BIDDER/Seller", which expression shall mean and include, unless the context otherwise requires, his successors on permitted assigns) and the Second Party, is willing to offer/has offered.
- 1.2 WHEREAS the BIDDER is a Private Company/Public Company/ Government undertaking/Partnership/Registered Export Agency, constituted in accordance with the relevant law in the matter and the BUYER is a power company an undertaking of Govt. of CG, performing its function on behalf of the Government of Chhattisgarh.

2. OBJECTIVES

- 2.1 NOW, THEREFORE, the BUYER and the BIDDER agree to enter into this pre-contract agreement, hereinafter referred to as Integrity Pact, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the Contract to be entered into with a view to:-
- 2.2 Enabling the BUYER to obtain the desired Stores/Equipment/Work/Service at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and
- 2.3 Enabling BIDDERS to abstain from bribing or indulging in any corrupt practices in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing any corrupt practices and the BUYER will commit to prevent corruption, in any form, by its official by following transparent procedures.

3. COMMITMENTS OF THE BUYER

The BUYER commits itself to the following:-

- 3.1 The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting of implementation process related to contract.
- 3.2 The BUYER will, during the pre-contract stage, treat BIDDERS alike, and will provide to all BIDDERS the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to the other BIDDERS.
- 3.3 All the officials of the BUYER will report the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with the full and verifiable facts and the same prima facie found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER

and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

4. COMMITMENTS OF BIDDERS

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means and illegal activities during any stage of its bid or during any pre-contract or post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

- 4.1. The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the bidding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.
- 4.2. The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage, or inducement to any official of the BUYER or otherwise in procuring the Contract of forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the CSPTCL for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the CSPTCL.
- 4.3. The BIDDER further confirms and declares to the BUYER that the BIDDER in the original Manufacture/Integrator/Authorized government sponsored export entity of the stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.
- 4.4. The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payment he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.
- 4.5. The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.
- 4.6. The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.
- 4.7. The BIDDER shall not use improperly, for purpose of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposal and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.
- 4.8. The BIDDER commits to refrain from giving any compliant directly or through any other manner without supporting it with full and verifiable facts.
- 4.9. The BIDDER shall not instigate or cause to instigate any third person to commit any of the acts mentioned above.

5. PREVIOUS TRANSGRESSION

- 5.1. The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public

Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

- 5.2. If the BIDDER makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

6. EARNEST MONEY (SECURITY DEPOSIT)

- 6.1. Every BIDDER while submitting commercial bid, shall deposit an amount as specified in RFP as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:

(i) Bank Draft or Pay Order in favour of.....

(ii) A confirmed guarantee by an Indian Nationalised Bank, promising payment of the guarantee sum to the(BUYER).....on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.

(iii) Any other mode or through any other instrument (to be specified in the RFP).

- 6.2. The Security Deposit shall be valid up to complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and BUYER, including warranty period, whichever is later.

- 6.3. In the case of successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

- 6.4. No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

7. SANCTIONS FOR VIOLATIONS

- 7.1. Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required: -

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) To forfeit fully or partially the Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed), as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

(iii) To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv) To recover all sum already paid by the BUYER, and in case of the Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate while in case of a BIDDER from a country other than India with Interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other contracts with the BIDDER and the BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from

such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

- (vii) To debar the BIDDER from participating in future bidding processes of the CSPTCL for a minimum period of five years, which may be further extended at the discretion of the BUYER.
- (viii) To recover all sum paid in violation of this Pact by BIDDER(s) to any middlemen or agent or broken with a view to securing the contract.
- (ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.
- (x) If the BIDDER or any employee of the BIDDER or any person action on behalf of the BIDDER, either directly or indirectly, is closely related to any of the officers of the BUYER, or alternatively, if any close relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender. Any failure to disclose the interest involved shall entitle the BUYER to rescind the contract without payment of any compensation to the BIDDER.

The term 'close relative' for this purpose would mean spouse whether residing with the Government servant or not, but not include a spouse separated from the Government servant by a decree or order of a competent court; son or daughter or step son or step daughter and wholly dependent upon Government servant, but does not include a child or step child who is no longer in any way dependent upon the Government servant or of whose custody the Government servant has been deprived of by or under any law; any other person related, whether by blood or marriage, to the Government servant or to the Government servant's wife or husband and wholly dependant upon Government servant.

- (xi) The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER, and if he does so, the BUYER shall be entitled forthwith to rescind the contract and all other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

- 7.2. The decision of the BUYER to the effect that a breach of the provisions of this pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Monitor(s) appointed for the purpose of this Pact.

8. INDEPENDENT MONITORS

- 8.1. The BUYER will appoint Independent Monitors (hereinafter referred to as Monitors) for this Pact.
- 8.2. The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.
- 8.3. The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.
- 8.4. Both the parties accept that the Monitors have the right to access all the documents relating to the project/ procurement, including minutes of meetings. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/ Subcontractor(s) with confidentiality.

- 8.5. As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.
- 8.6. The Monitor will submit a written report to the designated authority of BUYER/Secretary in the department/within 8 to 10 weeks from the date of reference or intimation to him by the BUYER /BIDDER and, should the occasion arise, submit proposal for correcting problematic situations.

9. FACILITATION OF INVESTIGATION

In case of any allegation of violation of any provision of this fact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the books of Account of the BIDDER and the BIDDER shall provide necessary information of the relevant documents and shall extend all possible help for the purpose of such examination.

10. LAW AND PLACE OF JURISDICTION

This pact is subject to Indian Law, the place of performance and jurisdiction shall be the seat of the BUYER.

11. OTHER LEGAL ACTIONS

The actions stipulated in this integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of any other law in force relating to any civil are criminal proceeding.

12. VALIDITY

- 12.1 The validity of this integrity Pact shall be from the date of its signing and extend up to 2 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.
- 12.2. If one or several provision of this pact turn out to be invalid; the reminder of this pact shall remain valid. In such case, the parties will strive to come to an agreement to their original intention.

13. The parties hereby sign this integrity Pact aton.....

BUYERBIDDER

Name of Officer
Destination Department/PSU

CHIEF EXECUTIVE OFFICER

Witness

Witness

1).....

2).....
.....

ANNEXURE-II

PROFORMA FOR BANK GUARANTEE TOWARDS SECURITY DEPOSIT

(To be executed on non-judicial stamp paper of Rs. 250/- and Revenue stamp may be affixed on Bank Guarantee)

Bank Guarantee No..... Dtd.....

In consideration of the Chhattisgarh State Power Transmission Company Limited, Raipur (A successor company of Chhattisgarh State Electricity Board, Raipur hereinafter referred to as 'CSPTCL') having agreed to accept this Bank Guarantee in lieu of cash deposit by way of Security for due and faithful performance required from M/s. _____ (herein after referred to as "Contractors", the Bank of _____ hereby agrees unequivocally and unconditionally to pay within 48 hours on demand in writing from the Chhattisgarh State Power Transmission Company Limited or any officer authorized by it in this behalf of any amount up to and not exceeding Rs.....(in _____ words) only to the said Chhattisgarh State Power Transmission Company Limited on behalf of the aforesaid M/s who have tendered and contracted for the supply of materials, equipments or services to the said the Chhattisgarh State Power Transmission Company Ltd, against order No..... dtd..... for the order value of Rs.....

The beneficiary of this Bank Guarantee shall be Chhattisgarh State Power Transmission Company Limited, Raipur (A Successor Company of CSEB Raipur). The proceeds / encashment of this Bank Guarantee would go in the name of Chhattisgarh State Power Transmission Company Limited, Raipur (A Successor Company of CSEB Raipur).

This agreement should be valid and binding on this bank upto and including _____ 2001 of for such further period as may hereunder be mutually fixed from time to time in writing by the Chhattisgarh State Power Transmission Company Ltd. and the contractor and shall not be terminable by notice or any change in the constitution of the aforesaid bank or the firm of Contractors or by any others reasons whatsoever and the Banker's liability hereunder shall not be impaired or discharged by any extension of time or variations or alteration made, given conceded or agreed to with or without the Bank knowledge or consent by or between the Chhattisgarh State Power Transmission Company Ltd. and contractor in the existing and / or further tenders and / or contracts.

It is agreed by the Bank with the CSPTCL that if for any reason a dispute arises concerning the Bank's liability to pay the requisite amount to the CSPTCL under the terms of this guarantee the competent court at Raipur alone shall have the jurisdiction to determine the said dispute and that this shall be without prejudice to the liability of the Bank under the terms of this guarantee being unequivocal and unconditional as mentioned above.

The liability under this guarantee is restricted to Rs..... (in words) only. This guarantee shall remain in force until Unless a demand to enforce a claim under the guarantee is made under this Bank Guarantee by the CSPTCL to the Bank within six months from that date the rights of the Chhattisgarh State Power Transmission Company Ltd. under this guarantee shall be forfeited and Bank shall be relieved and discharged from all liabilities thereunder.

WITNESSES:-

- 1. Signed. _____
- 2. for _____

SIGNATURES
Authorized Signatories of Bank

Bank

ANNEXURE- III (IEEMA)**Indian Electrical & Electronics Manufacturers' Association**501, Kakad Chambers, 132, Dr. A. Besant Road, Worli, Mumbai 400 018, India.
Tel: +91 (0) 22 493 6528, 493 6529. Fax: +91 (0) 22 493 2705. E-Mail: mumbai@ieema.org
website: <http://www.ieema.org>

Cir. No. 452/DIV/LA/05

08.11.2001

To : All Members of Lightning Arrester Division.
Members on the CHARG PVC mailing list for Lightning Arrester.
SEBs & Listed Purchasing Organisation.

**Sub: Price variation clause for Zinc Oxide Gapless
Lightning Arrester**

We have circulated price variation clause of Lightning Arrester effective from 1st September 2001 vide our circular. No.398/DIV/LA/05 dt. 04.10.2001.

Kindly note that in description of Consumer Price index number (W), the word "Tendering" should be replaced with "Delivery".

We enclose herewith a copy of price variation formula incorporating above change.

We therefore request you to treat our circular No. 398 as cancelled.

Executive Officer

Nr/Nilesh/mydoc/lanew.doc



Indian Electrical & Electronics Manufacturers' Association

501, Kakad Chambers, 132, Dr. A. Besant Road, Worli, Mumbai 400 018, India.
Tel: +91 (0) 22 493 6528, 493 6529. Fax: +91 (0) 22 493 2705. E-Mail: mumbai@ieema.org
website: <http://www.ieema.org>



IEEMA/PVC/ARSTR/2001

Effective from : 1st September 2001

PRICE VARIATION CLAUSE FOR ZINK OXIDE GAPLESS LIGHTNING ARRESTER

The price quoted/confirmed is based on the input cost of raw materials/components and labour cost as on the date of quotation and the same is deemed to be related to prices of raw materials and all India average consumer price index number for industrial workers as specified in the price variation clause given below in case of any variation in these raw material prices/indices, the price payable shall be subject to adjustment up or down, in accordance with the following formula:

$$P = \frac{P_0}{100} \left[20 + 15 \frac{ZN}{ZN_0} + 15 \frac{CO}{CO_0} + 10 \frac{BI}{BI_0} + 10 \frac{BC}{BC_0} + 10 \frac{FP}{FP_0} + 15 \frac{W}{W_0} + 5 \frac{AL}{AL_0} \right]$$

Wherein,

P = Price payable as adjustable in accordance with the above formula.

P₀ = price quoted/confirmed

ZN₀ = Price of electrolytic high grade zinc (refer note).

This price is as applicable on the first working day or the month, one month prior to the date of tendering.

CO₀ = Price of Cobalt (refer notes)

This price is as applicable on the first working day of the month, one month prior to the date of tendering.

BI₀ = Price of Bismuth (refer notes)

This price is as applicable on the first working day of the month, one month prior to the date of tendering.

BC₀ = Price of Ball Clay (refer notes)

This price is as applicable on the first working day of the month, one month prior to the date of tendering.

AL₀ = Price of Aluminium Ingots (refer notes)

This price is as applicable as the 1st working day of the month, one month prior to the date of tendering.

FP₀ = Wholesale price index number for fuel, power, Light & Lubricants (refer notes).

This index number is as applicable for the 1st Saturday of the month, three months prior to the date of tendering.

W₀ = All India average consumer price index number for industrial workers, as published by the Labour Bureau, ministry of Labour, Govt. of India (Base 1982 = 100)

This index number is as applicable for the month, three months prior to the date of tendering.

IEEMA/PVC/ARSTR/1/3

50 years in the service of the industry

IEEMA/PVC/ARSTR/2001

Effective from : 1st September 2001

For example, if the date of tendering falls in May 2001, the applicable basic price of raw materials i.e. ZN_o, CO_o, BI_o, AL_o and BC_o should be as circulated by IEEMA as on 1st April 2001 and the applicable wholesale price index number for fuel, power, light and lubricants (FP_o) should be for the week ending 1st Saturday of the month of February 2001 and all India average consumer price index number (W_o) should be for the month of February 2001.

The above prices and indices are as published by IEEMA vide circular reference number IEEMA(PVC)ARSTR/_/_ prevailing as on first working day of the month i.e., one month prior to the date of tendering.

- ZN = Price of electrolytic high grade zinc (refer notes)
This price is as applicable for the first working day of the month, two months prior to the date of delivery.
- CO = Price of Cobalt (refer notes)
This price is as applicable for the first working day of the month, two months prior to the date of the delivery.
- BI = Price of Bismuth (refer notes)
This price is as applicable for the first working day of the month, two months prior to the date of delivery.
- BC = Price of Ball Clay (refer notes)
This price is as applicable for the first working day of the month, two months prior to the date of delivery.
- AL = Price of EC Grade Aluminium Ingots (refer notes)
This price is as applicable for the first working day of the month, two months prior to the date of delivery.
- FP = Wholesale price index number for Fuel, Power, Light & Lubricants (refer notes)
This index number is as applicable for the 1st Saturday of the month, four months prior to the date of delivery.
- W = All India average consumer price index number for industrial workers, as published by the Labour Bureau, ministry of Labour, Govt. of India (Base 1982 = 100).
This index number is as applicable for the month, four months prior to the date of delivery.

If the date of delivery in terms of clause given below falls in December 2001, the applicable price viz: ZN, CO, BI, BC and AL should be those as published by IEEMA prevailing as on 1st October 2001 and the applicable wholesale price index number (FP) and all India average consumer price index number (W) both should be for the month of August 2001.

The date of delivery is the date on which the lightning arresters are notified as being ready for inspection/despatch (in the absence of such notification, the date of manufacturer's despatch note is to be considered as the date of delivery) or the contracted delivery date (including any agreed extension thereto whichever is earlier).

SCHEDULE – X**CHECK LIST**

Please check following documents, before submission of Techno commercial Bid.

S. No.	Particular	Whether submitted / not submitted	Mention page no. of Techno commercial Bid submitted
01	Bank draft/Banker's cheque of tender cost (if downloaded)		
02	Bank draft/Banker's cheque of Earnest Money Deposit, (if exempted, than reference of documentary evidence regarding exemption shall be submitted as per tender requirement)		
03	Self attested copy of SSI/NSIC/MSI certificate as per tender requirement (if applied)		
04	Self attested copy of Factory license		
05	Supply experience:- Please submit purchase order copy older than three year from date of issue of NIT for all type of LA . Also attach Material receipt certificate/ performance certificate alongwith relevant Purchase order copy enclosed. The purchase order should be issued by following Indian entities:- i.) Power utilities owned and controlled by Central or State Govt., Or ii.) PSUs, Or iii.) Govt. Organizations. (Example :- if date of issue of NIT is 01.01.2020, than material should be supplied to the entity mentioned above before 31.12.2017) for three years experience.		
6.	Performance certificate:- Self attested copy of certificate of satisfactory performance for minimum 02 years as on the date of NIT should be furnished for respective 390KV, 220KV,132 KV & 33 KV or higher voltage class Lightning Arrestor as on date of issue of NIT in the aforesaid entities.		
7.	Type test certificates:- Please submit self attested copy of the type test certificates of tendered item/ materials as per relevant standards i.e. ISS/ IEC carried out at & issued by NABL accredited laboratory / International laboratories like KEMA or equivalent. The type test certificate of tendered item/ materials shall not be more than ten years old as on the date of issue of NIT . The makes/ models of Lightning Arrestor proposed to be offered by the bidder should be mentioned in the TC bid. Insulation withstand test(as per clause 6.2 of IS 3070 part III). Please submit all valid type test certificate as per relevant standards i.e IS/ IEC of for 400KV, 220 KV,132KV and 33 KV LA separately 1. Insulation withstand test (as per clause 6.2 of IS 3070 part III) 2. Residual voltage test(as per clause 6.4 of IS 3070 part III) 3. Long duration current impulse test(as per clause 6.5 of IS 3070 part III) 4. Operating Duty cycle(as per clause 6.6 of IS 3070 part III) 5. Pressure relief test(as per clause 6.7 of IS 3070 part III) 6. Artificial pollution test(as per annexure-I of IS 3070 part III) 7. Temperature cycle test on hollow porcelain housing(Annexure-H of IS:3070 part-III) 8. Porosity test on porcelain housing(Annexure-H of IS:3070 part-III) 9. Galvanizing test on exposed ferrous metal parts((Annexure-H of IS:3070		

	part- III)		
08.	C.A. audited, self attested Copies of F.Y. 2014-15, 2015-16, 2016-17, 2017-18 & 2018-19 as below. i) Balance sheet ii) Annual profit & loss statement iii) Annual turnover:- The bidder shall submit Self attested copy of Turn over for the last five financial years certified by Chartered Accountant (Schedule-VIII-A).		
09	Self attested copy of net worth for the last three financial years certified by Chartered Accountant.(Schedule VIII-B)		
10	The bidder shall submit Self attested copy of undertaking certified by Chartered Accountant.(Schedule VIII-C)		
11	A self attested copy of declaration shall be furnished by the bidder. (schedule-VIII-D).		
12	The bidder shall have to submit pre-contract integrity pact in the format enclosed as Schedule IX on non-judicial stamp paper worth Rs.300/- duly signed by the bidder.(ANNEXURE-I).		
13	Schedule I- Un-priced hard copy (The prices shall be quoted in price tab of e bidding module only).		
14	Schedule II to Schedule VII & Schedule IX, duly filled, signed, sealed and certified (whereas required) alongwith documents as per tender requirement.		
15	All the technical documents as desired in tender document		
16	Copy of power of attorney		
17	RTGS details alongwith cancelled cheque for futre references.		
18	To avoid rejection, please read tender document carefully and refer tender document for submission of any Further document/schedule/ annexure which is not covered in point 01 to 17.		

“EXTREMELY IMPORTANT (Bidders to note this to avoid rejection)

i) Attention of bidders is drawn to the fact that no additional /new documents will be allowed to be submitted after bid submission with only exception that clarifications/ confirmations on the points which lack clarity after techno-commercial evaluation may be obtained. Bidders are therefore, requested to exercise utmost care to make sure that all the documents required as per eligibility criteria/PQR/techno-commercial requirements of the tender are submitted with their bid on or before the date of bid submission. The bid submission of all the documents required as per tender conditions/requirements and the bidder must adhere to the deadline.

ii) It may also be noted that if a bidder has quoted ‘NIL’ deviation in the bid, this will have an overriding effect on any other conditions noted as deviations elsewhere in the bid and no correspondence will be made to withdraw such specific contradictory conditions.