



TRANSMISSION CORPORATION OF TELANGANA STATE LIMITED

VIDYUT SOUDHA :: HYDERABAD

(Website:TSTransco.in. CIN No.U40102TG20148SGC094248)

From
The Chief Engineer/P&MM,
TSTransco,
VidyutSoudha,
Hyderabad – 500 082

To
M/s Lamco Industries Pvt Ltd.,
B-39 & 40, Industrial Estate,
Sanathnagar,
Hyderabad- 500 018

SAP.PO.No.4500003103/2022/Web PO.No.716/CE(P&MM)/SE(P&MM)/DE11/TSPMM11-02/2022/
F:LAAs/D.No.24/22,Dt:12.05.2022.

Sirs,

Sub: Tender Specification No. TSPMM11-02/2022 – Supply of 33kV & 132kV
Lightning Arrestors – Detailed Purchase Order - Issued – Reg.

- Ref: 1. Tender Specification No. TSPMM11-02/2022 on e-procurement platform.
2. Your offer against Tender Specification No.TSPMM11-02/2022 on e - platform.
3. Your Lr. No. LAMCO/3962/2022-2023/2016, dtd.18.04.2022
4. LOI No. CE(P&MM)/SE(P&MM)/DE11/TSPMM11-02/2022/F:Lightning
Arrestors/D.No.20/22,Dt:28.04.2022.
5. Your Lr. No.LAMCO/3962/2022-2023/KB/2054, dt:30.04.2022.

I, acting for and on behalf of and by the order and direction of TRANSMISSION CORPORATION OF TELANGANA LIMITED (herein after called the 'TSTransco), accept your offer against Tender Specification under ref (2) cited read along with your letter under ref(3) cited for supply of equipment detailed in clause (2) below with the terms and conditions as per the Tender Specification No. TSPMM11-02/2022. This Purchase Order is issued in confirmation of the Letter of Intent issued vide ref (4) cited, accepted by you vide ref (5) cited

SCOPE OF CONTRACT:

This contract relates to the supply of Item-I: 351Nos- 33kV Lightning Arrestors & Item-II: 184 Nos. 132kV Lightning Arrestors in clause (2) below and covers design, manufacture, testing before dispatch and delivery free at destination substations/ stores (FADS) as detailed in this order.

1. SCHEDULE OF EQUIPMENT & PRICES:

Supply of 33kV and 132kV Zinc oxide gapless Lightning Arrestors conforming to latest IEC/IS, complete with Terminal Connectors suitable for single Moose conductor and as per Technical specification as per the price break-up indicated below

The price break-up details are as below.

All Financial Figures are in Rs.

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Sl. No.	Description	33kV Lightning Arrestors (HSN Code: 85354010)	132kV Lightning Arrestors (HSN Code: 85354010)
1	Ex-Works	4,400.00	30,800.00
2	Packing & Forwarding	Inclusive	Inclusive
3	Freight & Insurance	400.80	1,200.40
4	Total Taxable Unit Rate	4,800.80	32,000.40
5	GST @ 18% (CGST@9% + SGST @ 9%) on Ex-Works + Freight + Insurance	864.14	5,760.07
6	Unit FADS Price including Taxes	5,664.94	37,760.47
7	Quantity (Nos.)	351	184
8	Total Amount	19,88,393.94	69,47,926.48
9	Grand Total	89,36,320.42	
Rupees Eighty Nine Lakhs Thirty Six Thousand Three Hundred and Twenty and Paise Forty Two Only.			

- The prices of equipment accepted are **FIRM** and FOR delivery destination stores/ site.
- The price is inclusive of all incidental charges such as Packing, Forwarding, Handling, Loading, Unloading and other incidentals.
- Freight & Insurance will be reimbursed on submission of documentary proofs only.
- The dispatch of equipment is by road only. The transit insurance shall be at least for an amount equal to 100% of the cost of the goods and include storage cover for 45 days at stores/site.
- It is to note that the prices are with the present rate of GST @ 18% (CGST 9% + SGST 9%) on the total of Ex- Works, Freight and Insurance.
- The TSTransco shall have the right to vary the ordered quantity by +/- 50% at any time during the execution of the order.
- TCS at prevailing rates is applicable on any payment made, if company's aggregate sales consideration during the relevant financial year exceeds Rs.50 Lakhs and total sales, gross receipts or total turnover including GST if any exceeds Rs.10 Crores in the financial year immediately preceding the financial year of subject sales.
The payment of TCS shall be subjected to furnishing of necessary documents. The stipulated conditions are to be verified by the DDOs while processing the bills.
The PAN No. of TS TRANSCO is AAFCT0166J.
- If any payment is made erroneously, TSTransco reserves the right to recover the same from your future bills/BGs.

2. DELIVERY:

33kV Lightning Arrestors: To commence the supplies with 60 Nos. within two months from the date of issue of Letter of Intent and complete balance @ 60 Nos. per month thereafter.

132kV Lightning Arrestors: To commence the supplies with 40 Nos. within two months from the date of issue of Letter of Intent and complete balance @ 40Nos. per month thereafter

3. PERFORMANCE SECURITY:

Performance Security shall be furnished in the name of TSTransco for an amount of 10% of the contract value (i.e.) **Rs.8,93,632.00/-** for proper fulfillment of the contract, which will include the warranty period and completion of performance obligations including Warranty obligations. The Performance security will cover 60 days beyond the date of completion of performance obligations including Warranty obligations.

In the event of any correction of defects or replacement of defective material during the warranty period, the warranty for the corrected/replaced material will be extended to a further period of 12 months and the Performance Bank Guarantee for proportionate value will be extended 60 days over and above the extended warranty period. The proceeds of the performance security will be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

The performance security will be...

- (a) A Bank Guarantee issued by State Bank of India or its associate Banks/Nationalised Banks acceptable to the Purchaser, in the form provided in the bidding documents.
- (b) A banker's cheque or crossed DD or Pay Order payable at the head quarter of the Purchaser in favour of the Pay officer drawn on any scheduled Bank.

It is entirely your responsibility to extend the validity of this Bank Guarantee to cover the period of guarantee well before its expiry.

4. PAYMENT:

- a) 100% payment will be arranged through PFC/REC/Banks/TSTRANSCO/Bulk Load funds within 45 days reckoned from the check-measurement date in Form-13.
- b) For payment through Real Time Gross Settlement (RTGS) the details of Bank Account are as below.

(i)	Company Name	M/s Lamco Industries Pvt Ltd.,
(ii)	Name of the Bank	State Bank of India
(iii)	Branch Address	Industrial Estate, Santhnagar, Hyderabad- 500 018.
(iv)	Branch Code	20076
(v)	City	Hyderabad
(vi)	Account No.	52087819364
(vii)	MICR Code	500002352
(viii)	IFSC Code	SBIN0020076
(ix)	PAN No.	AAACL3464A
(x)	GST No.	36AAACL3464AIZY

- c) The 100% payment mentioned above is subject to submission of performance security by the supplier as per clause (4) above.
- d) The supplier should invariably submit acceptance and routine test certificates and other documents the purchaser specifies before the dispatch is made so that they can be checked and approved well in advance.
- e) The performance guarantee to be executed in accordance with this specification will be furnished on a stamp paper of value Rs.100/-. The Bank Guarantee will be extended if required suitably in accordance with the provisions of Performance Security clause of the specification.
- f) If the supplier has received any over payments by oversight or if any amounts are due to the TSTransco due to any other reasons, when it is not possible to recover such amounts under the contract resulting out of this specification, TSTransco reserves the right to collect the same from any other amount due to the supplier and / or Bank Guarantees given by the company due to or with TSTransco.
- g) When the supplier does not at any time, fulfill his obligations in replacing / rectifying etc. the damaged / defective materials in part or whole promptly to the satisfaction of the TSTransco Officers, TSTransco reserves the right not to accept the bills against subsequent dispatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damage occurring to the consignments so dispatched.
- h) Any incidental charge such as stamp duty, bank charges etc., shall be to the Supplier's account and any charges in relation there to shall not be included in the bills submitted to TSTransco's Paying Officer through Banks.
- i) All payments will be made in non-convertible Indian Rupees.
- j) The Bank details as above are final and shall not be revoked under any circumstances.

5. RESPONSIBILITY OF THE SUPPLIER FOR LOSS/DAMAGE:

- a) The supplier is responsible for the safe delivery of the goods in good condition at the destination. He should acquaint himself of the conditions obtaining for handling and transport of the goods to destination and shall include and provide for security and protective packing of the goods so as to avoid damage in transit.
- b) External damages or shortages that are prima facie the results of rough handling in transit or due to defective packing will be intimated within a fortnight of the receipt of the materials. Internal defects, damages or shortages of any internal parts which cannot ordinarily be detected on a superficial visual examination will be intimated subsequently. In either case, the defective or damaged materials should be replaced by the supplier free of cost to the TSTransco. If no steps are taken within 15 days of receipt of intimation of defects or such other reasonable time as the TSTransco may deem proper to afford, TSTransco may without prejudice to its other rights and remedies cause to be repaired or rectified the defective material or replace the same and recover the expenditure incurred there for from the deposit such as Earnest Money, Security and Performance or other monies available with TSTransco or by resorting to legal action.
- c) For the purpose of any legal constrution, the material shall be deemed to pass into TSTransco's ownership only at the final destination where they are delivered and accepted.

6. PENALTY FOR LATE DELIVERY:

- a) The delivery period as per agreed delivery schedule shall be deemed to be the essence of the contract. In case of delay in delivery of materials beyond the agreed delivery schedule or to perform the services within the period specified in the contract whatever be the reason the TSTransco may at its option, demand and recover from the supplier from the contract price, as liquidated damages, a sum equivalent to 0.5% per week or part thereof on the value of the undelivered portion subject to a maximum of 5% of total value of contract.
- b) For penalty, the number of days of delay would be rounded off to the nearest week and penalty calculated accordingly.
- c) Equipment which is not of acceptable quality (or) not confirming to specification would be deemed to be not delivered.
- d) The penalty specified will be levied and would be adjusted against subsequent pending bills.

- e) The check measurement date in Form-13 i.e., the date of receipt of equipment at the destination stores in good condition will be taken as date of delivery.

7. FORCE MAJEURE:

- a) The Supplier will not be liable for forfeiture of its performance security, penalty for late delivery or termination for default if and to the extent that it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.
- b) For the purpose of this clause 'Force Majeure' means an event beyond the control of the Supplier and not involving the Suppliers' fault or negligence and not foreseeable. Such events may include but are not restricted to wars or revolutions, fires, floods, epidemics, earth quakes, Tsunami, quarantine restrictions and freight embargoes.
- c) If the Force Majeure situation arises, the supplier will promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier will continue to perform its obligations under the Contract as far as is reasonably possible, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

8. TERMINATION FOR DEFAULT :

- a) The Purchaser without prejudice to any other remedy for breach of Contract, by written notices of default sent to the Supplier, may terminate this Contract in whole or part:
 - i) If the Supplier fails to deliver any or all of the Materials/equipment within the period(s) specified in the Contract, or within any extension thereof granted by the Purchaser.
 - ii) If the supplier fails to perform any other obligations under the contract.
 - iii) If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.
- b) In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Materials/equipment or services similar to those undelivered and the Supplier will be liable to the Purchaser for any excess costs for such similar Materials/equipment or Services. However, the Supplier will continue performance of the Contract to the extent not terminated.

9. TERMINATION FOR CONVENIENCE:

- a) The Purchaser, by written notice sent to the supplier may terminate the contract, in whole or in part, at any time for its convenience. The notice of termination is for the Purchaser's

convenience, the extent to which performance of the supplier under the contract is terminated, and date upon which termination becomes effective.

- b) However the materials/equipment that are complete and ready for shipment within thirty (30) days after the supplier's receipt of notice of termination will be accepted by the Purchaser at the contract terms and prices.

10. TERMINATION FOR INSOLVENCY:

The Purchaser may at any time terminate the Contract by giving written notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In this event, termination will be without compensation to the supplier, provided that such termination will not prejudice or not affect any right of action or remedy, which has accrued or will accrue thereafter to the Purchaser.

11. WARRANTY:

The equipment/ material shall be guaranteed for satisfactory performance for a period of 18 months from the date of receipt of material/equipment at destination site/ TLC stores in good condition against defects proved to be due to faulty design of material/ workmanship. If during this period, any of the material is found defective they shall be repaired or replaced by you free of all costs to the TSTransco. To and fro freight charges shall also be to your account only.

12. TAXES:

Taxes as indicated in the price schedule at paragraph (2) are applicable. You shall agree, that if, at any time, any GST reported to have been paid has not been paid, or a lesser amount has been paid, or on subsequent adjudication or appeal or revision it is decided that a lesser amount is payable, you shall refund such amounts irrespective of time lag.

13. STATUTORY VARIATIONS:

Any variation up or down in statutory levy or new levies introduced after signing of the contract under this specification will be to the account of TSTransco, provided that in cases where delivery schedule is not adhered to by the supplier and there are upward variation/ revision after the agreed delivered date, the supplier will bear the impact of such levies and if there is downward variation / revision the TSTransco will be given credit to that extent. Statutory variation if any allowed, it is allowed only once during delivery period, i.e. at the time of delivery of goods at factory. In case of sub-vendor items, taxes & duties are inclusive in tender price and no statutory variation is applicable.

In cases where the bidder assumes less tax rates and become lowest, upward variation of taxes will not be considered. In case of the bought out items for which the prices are quoted all inclusive of taxes, statutory variation shall not be applicable.

14. DISPATCH INSTRUCTIONS:

The dispatch instructions for the equipment will be furnished separately on satisfactory scrutiny of acceptance test certificates. The prices indicated in clause (2) above shall remain unaltered whatever be the destination.

15. INSPECTION:

After completion of manufacture of the equipment/ material, routine tests shall be performed as per relevant standards and requisite copies of test certificates shall be furnished to the purchaser. Various components of the equipment shall be routine tested in accordance with approved standards and manufacture standards.

As soon as the material/ equipment are ready the supplier will duly send intimation to TSTransco by post/fax and carry out the tests in the presence of the representative of TSTransco. The Supplier shall give at least 15 days advance intimation to enable the Purchaser to depute his representative for witnessing acceptance and routine tests. All charges in connection with inspection shall be borne by the supplier.

The equipment should not be dispatched without final inspection of the tests, approval of test certificates and issue of specific dispatch instructions or specific waiver thereof from this office. The equipment shall reach the destination store/site within three weeks of issue of Dispatch Instructions.

16. CONTRACT DRAWINGS:

Approval by TSTransco to the supplier's drawings shall not relieve the supplier of his responsibility for correctness thereof or from results arising out of error or omission therein or from any obligation or liability under the contract. Any supplementary drawings necessary to permit the complete design of the installation prior to receiving the equipment shall also be supplied. Within two weeks of approval, six sets of all approved drawings and soft copy of drawings shall be furnished. One set of drawings and instruction manuals along with soft copy shall be sent along with each equipment at the time of dispatch. Copies of the drawings and manuals shall also be sent to other offices as indicated below.

Consignee	:	One set of approved drawings per consignee
Concerned Executive Engineer	:	Two Sets
To this office	:	Six sets.

17. ERECTION, OPERATION & MAINTENANCE MANUALS:

Erection, operation and maintenance manuals along with soft copy shall be supplied as per distributions given below giving detailed instructions with illustrations along with the equipment. They shall contain clear recommended schedule of maintenance for the guidance

of the operating staff. Any items requiring the special attention of the operation engineer should be highlighted.

Consignee : One set per consignment

Concerned Executive Engineer : Two sets

To this office : Six sets

These shall be sent to the Divisional Engineers / Executive Engineers concerned.

18. COMPLETENESS OF CONTRACT:

All minor accessories that are normally necessary for satisfactory and efficient operation of the equipment shall be supplied by you free of cost to the TSTransco whether these are specifically mentioned or not in the specification, your tender schedules or in this purchase order and the equipment shall be complete in itself.

19. GENERAL CONDITIONS OF CONTRACT:

Except in so far as it is provided otherwise in this contract, you shall abide by the terms and conditions appended to the specification. Except as specifically accepted in this order the terms and conditions mentioned in your quotation under reference are not accepted.

20. RISK:

The risk in the property is entirely yours till the goods are received in good condition at the destination.

21. PACKING:

Each of the material/equipment shall be securely packed separately in such a manner as to withstand rough handling during rail and road transit up to site and as per latest IS/BSS/IEC.

22. TESTS & TEST CERTIFICATES:

All routine tests in accordance with relevant ISS/BSS/IEC specifications shall be conducted on the equipment. You shall intimate this office at least 15 days in advance as to the date when you propose to conduct the acceptance tests for deputing TSTransco's representative to witness the tests. Three copies of the test certificates containing the results of all the acceptance tests along with routine tests carried out shall be furnished for approval.

The test certificates shall be submitted immediately after the tests are conducted and got approved before the equipment is dispatched.

23. MATERIAL & WORKMANSHIP:

All the materials shall be of the best class and shall be capable of satisfactory operation in the tropics under service conditions without distortion or deterioration. No welding or filling or plugging of defective parts shall be permitted, unless otherwise specified they shall conform to the requirement of the appropriate Indian, British or American standards (where a

standard specification covering the material in question has not been published the standards of the American society for testing of materials should be followed).

The entire design and construction shall be capable of withstanding the several stresses likely to occur in actual services and of resisting rough handling during transport.

24. INSURANCE:

As insurance charges are included in your prices you should cover the equipment against transit risks and also for further period of 45 days towards storage from the date of receipt of equipment at site. It is entirely your responsibility for arranging the insurance through your underwriters. The damages and shortages will be intimated to you as stipulated in purchase order and you shall arrange for replacement/repairs immediately without awaiting settlement from insurance authorities.

Note: The material will not be taken into stock unless documentary evidence for Freight and Insurance is furnished along with material.

25. INTERCHANGEABILITY :

All similar equipment and removable parts of similar equipment shall be interchangeable with each other.

26. SPARES:

You shall supply any spares required for the equipment that will be supplied under this order, whenever called upon to do so at fair prices and at the TSTransco's standard terms of payment within a period not exceeding the deliveries accepted therein.

27. PROGRESS REPORTS:

You shall furnish the program of works and progress reports on the manufacture of equipment to this office every month in triplicate till the supplies are completed.

28. CORRESPONDENCE:

- a) Your acknowledgement of this order and all correspondence of general or technical nature shall be addressed to the Chief Engineer/P&MM, TSTransco, Vidyut Soudha, Hyderabad –500 082.
- b) All correspondence regarding dispatches, payments and any other field matters shall be addressed to the concerned paying officer. Copies of such correspondence shall be marked to the concerned Superintending Engineer and to the Chief Engineer/P&MM, TSTransco, Vidyut Soudha, Hyderabad – 500 082. Copies of the correspondence regarding payments should also be marked to the Executive Director/Finance, TSTransco, Vidyut Soudha, Hyderabad – 500 082.

29. JURISDICTION:

All and any disputes or differences arising out of or touching this order shall be decided only by courts or tribunals situated in Hyderabad or Secunderabad cities. No suit or other legal proceedings shall be instituted elsewhere.

30. SUPERVISION OF ERECTION, TESTING AND COMMISSIONING:

You have to provide services of qualified personnel for supervision of erection, testing at site and commissioning of the equipment wherever required. The above services should be provided free of cost as per the tender specification.

31. ACKNOWLEDGEMENT:

Please acknowledge the receipt of this purchase order with your confirmation of its acceptance by you and the extra copy enclosed may please be returned with your signature in token of your acceptance.

Encl: GTP

Yours faithfully,

SD/-

Chief Engineer/P&MM

(Acting for and on behalf of TSTRANSCO)

WE ACCEPT THE TERMS AND CONDITIONS OF THIS PURCHASE ORDER

**SIGNATURE OF THE CONTRACTOR
WITH SEAL AND DATE**

Copies to:

The Executive Director/Finance/ TSTransco /Vidyut Soudha/Hyderabad.

The Chief Engineer/Transmission/TSTransco/Vidyut Soudha/Hyderabad.

The Superintending Engineer/Transmission/ TSTransco /Vidyut Soudha/Hyderabad.

The SAO/Pay & accounts/ TSTransco /Vidyut Soudha/Hyderabad along with Form-40.

The Superintending Engineer/OMC/Metro-Central/ TSTransco /2nd Floor,132kV NIMS GIS SS premises/ Erramanzil/Panjagutta/Hyderabad -82

The Superintending Engineer/Quality Control/ TSTransco /Vidyut Soudha/Hyderabad

The SAO/Metro-Central /TSTransco /2nd Floor, 132kV NIMS GIS SS premises/ Erramanzil/ Panjagutta/Hyderabad -82.

The Divisional Engineer/Transmission &Stores/Metro/Erragadda/ Hyderabad, 500 045.

Copy of this PO is available on <http://tgto.telangana.gov.in/>

This order is placed against the indents indicated below:

Sl. No.	CE/Transmission Reference UO.No.	Required for RMI/ Augmentation /DC Works/Rolling Stock	33kV Lightning Arrestors	132kV Lightning Arrestors
1	D.No.11/20, Dt.06.04.2020	Augmentation at 132kV Thirumalaipally SS & 132kV Geesukonda SS.	-	3
2	D.No.111/20, Dt.02.06.2020	Erection of 6No. Bays at 220kV Fabcity SS, 132kV Mamidipally SS and 132kV Takkalapally SS.	18	-
3	D.No.157/20, dt:23.06.2020	Augmentation work at 220 KV Manthami SS & 132 KV Kataram SS.	-	3
4	D.No.173/20, dt:30.06.2020	Augmentation work at 400 KV Narsapur SS.	-	3
6	D.No.305/20, dt:29.09.020.	Erection of 2 Nos Bays(Kothur, Srirangapur).	6	-
7	D.No.345/20, dt:14.10.2020	(Augmentation at 132kV Dharmasagar SS in Warangal Zone, 132kV KarimnagarSS, 132kV Pudur SS, 132kV Dharmaram SS, 132kV KathlapurSS, 132kV Chippalapally SS and 132kV Korutla, 132kV Shanigaram in Karimnagar Zone.	12	12
8	D.No.593/20, dt:19.01.2021	Shifting of 33kV Bus and 33kV feeder bay at 132/33kV Sirpurkagaznagar SS.	3	-
9	D.No.644/20, dt:08.02.2021	Augmentation at 132kV SS Mylardevpally.	3	3
10	D.No.649/20, dt:13.02.2021	replacement of old equip at 132/33kV Manoharabad SS.	6	-
11	D.No.789/20, dt:31.03.2021	Shifting of 6Nos. 33kV feeders at 220kV Shivarampally SS.	6	-
12	D.No.34, dt:19.04.2021	Augmentation at 132kV Pashmailaram SS.	3	3
13	D.No.76/21, dt:30.04.2021	Erection of 4Nos. New bays for TSSPDCL at 220kV SS Shivarampally DC work.	12	-
14	D.No.47/21, dt:20.04.2021	Augmentation works at 400 kV SS Suryapet.	-	3
15	D.No.74/21, dt:30.04.2021	132 KV SS Dasnagar under DC Works.	3	-
16	D.No.75/21, dt:30.04.2021	220 kV SS Manuguru SS under DC works.	3	-
17	D.No.91/21, dt:11.05.2021	Augmentation works at 132kV Mamidipally SS, 132kV Jadcherla SS, 132kV Munagala SS, 132kV Domakonda SS, 132kV Godur SS.	3	3
18	D.No.203/21, dt:07.07.2021	Rolling stock FY:2021-22.	250	100
19	D.No.328/21, dt:19.08.2021	Augmentation work at 220kV Huzurabad SS	-	3
20	D.No.360/21, dt:30.08.2021	DC work at 132 kV Penubally SS(Erection of 1 No. Bay for M/s Singareni Collieries)	3	-
21	D.No.515/21, dt:12.11.2021	DC work at 132 kV Narmetta, 132kV Palakurthy, 132kV Dharmasagar and 220kV Waddekothapally SS(Erection of 33kV Bays)	12	-
22	D.No.581/21, dt:08.12.2021	Augmentation of 220/132kV PTRs at 5 Nos. EHT SS (220kV Jangaon SS, 220kV Mahabubabad SS, 220kV Bheemgal SS & 220kV Jagityal SS).	-	12
23	D.No.582/21, dt:08.12.2021	Augmentation of 132/33kV PTR Capacity 24 Nos. EHT Substations	8	24
Total			351	172+ 12(old indents 2019) =184

GENERAL TECHNICAL PARTICULARS

Sl. No.	Particulars	33kV LIGHTNING ARRESTOR	132kV LIGHTNING ARRESTOR
1	Name of Manufacturer		
i)	Lightning Arrestor	Lamco Industries Pvt Ltd., B-39, I.E. Sanathnagar, Hyderabad-18 (T.S)	Lamco Industries Pvt Ltd., B-39, I.E. Sanathnagar, Hyderabad-18 (T.S)
ii)	ZnO Blocks	LAMCO	LAMCO
2	Arrestor class & type	Station Class Metal Oxide Gapless Lightning Arrestor "MORESTER" Type 'STN-DT'	Station Class Metal Oxide Gapless Lightning Arrestor "MORESTER" Type 'LMAS'
3	Applicable Standard	IEC 60099-4 / IS 3070	IEC 60099-4
4	Rated Arrestor Voltage(kV)	30	120
5	Maximum Continuous Operating voltage (MCOV)-(kV)	24	106
6	Nominal Discharge Current (kA) with 8/20 Micro-second wave	10	10
7	Long Duration Discharge class	2	3
8	Minimum Energy Discharge Capability (kJ/kV)	6	9
9	Maximum switching current impulse residual voltage at		
i)	1000 Amps	60 kVp	240 kVp
ii)	250 Amps	55 kVp	235 kVp
10	Maximum residual voltage with 1 micro second current wave at 10 kA (kVp)	100 kVp	372 kVp
11	Maximum residual voltage with 8/20 (kVp) Micro-second wave at		
i)	5 kA	85 kVp	320 kVp
ii)	10 kA	90 kVp	340 kVp
iii)	20 kA	100 kVp	380 kVp
12	Safe Fault Current (kA)	25 (0.2 sec)	40 (0.2 sec)
13	Lightning impulse withstand voltage of Arrestor housing with 1.2/50 micro-second wave (kVp).	170	650
14	One minute power frequency withstand voltage of housing (dry/wet) - kV(rms)	70	275
15	High Current short duration impulse withstand level with 4/10 micro second wave (kA) Peak	100	100
16	Pressure Relief Class	Class A (40 KA)	Class A (40 KA)
17	Over-voltage withstand Capability kV		

Sl. No.	Particulars	33kV LIGHTNING ARRESTOR	132kV LIGHTNING ARRESTOR
a)	10 seconds	49 kV	195 kV
b)	1 second	51 kV	204 kV
c)	0.1 second	53 kV	212 kV
18 a)	Reference Voltage (kV)	$\geq U_r$	$\geq U_r$
b)	Reference Current (mA)	2	3
19	Number of Units per phase and rating of each unit	1 30kV	2 60kV
20	Minimum total creepage distance (mm)	900	3625
21	Leakage Current (mA)	< 0.8	< 0.8
22	Total weight of Arrestor (kg)	11 \pm 10%	104 \pm 10%
23	Maximum cantilever strength of Lightning Arrestor (Including Wind Load)	325 kg	500 kg
24	Overall Height of Lightning Arrestors (mm)	480 \pm 20%	1820 \pm 72%
25	Maximum distance recommended from equipment to be protected by Lightning Arrestor	4 mtrs	7 mtrs
26	Minimum distance between surge arrester and any grounded object(mm)	400	1700
27	Minimum distance between Arrestor phase legs (mm)	500	2000
28	Make of Porcelain insulator details	MAHALAXMI/ IEC/CJI/Ravikiran	IEC/CJI/RAVI KIRAN
29	Grading ring	NA	Provided
30	Pressure relief device details	Class A	Class A
31	Sealing arrangement details	Hermatically Sealed	Hermatically Sealed
32	Surge monitor Make	NA	LAMCO
33	Surge counter		
a)	Discharge counter (make)	NA	ISKRA MEHANIZMI.D.O.O, Slovenija
b)	Connecting lead between discharge counter & LA (Cu. Flat 25 x 9 Sq.mm min 1.5 meters)	NA	Provided
c)	Potential across discharge counter (normal condition)	NA	10Vrms
d)	Milli ammeter (Make) for measuring leakage current (W/o auxillary AC or DC supply)	NA	Provided (Make: BEEMET Insstruments, Mumbai)

SD/-
Chief Engineer/P&MM