TENDER SPECIFICATION

STN-1538/2025

FOR

SUPPLY, ERECTION AND COMMISSIONING OF 11KV 2 MVAR CAPACITOR BANKS WITH ASSOCIATED EQUIPMENT

CONTENTS

NOTE:

1. **Payment terms, Delivery period, Performance Bank Guarantee, applicable GST" should be in line with the terms and conditions of the specification. If any bidder does not meet any one of the conditions, such tender will not be considered. Please note that the conditional offers are also not considered. Hence the bidder shall submit the tender in line with the terms and conditions of the specification.**
2. **The bidders shall check the website www.tgsouthernpower.com and www.tender.telangana.gov.in for amendments, if any, upto one day prior to the date of tender opening. The amendments shall be binding on the bidders.**
3. **The purchaser will not be responsible for any damage that may be caused to the samples at any time.**
4. **The bidder shall furnish required Bid Security amount and validity as per specification. If the bidder fails to furnish bid security amount and bid validity as stipulated in the specification, such tender bid will not be considered for further evaluation.**
5. **The prospective bidders shall attend the pre-bid meeting (date and time in NIT) for any queries. The discussed queries shall be submitted in the form of a letter during pre bid meeting or within 24 hrs of pre bid meeting. Any new queries received after pre bid meeting are not liable to be considered.**
6. **The bid evaluation will be carried out based on the documents uploaded through www.tender.telangana.gov.in against this tender.**
7. **The Bids received with any details pertaining to prices in the offline mode will be liable for rejection.**
8. **In e-procurement commercial stage, if F&I charges are applicable then mention whether F&I charges entered are exclusive/inclusive of GST in the remarks section. If not mentioned in remarks, F&I charges will be considered as inclusive of GST.**
9. **EMD Exemption is considered only for Government Firms.**

Ph : 040 – 23431033, 23431448
Fax : 040 – 23431034

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION- I

Energy Saved is Energy Produced

SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED

e-Procurement Tender Notice (Paper Notification)

TGSPDCL intends to float tender for procurement of (a) 3-ph (10-40A) Meters IRDA & DLMS with PP Box (b) Capacitor Bank 2 MVAR (c) 11KV 800A Conv. Double Break AB Switches with Insulators on e-procurement platform.

For further details of each item above, please visit www.tgsouthernpower.org, www.tender.telangana.gov.in, www.auction.telangana.gov.in.

Phone: 040-23431360, 1033, 1035, 1026

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ONLINE VERSION

Tender Notice No : STN-1538/2025

Notice Inviting Tender Details		
S.No	**Description**	
1	Department Name	TGSPDCL
2	Office	Purchases & Material Management Wing, Corporate Office, TGSPDCL
3	Tender Number	STN- 1538/2025
4	Tender Subject	11KV 2MVAR Capacitor Banks along with associated equipment
5	Delivery Schedule	The materials to be dispatched directly to destinations is to be provided along with purchase order or Dispatch instructions, Supplies including erection and commissioning work at destinations shall be completed **within six months** from the date of issue of purchase order or **date of issue of Drawing approval whichever is later subject to the following condition.** **"The Drawings to be submitted within 20 days from the date of receipt of Letter of Intent. If any remarks are to be attended in the drawings submitted, the revised drawings to be submitted within three working days on receipt of remarks through fax or e mail".**
6	Tender Type	Open
7	Tender Category	NA
8	Bid Security (INR)	(i) 2% of the Ex-works quoted value (**plus GST @18%**) (or) (ii) Exemption letter of Bid Security in case of Govt. firms.
9	Bid Security Payable to	In the form of DD in favour of Pay Officer/TGSPDCL / Hyd or BG from Nationalized/Scheduled Bank as per format 2(a). **The validity of the bank guarantee shall be upto bid validity+45 days from the date of tender opening**
10	Processing Fee (INR)	NIL
11	Transaction Fee	Transaction fee: All the participating bidders who submit the bids have to pay an amount @ 0.03% of their final bid value online with a cap of Rs. 10,000/- for quoted value of purchase upto Rs.50 crores and Rs.25000/- if the purchase value is above Rs.50 crores & GST applicable as levied by Govt. of India on transaction fee through online in favour of M/s. TGTS. The amount payable to M/s. TGTS is non refundable. Corpus Fund: Successful bidder has to pay an amount of 0.04% on quoted value through demand draft in favour of Managing Director, TGTS, Hyderabad towards corpus fund at the time of concluding agreement.
12	Transaction Fee Payable to	TGTS, Hyderabad
13	Date & Time of pre-bid meeting with manufacturer	**27-02-2026 at 11.30 Hrs.**
14	Schedule Sale opening date	**21-02-2026** from 16:00 Hrs
15	Schedule Sale closing Date	**17-03-2026** Upto 13:00 Hrs.
16	Bid Submission Closing Date & time	**17-03-2026** Upto 13:00 Hrs
17	Bid submission	On Line
18	Pre-Qualification & Technical Bid Opening Date (Qualification and Eligibility Stage and Technical Bid Stage)	**17-03-2026** at 15:00 Hrs.
19	Price Bid Opening Date (Financial Bid Stage)	**20-03-2026** at 12:00 Hrs

20	Place of Tender Opening	O/o Chief Engineer/P&MM TGSPDCL., 4th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004.
21	Officer Inviting Bids/ Contact Person	Chief Engineer/P&MM/TGSPDCL/HYDERABAD
22	Address/E-mail id	O/o. Chief Engineer/P&MM TGSPDCL., 4th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004
23	Contact Details/Telephone, Fax	Ph. No. 040-23431448, 040-23431319 Fax No. 040-23431034
24	Eligibility Criteria	As per Section VI
25	Procedure for Bid Submission	**Bids shall be submitted online on www.eprocurement.gov.in platform** 1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website www.eprocurement.gov.in. 2. Bidders can log-in to e-procurement platform in Secure mode only by signing with the Digital certificates. 3. The bidders who are desirous of participating in e-procurement shall submit their technical bids, price bids as per the standard formats available at the e-market place. 4. The bidders should scan and upload the following documents in support of technical bids. The bidders shall sign on all the statements, documents certificates uploaded by him, owning responsibility for their correctness/authenticity: a) Bid Security should be furnished i) In the form of DD in favour of Pay Officer/TGSPDCL/Hyderabad **(or) Alternatively BG (plus GST @18%) from Nationalized/ Scheduled Bank as per form-II enclosed** ii) If exempted give details of Bid Security Exemption in case of Govt. firms. b) Quantity offered c) Proof of manufacturer/Authorized dealer d) Manufacturer's authorization form in case of distributors/ dealers. e) Latest "GST Clearance Certificate" f) Financial Turnover certified by CA for last 5 years g) **Details of previous supplies along with PO copies and delivery challan copies for qualification requirement as per tender document.** h) **Performance Certificates issued by Head of Purchasing Authority (as per spec)** (i)Copies of relevant purchase order copies mentioned in the performance certificates in support of the above. j)Technical Particulars of the product, other relevant documents attached to the bid. k) Duly filled and signed proforma as per **Format A**. l) Transaction fee payable to M/s. TGTS. 5. The rates should be quoted in online only

		6. After uploading the documents, the copies of the uploaded statements, certificates, documents, original Demand Drafts in respect of processing fee and Bid Security (except the Price bid/offer/break-up of taxes) are to be submitted by the bidder to the Chief Engineer/P&MM/TGSPDCL so as to reach before the date and time of opening of the technical bid. Failure to furnish any of the uploaded documents, certificates, before the date and time of opening of technical bid will entail in rejection of the bid. The Department shall not hold any risk on account of postal delay. Similarly, if any of the certificates, documents, etc., furnished by the tenderer are found to be false / fabricated / bogus, the bidder will be disqualified, blacklisted, action will be initiated as deemed fit and the Bid Security will be forfeited. 7. The department will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents. 8. The Documents that are uploaded online on e-market place will only be considered for Technical Bid Evaluation. 9. Important Notice to Contractors, Suppliers and Department users (i) In the endeavor to bring total automation of processes in e-Procurement, the Govt. has issued orders vide G.O.Ms.No. 13 dated. 5.7.2006 permitting integration of electronic Payment Gateway of ICICI/HDFC Banks with e-procurement platform, which provides a facility to participating suppliers/ contractors to electronically pay the transaction fee online using their credit cards.
26	Rights reserved with the Department	TGSPDCL reserves the right to accept or reject any or all of the tenders received without assigning any reasons therefore. The TGSPDCL also reserves the right to split the tender and place orders on more than one tenderer at its discretion
27	General Terms and Conditions	As per tender documents.

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-II
SALIENT FEATURES OF THE BID

SUPERSCRIPTION ON THE TENDER COVER

Specification No : **STN- 1538 /2025**
Material : 11KV 2MVAR Capacitor Banks along with associated Equipment

Officer to whom the bid will be addressed: **CE/P&MM, Corporate Office/TGSPDCL/Hyd**
Superscription on the bid cover and the outer envelope :

a. Specification No. : **STN-1538/2025**
b. Due date and time for online submission : **17-03-2026 upto 13:00 Hrs**
c. Date and time of online opening : **17-03-2026 at 15:00 Hrs**
d. Payment of bid security
   i) If paid give details: DD/BG No._____ Dt._____ for Rs._____
   ii) If exempted give details
e. Whether 90 days validity offered ……(yes/no).
f. Whether bid is made accepting payment terms Clause….(yes/no).
g. Whether delivery is as per delivery schedule indicated….(yes/no)
h. Whether the sample (if specified) has been enclosed/sent…(yes/no)
i. Whether the quotation is in two parts …. (Yes/no)

Content of Bidding Documents:

The materials / equipment required, bidding procedures, and contract terms are prescribed in the bidding documents as listed below:

a. Notice Inviting Bids.
b. Salient features of the contract.
c. Standard General terms and conditions of contract.
d. Standard Technical specification and drawings wherever necessary.
e. Qualification Requirements.
f. Schedule of requirements (Delivery Schedule)

SAMPLE FORMS.

g. Bid Form and Price Schedules
h. Bid Security Form
   i. Contract Form
   ii. Performance Security form
i. Manufacturers' Authorization form
j. Performance Statement
k. Details to be furnished by the Manufacturer (Format-A)
l. Schedule of Deviations (Technical & Commercial)

The Bidder is expected to examine all instructions, forms, terms and technical specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding documents in every respect will be at Bidder's risk and may result in the rejection of its bid.

Deviations from standard bidding document

i. General terms and Conditions of Contract
ii Technical

The above deviations supercede the existing terms of GCC and Technical Specification

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-III
GENERAL TERMS AND CONDITIONS

A. Introduction

1. Definitions

In this Contract, the following terms will be interpreted as indicated:

(a) "The Contract" means the agreement entered into between the Purchaser and the Supplier, as recorded in the contract Form signed by the Parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

(b) "The Contract Price" means the price payable to the Supplier under the Contract for the full and proper performance of its contractual obligations.

(c) "The Materials/equipment" means all of the equipment, machinery, and/or other materials which the Supplier is required to supply to the Purchaser under the Contract.

(d) "The Services" means those services ancillary to the supply of the Materials / equipment, such as transportation and insurance, and any other incidental Services, such as installation, commissioning, provision of technical assistance, training, and other such obligations of the Supplier covered under the Contract.

(e) "GCC" means the General Terms and Conditions of Contract contained in the section.

(f) "The Purchaser" means the organization purchasing the Materials / equipment.

(g) Vendor is a supplier who has registered with the purchaser for supply of materials/equipment.

(h) "The Supplier" means the firm supplying the Materials / equipment and Services under this Contract.

(i) "Day" means calendar day.

2. Applicability

These General Conditions of contract will apply to the extent that they are not superseded by provisions of Salient features of the Bid.

3(a) Standards

The Materials / equipment supplied under this Contract will conform to the Standards mentioned in the Technical specifications, and, when no applicable standard is mentioned, the authoritative standards appropriate to the Materials / equipment' i.e., BIS, such standards will be the latest. All material will be of the best class and will be capable of satisfactory operation under tropical conditions without distortion or deterioration.

3(b) Interchangeability:

All similar materials and removable parts of similar equipment will be interchangeable with each other. A specific confirmation of this should be furnished in the bid.

4. Scope of Work:

This specification covers design, manufacture, testing and delivery FADS (Free At Destination Stores) of the materials described at Section-IV and Technical Specification at section-V.

5. Eligible Bidders:

All the Manufacturers and authorized dealers who have registered themselves with department of industries of State/Central Govt. with full manufacturing and testing facilities for supply of the material or their authorized dealer in India (for manufacturers outside India) need to quote against the tender and quotations from traders and manufacturer's agents are liable for rejection..

B. THE BIDDING DOCUMENTS

6. Contents of Bidding Document:

6.1 The Materials / equipment required, bidding procedures, and contract terms are prescribed in the bidding documents as listed below:

1. Notice Inviting Bid
2. Technical Specifications
3. Schedule of Requirements (Delivery Schedule)
4. Bid Form and Price Schedules (online only)
5. Salient Features of the Bid
6. General Terms and Conditions of Contract
7. Qualification Requirements
8. Bid Security
9. Performance Security Form
10. Schedule of Deviations

6.2 The Bidder is expected to examine all instructions, forms, terms and Technical specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not responsive to the bidding documents in every respect will be at Bidder's risk and may result in the rejection of its bid.

7. Clarification of Bidding Documents

A prospective Bidder requiring any clarification of the bidding documents may notify the Purchaser in writing or by cable (hereinafter, the term cable is deemed to include telex and facsimile) at the Purchaser's address. The Purchaser will respond in writing to any request for clarification of the bidding documents, which it receives no later than fifteen (15) days prior to the deadline for the submission of bids**.** Written copies of Purchaser's response (including an explanation of the query but without identifying the source of inquiry) will be put on Website of the purchaser or intimated by mail.

8. Amendment to Bidding Documents:

8.1 At any time prior to the deadline for submission of bids, the Purchaser, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, may modify the bidding documents by amendment.

8.2 All such amendments also would be made available on the website of TGSPDCL and e-procurement website and such amendments will be binding on the respective Bidders.

8.3 In order to allow prospective Bidders reasonable time in which to take the amendment into account in preparing their bids, the Purchaser, at its discretion, may extend the deadline for the submission of bids.

C. PREPARATION OF BIDS

9. Language of Bid:

The bid prepared by the Bidder including all correspondence and documents relating to the bid exchanged by the Bidder and the Purchaser, will be in English.

10. Cost Associated with Bidding:

The Bidder will bear all costs associated with the preparation and submission of its bid, and the Purchaser, will in no case be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.

11. Documents Constituting the Bid:

11.1 The bid prepared by the Bidder will comprise the following components:

i. Bid Security in accordance with Clause No.19.
ii. A Bid Form and Price Schedule (only for online submission) completed in accordance with Clause No.12 and 13.
iii. Documentary evidence establishing in accordance with Clause No.18 that the Bidder is eligible to bid and is qualified to perform the contract if its bid is accepted.
iv. Documentary evidence establishing that the Materials / equipment and ancillary services to be supplied by the Bidder are as per the Technical specification of the bidding documents; and
v. GST clearance certificate
vi. Schedule of Deviations
    (a) Commercial
    (b) Technical

All the Schedules will be duly filled but not necessary in the sheets attached to the specification unless full details required in the schedules are furnished the Bids will be liable for rejection.

12. Bid Form:

The Bidder will complete the Bid form and the appropriate Price Schedule (only for online submission) furnished in the bidding documents, indicating the Materials/equipment to be supplied, a brief description of the Materials / equipment, quantity and prices.

13. Bid Prices:

13.1 The prices quoted shall be **FIRM**. Bids will be called for with prices FADS inclusive of packing and forwarding, GST and other legally permissible duties and levies wherever applicable, handling charges to cover the transport by road from destination railway station to site/stores and insurance (transit and storage at site for 45 days).

13.2 Even though composite price is given the break-up for all the duties, taxes, freight, insurance, packing and forwarding etc., shall be furnished.

13.3 It is the responsibility of the Bidder to inform himself of the correct rates of duties and taxes leviable on the materials at the time of bidding.

13.4 The proforma credit available to the bidder on the purchases of inputs (raw materials) consequent to the introduction of "MODVAT" Scheme may be taken into account while quoting the prices.

13.5 The Bidder shall indicate on the appropriate Price Schedule (online submission) the unit prices (where applicable) and total bid price of the Materials / equipment it proposes to supply under the contract.

Prices indicated on the price schedule (online) shall be entered separately in the following manner.

The price of the Materials / equipment quoted EX-WORKS and all other duties and taxes payable on the finished Materials / equipment with individual breakup for Applicable GST, packing and forwarding, freight and insurance etc.

14. Taxes and GST

14.1 A bidder will be entirely responsible for quoting the correct applicable GST, applicable GST, other local taxes or levies if any, license fees, etc., he has to incur until completion of the contract. For the purpose of evaluation the bidder should clearly indicate the GST and any other levies payable. Failure to furnish the details leads to loading as indicated in the evaluation criteria.

14.2 If the rates of statutory levies assumed by the Bidder are less than the actual rates prevailing at the time of bidding, the Purchaser will not be responsible for such errors. If the rates of statutory levies assumed by the Bidder are later proved to be higher than the actual / correct rates prevailing at the time of bidding, the difference will be passed on to the credit of the Purchaser.

14.3. Deemed Export Benefits: This is not applicable for local purchases with TGSPDCL funds.

15. 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 TGSPDCL provided that during delivery schedule. 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 TGSPDCL will be given credit to that extent.

In case of subvendor items GST are inclusive in tender price. No Statutory variation is applicable. Further price variations in respect of sub-vendor items will be considered on tender prices".

This is allowed only once during delivery period i.e. at the time of delivery of goods at factory".

16. Bid Currencies:

Prices shall be quoted in Indian Rupees; and will be paid in Indian Rupees Only.

17. Quantity to quote:

Bidder shall quote a minimum quantity of at least 20% of the total quantity indicated in the bid Specification. Offers less than the minimum prescribed are liable for rejection.

18. Documents Establishing Bidder's Eligibility and Qualifications

The Bidder shall furnish, as part of its bid, documents establishing the Bidder's eligibility to bid and its qualifications to perform the contract if its bid is accepted.

The documentary evidence of the Bidder's qualifications to perform the contract if its bid is accepted will establish to the Purchaser's satisfaction:

(a) that the Bidder has the financial, technical, and production capability necessary to perform the contract;

(b) that the Bidder meets the qualification criteria listed in Section IV. In addition the Bidder may furnish full particulars regarding supply of the material in question made so far to TGSPDCL during the last 5 years and other reputed utilities.

18.1 Documents Establishing Materials / equipment Conformity to Bidding Documents.

The Bidder shall furnish as part of its bid, documents establishing conformity to the bidding documents of all Materials / equipment and services, which the Bidder proposes to supply under the Contract.

The documentary evidence of conformity of the Materials / equipment and the services to bidding documents may be in the form of literature, drawings, and data, and will consist of:

(a) a detailed description of the essential technical and performance characteristics of the Materials /equipment;

(b) the bidder should specifically mention about furnishing the test certificates and a specimen form of test certificate should be furnished along with the bid.

(c) a list giving full particulars, including available sources and current prices of spare parts, special tools etc., necessary for the proper and continuing functioning of the Materials / equipment following commencement of the use of the Materials / equipment by the Purchaser; and

(d) an item-by-item commentary on the Purchaser's Technical Specifications demonstrating substantial responsiveness of the Materials / equipment and services to those specifications, or a statement of deviations and exceptions to the provisions of the Technical Specifications.

For purposes of the commentary to be furnished pursuant to above, the Bidder will note that standards for workmanship, material, and equipment, as well as references to brand names or catalogue numbers designated by the Purchaser in its Technical Specifications, are intended to be descriptive only and not restrictive. The Bidder may substitute alternative standards, brand names, and/or catalogue numbers in its bid, provided that it demonstrates to the Purchaser's satisfaction that the substitutions ensure substantial equivalence to those designated in the Technical Specifications.

19. Bid Security

19.1 The Bidder shall furnish, as part of its bid, a Bid Security in the amount of 2% (**plus GST @18% incase of BG**) of the Total Ex-works value of the materials offered against the bid. This amount should be paid by way of a crossed demand draft drawn on any schedule bank in favour of the Pay Officer, TGSPDCL and payable at headquarters of the Purchaser. The crossed DD should invariably be furnished along with the bids. **Alternatively the bidders may furnish a B.G. in original in lieu of DD as per the proforma attached**. Fax / photocopies of the bid security will not be accepted and will be rejected.

19.2 The fact of having enclosed bid security by **DD/BG** along with the bid should be clearly super scribed on the bid envelope.

19.3 Submission of BID SECURITY by way of cheque, cash, money order, call deposit will not be accepted and will be considered as disqualification.

19.4 Payment of BID SECURITY will be waived at the discretion of the TGSPDCL in the case of fully owned Government undertaking of the Central or State Government. Such undertakings should immediately apply and obtain exemption before submitting their Bids. They need only refer to the details of such exemption in their Bids. Exemption accorded by any organization other than TGSPDCL will not be considered.

19.5 Requests for exemption from payment of BID SECURITY will not be entertained in any other case.

19.6 Any bid not secured as above will be rejected by the purchaser.

19.7 Unsuccessful Bidders' Bid Security will be discharged or returned as promptly as possible but not later than thirty (30) days after the expiry of the period of bid validity prescribed by the Purchaser.

19.8 The successful Bidder's Bid Security will be discharged upon the Bidder signing the contract.

19.9 **The Bid Security may be forfeited:**

(a) if a Bidder:

i. Withdraws its bid or alters its prices during the period of bid validity specified by the Bidder on the Bid Form, or

ii. Does not accept the correction of errors pursuant to Clause No.30.2; or

iii. Offers post Bid rebates, revisions or deviations in quoted prices and / or conditions or any such offers which will give a benefit to the Bidder over others will not only be rejected outright but the original Bid itself will get disqualified on this account and the Bidder's BID SECURITY will be forfeited.

(b) In the case of a successful Bidder, if the Bidder fails:

i. To sign the contract in accordance with Clause No.37.

ii. To furnish performance security in accordance with Clause No.38.

19.10 In cases where the Bid Cover Contains superscription of having furnished Bid Security by way of **DD/B.G.** but if the same is not found within, such Bids will be rejected and bidder will run the risk of being banned.

Note : The bidder shall furnish required Bid Security amount and validity (The validity of the bank guarantee shall be upto bid validity +45 days from the date of tender opening) as per specification. If the bidder fails to furnish bid security amount and bid validity as stipulated in the specification, such tender bid will not be considered for further evaluation.

20. Period of Validity of Bids.

20.1 Bids shall remain valid for the period of ninety (90) days from the date of bid opening prescribed by the Purchaser. A bid valid for a shorter period will be rejected.

The bidders should clearly super scribe on the sealed envelopes of the bids about the validity. Bids not containing superscription of validity will be rejected and returned unopened.

20.2 In exceptional circumstances, the Purchaser may solicit the Bidder's consent to an extension of the period of validity. The request and the responses there to will be made in writing (or by cable). The Bid Security provided under Clause No.19 will also be suitably extended. A Bidder may refuse the request without forfeiting its Bid Security.

21. Tax Clearance Certificates:

Copies of Income Tax, GST and Turnover Tax certificates for the latest period from the appropriate authority will invariably be enclosed to the bid. In the case of proprietary or partnership firm it will be necessary to produce the certificate / certificates for the proprietor or proprietors and for each of the partners as the case may be. If the Bidder has already produced the certificate during the calendar year in which the bid is made, it will be sufficient, if particulars are given.

22. Service Conditions

22.1 The equipment / materials offered will be entirely satisfactory for operation under the climatic conditions indicated below:

(a)	Maximum ambient air temperature (in shade)	45^0 C
(b)	Maximum ambient air temperature (under sun)	50^0 C
(c)	Maximum daily average ambient air temperature	35^0 C
(d)	Maximum yearly average ambient air temperature	30^0 C
(e)	Maximum humidity	100%
(f)	Altitude above M.S.L.	Up to 1000M
(g)	Average No. of thunder storm days per annum	50
(h)	Average No. of dust storm days per annum	Occasional
(i)	Average No. of rainy days / annum	90
(j)	Average Annual Rain fall	925mm
(k)	Normal tropical monsoon period	4 months
(l)	Maximum wind pressure	150 kg/Sq.M.

22.2 Due consideration will be given to any special devices or attachments put forward by the Bidder which are calculated to enhance the general utility and the safe and efficient operation of the equipment / materials.

23. Format and Signing of Bid.

23.1 The Bidder shall prepare an original, clearly marking "ORIGINAL BID".

23.2 The original of the bid shall be typed and shall be signed by the Bidder or a person or persons duly authorized to bind the Bidder to the contract. The person or persons signing the bid will initial all pages of the bid, except for printed literature.

23.3 Any interlineations, erasures, or overwriting will be valid only if they are initialed by the person or persons signing the bid.

D. Submission of Bids

24. Submission, Sealing and Marking of Bids.

24.1 The tenderers are required to submit their bids in two parts as under:

(i) Part-I (a) : Bid Security, Transaction Fee, Technical & Qualification Requirements.

(b) : Technical Bid shall contain full technical particulars and commercial terms and conditions but without prices. This should not contain any cost information whatsoever.

Part-II : Price Bid – containing Price **(shall be on-line only)**
Bids received with any details pertaining to prices in the offline mode will be liable for rejection.

(ii) The Part-I of the tender should be furnished in a sealed cover superscribing tender enquiry number, name of material, name of the bidder and date of tender opening.

(iii) Part-I of the bid will be opened on the due date of tender opening. In case the bidders have been granted Bid Security exemption (clause-20.4), documentary evidence for the same must be furnished. The firms whose Bid Security is not received as specified in the tender document, the price bids will not be opened and their bids will be rejected summarily.

(iv) The price bids of only those bidders whose technical bids, on examination, are determined to be technically and commercially acceptable and meeting the specified Qualification Criteria will be opened at a later date.

Sealing and Marking of Bids.

24.2 The Bidder shall seal the bid in envelope.

24.3 The envelopes will be addressed to the Purchaser:

24.4 The sealed cover as well as the outer envelope should be super scribed as follows:

(a) Bid Enquiry No.
(b) Due date and time for online submission.
(c) Date and time for online opening.
(d) Payment of Bid Security
    (i) If paid, give details: D.D. No. Date:
    (ii) If not paid or exempted, give details.
(e) Whether 90 days validity offered…….YES / NO
(f) Whether the quotation is made accepting Payment terms clause …. YES/NO
(g) Whether the delivery is as per delivery schedule indicated…. YES/NO
(h) Whether the sample (if specified) has been enclosed/ sent…YES/NO
(i) Whether the bid is quoted in two parts (clause 25.1)…. (YES/NO)

24.5 Bids not super scribed as above are liable to be rejected.

24.6 The Bidder shall invariably complete the Bid in full. Details shall be furnished by the bidder as per the specification. .

24.7 The bids shall be in bound volumes (With the documents in the volume not detachable). All pages of the bid except in-amended printed literature shall be initiated by the person/persons signing the bid. The page number shall be referred in Index. All pages including literature, type test reports of the bid shall be numbered and the page numbers shall be continuous. Soft copy of the technical and commercial bids and designs with drawings shall be given in Floppy disc/ CD also. Summary sheet in the given format on the top of the bid duly signed and sealed by the bidder.

24.8 The time of actual receipt in the office only will count for the acceptance of the bid and either the date of bid, date stamp of post office or date stamp of any other office will not count. The TGSPDCL will not be responsible for any postal or any other transit delays.

24.9 Telegraphic quotations will not be entertained under any circumstances. Clarification, amplifications, and / or any other correspondence from the Bidder subsequent to the opening of bid will not be entertained. The Bidders are advised to ensure that their bids are sent in complete shape at the first instance itself.

24.10 The inner envelopes shall also indicate the name and address of the Bidder to enable the bid to be returned unopened in case it is declared "late".

24.11 If the outer envelope is not sealed and marked as required above, the Purchaser will assume no responsibility for the bid's misplacement or premature opening.

25. Deadline for Submission of Bids.

25.1 Bids together with modifications if any, or other withdrawals must be received by the Purchaser not later than the deadline for submission of bids specified in the Salient features of the Bid**.**

25.2 The Purchaser may, at its discretion, extend this deadline for the submission of bids by amending the bidding documents in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline will thereafter be subject to the deadline as extended.

26. Late Bids

Any bid received by the Purchaser after the deadline for submission of bids prescribed by the Purchaser will be rejected and returned unopened to the Bidder.

26.2 Modification and Withdrawal of Bids.

The Bidder may modify or withdraw its bid after the bid's submission, provided that written notice of the modification, including substitution or withdrawal of the bids, is received by the Purchaser prior to the deadline prescribed for submission of bids.

The Bidder's modification or withdrawal notice will be prepared, sealed, marked, and dispatched. A withdrawal notice may also be sent by cable, but followed by a signed confirmation copy, postmarked not later than the deadline for submission of bids. No bid may be modified after the deadline for submission of bids.

No bid may be withdrawn in the interval between the deadline for submission of bids and the expiration of the period of bid validity specified. Withdrawal of a bid during this interval may result in the forfeiture of its Bid Security.

E. Opening and Evaluation of Bids

27. Opening of Bids by the Purchaser

27.1 The Purchaser will open all bids meeting above criteria, at the time, on the date, and at the place specified.

27.2 The Bidders' names, bid modifications or withdrawals, discounts, and the presence or absence of requisite Bid Security and such other details as the Purchaser, at its discretion, may consider appropriate, will be announced at the opening.

27.3 Bids that are not opened and read out at bid opening will not be considered further for evaluation, irrespective of the circumstances.

28. Clarification of Bids

During evaluation of the bids, the Purchaser may, at its discretion, ask the Bidder for a clarification of its, bid. The request for clarification and the response shall be in writing, and no change in the prices or substance of the bid shall be sought, offered, or permitted.

29. Preliminary Examination

29.1 The Purchaser will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required sureties have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.

29.2 Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price will prevail, and the total price will be corrected. If the Supplier does not accept the correction of the errors, its bid will be rejected, and its Bid Security may be forfeited. If there is a discrepancy between words and figures, the amount in words will prevail. If the supplier does not accept the correction of the errors, its bid will be rejected and its Bid Security may be forfeited.

29.3 The Purchaser may waive any minor informality, nonconformity, or irregularity in bid which does not constitute a material deviation, provided such waiver doesn't prejudice or affect the relative ranking of any Bidder.

29.4 Prior to the detailed evaluation, the Purchaser will determine the substantial responsiveness of each bid to the bidding documents. For purposes of these Clauses, a substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. Deviations from, or objections or reservations to critical provisions, such as those concerning Bid Security, and Applicable GST will be deemed to be a material deviation. The Purchaser's determination of a bid's responsiveness is to be based on the contents of the bid itself without recourse to extrinsic evidence.

29.5 If a bid is not substantially responsive, it will be rejected by the Purchaser and may not subsequently be made responsive by the Bidder by correction of the nonconformity.

Note : Payment terms, Delivery period, Performance Bank Guarantee, applicable GST" should be in line with the terms and conditions of the specification. If any bidder does not meet any one of the conditions, such tender will not be considered. Please note that the conditional offers are also not considered. Hence the bidder shall submit the tender in line with the terms and conditions of the specification.

30. Evaluation and Comparison of Bids.

30.1 The Purchaser will evaluate and compare the bids, which have been determined to be Substantially responsive.

30.2 The Purchaser's evaluation of a bid will take into consideration one or more of the following factors

All the bids, which are opened, read out and considered for evaluation will be checked for qualification requirements in respect of technical and commercial aspects. Such of the bids, which do not meet the qualification requirements, will not be evaluated further. The bid is to be checked for its conformity to the technical specification. If it does not meet the technical specification, the Bid will not be evaluated further. However, if in the opinion of the purchaser the bidder has offered equipment / material better than the technical specification the same may be considered. The bid may be rejected for the following reasons:

1. Not in the prescribed form
2. Insufficient bid security or bid not accompanied by the required bid security or proof of bid security exemption
3. Bids not properly signed
4. The bidder is a vendor who is banned from further business transactions and the period of ban is still in force.
5. Bid received after the due date and time
6. The bid is through telegram or fax

- Further, the purchaser may enquire from the bidder in writing for any clarification of the bid. The response of the bidder will also be in writing. However no change in the prices or substance of the bid will be sought, offered or permitted.

- Bids will be examined for completeness and for any computational errors.

- Arithmetical errors will be rectified on the following basis.

    - Where there is a discrepancy between the unit price and total price, the unit price will prevail and the total price will be corrected accordingly.

    - Where there is a discrepancy between words and figures, the amount in words will prevail.

    - Failure on the part of the bidder to agree to the above corrections will result in rejection of his offer and forfeiture of his bid security.

- It will be ensured that the required sureties have been furnished and that the documents have been properly signed.

- The purchaser's evaluation of a bid will take into consideration one or more of the following factors

    (a) Delivery schedule offered in the bid;

    (b) Deviations in payment schedule from that specified in the general terms and conditions of the contract and technical deviations.

    (c) The cost of components, mandatory spare parts, and service;

    (d) The availability of spare parts and after-sales services for the equipment offered in the Bid;

    (e) The projected operating and maintenance costs during the life of the equipment;

    (f) The performance and productivity of the equipment offered;

    (g) Other specific criteria indicated in the Bidding documents.

    In addition the Purchaser’s evaluation of a bid will take into account the net landed cost of the material at the final destination. For the purpose of evaluation net landed cost is arrived at by adding all elements of the basic price, allowable discount, excise duty, any other levies, packing & forwarding, freight charges, insurance (transit & storage) as quoted by the bidder, interest on advance if any, erection, servicing and other charges, **inclusive of GST** as called for.

    In addition any variation up or down in GST / new levies introduced subsequent to bid opening and before award will be considered for comparison purposes.

The following criteria may be adopted for GST for evaluation

a. It is the responsibility of the bidder to quote all GST correctly without leaving any column unfilled. Where taxes and duties are not applicable, the bidder should enter "NA". If no duty / tax is leviable the same may be entered as "NIL". If any column is left blank or filled vaguely like "as applicable", the same will be loaded with the maximum of the other eligible Bids**.**

b. Where there is an exemption of GST, the documentary evidence to that effect will be enclosed by the supplier.

c. The bidders for supply and works shall invariably possess the TIN number and PAN Number for the bids above Rs. 5.00 lakhs and this must be verified before entering into contract.

- Prior to detailed evaluation, the responsiveness of each bid will be determined. A substantially responsive bid is one that conforms to all the terms and conditions of the bidding documents without material deviations. For this purpose superscription, qualification requirement, bid security, validity, delivery, payment terms, price schedule, GST will be deemed to be the critical provisions and deviations in any one of these items will be deemed to be a material deviation.

  The purchaser may waive any minor informality, non-conformity or irregularity in the bid which does not constitute a material deviation, provided such waiver does not affect the relative ranking of any bidder. The purchaser will clearly indicate in the bid specification the methodology for evaluation of bids.

  (a) Bid price, which will include all, costs of manufacture and services at manufacturing place as well as, Transportation to destination stores, packing and forwarding, insurance and all Taxes & other legally permissible duties & levies payable.

  (b) Delivery schedule offered in the bid.

  (c) Deviations in payment schedule from that specified in the general terms and conditions of the contract.

  (d) The cost of components, mandatory spare parts, and service

  (e) The availability of spare parts and after-sales services for the equipment offered in the Bid;

  (f) The projected operating and maintenance costs during the life of the equipment;

  (g) The performance and productivity of the equipment offered; and/or

  (h) Other specific criteria indicated in the Bid Specification.

30.3(a) The Purchaser's evaluation of a bid will take into account the Net Landed Cost of the Material at destination stores inclusive of all taxes and duties and **inclusive of GST** quoted by the Bidder. It is the responsibility of the bidder to quote all GST correctly without leaving any column unfilled. Where not applicable the column may be filled as "NA". If no duty / tax is leviable, the same may be filled as "NIL". If any column is left blank, the same is loaded with maximum of other eligible Bids.

30.3(b) Any statutory variations of GST and new levies imposed after opening of the bid and before award of the contract will be taken into consideration for the purpose of evaluation.

30.4 A substantially responsive bid is one, which conforms to all the terms and conditions of the bidding documents without material deviations. For this purpose superscription, qualification requirement, bid security, validity, delivery, payment terms, price schedule, GST will be deemed to the critical provisions and deviations in any one of these things will be deemed to be a material deviation.

31. Contacting the Purchaser.

31.1 From the time of the bid opening to the time of contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bid, it should do so in writing.

31.2 Any effort by a Bidder to influence the Purchaser in its decisions on bid evaluation, bid comparison, or contract award will result in the rejection of the Bidder's bid.

F. Award of Contract.

32. Post Qualification

32.1 In the absence of pre-qualification, the Purchaser will determine to its satisfaction whether the Bidder that is selected as having submitted the lowest evaluated responsive bid is qualified to perform the contract satisfactorily.

32.2 The determination will take into account the Bidder's financial, and production capabilities. It will be based upon an examination of the documentary evidence of the Bidder's qualification submitted by the Bidder, as well as such other information as the Purchaser deems necessary and appropriate.

33. Award Criteria:

The Purchaser will award the contract to the successful Bidder / Bidders whose bid has/have been determined to be substantially responsive.

However it is not binding on TGSPDCL to accept the lowest or any other Bid. It reserves the right to place orders on different Bidders.

34. Purchaser's Right to Vary Quantities at Time of Award

34.1 The Purchaser reserves the right at the time of contract award to increase or decrease **upto 50% of** the quantity of Materials / equipment and services originally specified in the Schedule of Requirements without any change in unit price or other terms and conditions.

34.2 The purchaser reserves the right to vary the ordered quantity by **+/- 50%** during the execution of the contract.

35. Purchaser's Right to Accept Any Bid and to Reject Any or All Bids

The Purchaser reserves the right to accept or reject any bid, and to annul the bidding process and reject all bids at any time prior to contract award, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders.

36. Notification of Award

36.1 Prior to the expiration of the period of bid validity, the Purchaser will notify the Successful Bidder in writing by registered letter or by cable, to be confirmed in writing by registered letter, that its bid has been accepted.

36.2 The notification of award will constitute the formation of the Contract.

36.3 Upon the successful Bidder's furnishing of the performance security, the Purchaser enters into contract with successful Bidder / Bidders. The Purchaser will notify each unsuccessful Bidder and will discharge its Bid Security.

37. Signing of Contract:

The Purchaser notifies the successful Bidder that its bid has been accepted. Within 30 (thirty days) of receipt of notification of award of Contract, the successful Bidder will sign and date the contract. Failure to comply with this stipulation will entail cancellation of the contract besides forfeiture of the bid security.

38. Performance Security:

38.1 Within Fifteen (15) days of receipt of the notification of Contract award. The successful Bidder will furnish to the Purchaser the performance security for an amount 10% of the contract value 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.

38.2 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.

38.3 The performance security will be…

(a) A bank guarantee issued by a **nationalized bank/Scheduled bank** 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 Purchaser drawn on any scheduled bank.

38.4 The performance security will be discharged by the Purchaser and returned to the Supplier not later than sixty (60) days after the expiry date.

38.5 **Failure of the successful Bidder to comply with the above requirement will entail cancellation of the award and forfeiture of the Bid Security and the balance to make up the performance security deposit will be deducted from pending payments if any due to the tenderer from TGSPDCL on other orders in addition the company will also become liable for being blacklisted by TGSPDCL**

39. Corrupt or Fraudulent Practices

It is essential that the Purchaser as well as Bidder / supplier / contractor for the purposes of this provision, the terms set forth below as follows:

(i) “Corrupt practice” means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in contract execution, and

(ii) “Fraudulent practice” means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the determinant of the purchaser, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the purchaser of the benefits of free and open competition;

(iii) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question;

(iv) Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at anytime determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract.

40. Use of Contract Documents and Information:

40.1 The Supplier will not, without the Purchaser's prior written consent, disclose the Contract, or any provision thereof, of any specification, plan, drawing, pattern, sample, or information furnished by or on behalf of the Purchaser in connection therewith, to any person other than a person employed by the Supplier in the performance of the Contract. Disclosure to any such employed person will be made in confidence and will extend only so far as may be necessary for purposes of such performance.

40.2 The Supplier will not, without the Purchaser's prior written consent, make use of any document or information except for purposes of performing the Contract.

40.3 Any document, other than the Contract itself, will remain the property of the Purchaser and will be returned (in all copies) to the Purchaser on completion of the supplier's performance under the Contract if so required by the Purchaser.

40.4 The Supplier will permit the Purchaser or his authorized representative to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the Supplier.

41. Patent Rights

The Supplier will indemnify the Purchaser against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Materials / equipment or any part thereof.

42. Places / Locations:

Particulars of site location and nearest rail heads to which the equipments / material have to be supplied will be given to successful Bidders.

43. Delivery:

Delivery period will be reckoned from the date of signing of the contract. The delivery quoted will be firm, definite, unconditional and on the basis of receipt of materials at destination in good condition without any bearing on the procurement of raw materials or any similar prerequisites. The commencement date and date of delivery will be indicated. The preferred delivery time, which is the essence of this specification, is indicated in the schedule. Final deliveries are however, subject to confirmation at the time of Contract. Delay in delivery of materials FADS – (Free At Destination Stores) due to non-availability of railway booking, non-allotment of wagons and any such reasons will not be considered. It is the responsibility of the supplier to make alternative arrangements for transporting the materials by road or rail so as to see that the material reaches the destination within the stipulated period. The Purchaser reserves its right to defer the delivery date at any time after orders are placed without any change in the conclusion of contract other conditions supply. The delivery period, which will be reckoned from the date of the Contract, will be guaranteed under penalty as in Clause 59.

44. Inspections and Tests

(i) The supplier will keep the Purchaser informed in advance of the time of the starting and the progress of manufacture of equipment in its various stages so that arrangement could be made for inspection. The accredited representative of the TGSPDCL will have access to the supplier's or his subcontractor's work at any time during working hours for the purpose of inspecting the materials during manufacturing of the materials/equipment and testing and may select test samples from the materials going into plant and equipment. The supplier will provide the facilities for testing such samples at any time including access to drawings and production data at no charge to Purchaser. As soon as the materials are ready the supplier will duly send intimation to TGSPDCL by Registered Post and carry out the tests in the presence of representative of the TGSPDCL.

(ii) The TGSPDCL may at its option get the materials inspected by the third party if it feels necessary and all inspection charges in this connection will be borne by the TGSPDCL. In case of materials not of acceptable quality or not conforming to the specification, the materials will be rejected. You have to re-offer the material for inspection. In such a case the 2nd inspection charges are to the suppliers account. In case the materials are rejected in the 2nd inspection also, the TGSPDCL reserves the right to cancel the order.

(iii) The dispatches will be affected only if the test results comply with the specification.The dispatches will be made only after the inspection by the TGSPDCL Officer is completed to the TGSPDCL satisfaction or such inspection is waived by the competent authority.

(iv) The acceptance of any quantity of materials will in no way relieve the supplier of its responsibility for meeting all the requirements of this specification and will not prevent subsequent rejection if such materials are later found to be defective.

(v) The supplier will give 15 days advance intimation to enable the Purchaser to depute his representative for witnessing the acceptance and routine tests.

(vi) Should any inspected or tested materials / equipment fail to conform to the specification, the Purchaser may reject the materials and supplier will either replace the rejected materials or make alterations necessary to meet specifications requirements free of costs to the Purchaser.

(vii) In the case of transformers, instrument transformers and meters, inspection will be conducted every year, for the first 5 years on a 2% sample of the quantities supplied. Samples will be collected at random to establish that the guaranteed technical parameters are as per the submitted bid by the supplier. In the case of non-adherence, the purchaser may take suitable action on the supplier including cancellation of vendor registration and banning further dealings, depending on the gravity of the deviation. <u>These random inspections may be entrusted to a third party</u>.

(viii) Inspection not carried out due to non-readiness of the material even after contacting / confirmed over phone from the supplier about availability of material and physical verification at the supplier premises, the charges @ 0.21% of Ex-works price of material offered for inspection (inclusive of applicable GST and all other taxes & duties, travelling expenses, boarding and lodging charges at the place of inspection and all incidental charges) shall be paid by supplier subject to a maximum of Rs. 10,000.00 .

45. Name Plate:

Equipment should be provided with name plate giving full details of manufacture, capacities and other details as specified in the relevant ISS or other specification stipulated. The contract No. and date and year of supply and the words **"TGSPDCL"** must be etched on the name plate.

46. Packing

46.1 The Supplier will provide such packing of the Materials / equipment as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. The packing will be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packing case size and weights will take into consideration, where appropriate, the remoteness of the Materials / equipment' final destination and the absence of heavy handling facilities at all points in transit.

46.2 The packing, marking, and documentation and outside the packages will comply strictly with such special requirements as will be expressly provided for in the Contract and in any subsequent instructions ordered by the Purchaser. The supplier will be required to make separate packages for each consignee, each package will be marked on three sides with proper paint / indelible ink with the following;

1. Contract Number
2 Supplier's name
3 Packing list reference number

46.3 The supplier, whenever dispatches material to a destination should prepare the following information in the form of packing slip in quadruplicate and send the same to the consignee and obtain his acknowledgement. The consignee will return to the supplier one copy of the packing slip with his remarks. The proforma of packing slip will be as follows:

PACKING SLIP

1. Contract No. & Date.
2. Quantity allotted to the stores and rate applicable.
3. Quantity so far supplied to the stores and the rate applied.
4. Quantity now supplied and the rate applied.
5. Total quantity supplied under the Contract with rates applied.
6. Programme for supplying the balance quantity to the Stores.

47. Delivery Documents

47.1 Delivery of the Materials/equipment will be made by the Supplier in accordance with the terms specified in the contract.

The latest test certificates containing the result of the tests as per the relevant ISS or other specification stipulated must be submitted to the Chief Engineer (P&MM) and got approved by him.

47.2 Documents to be submitted by the Supplier are specified as under…

(i) Insurance certificate;
(ii) Supplier's certificate certifying that the defects if any pointed out during inspection have been rectified (3 copies).
(iii) Manuals in Six sets and one set of reproducible drawings.

The Purchaser will receive the above documents soon after the dispatch of materials and if not received, the supplier will be responsible for any consequent expenses.

48. Insurance

48.1 The Materials / equipment supplied under the Contract will be fully insured against loss or damage incidental to manufacture or acquisition, transportation and delivery and also storage for **45** days at destination stores.

48.2 The bidder shall a) Initiate and pursue insurance claim till settlement, and b) Promptly arrange for repair and/or replacement of any damaged items in full irrespective of settlement of insurance claim by the under Writers. c) All costs because of insurance liabilities covered under the contract will be to supplier's account. The supplier shall provide the Purchaser with a copy of all insurance policies and documents taken out by him in pursuance of the 'Contract'. Such copies of documents shall be submitted to the purchaser immediately after such insurance coverage. The supplier shall also inform the Purchaser in writing at least sixty (60) days in advance, regarding the expiry, cancellation and/or change in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time.

The risks that are to be covered under the insurance shall be comprehensive and shall include but not limited to, the loss or damage in transit, storage, due to theft, pilferage, riot, civil commotion, weather conditions, accident of all kinds, fire, flood, war risk (during ocean transportation) bad or rough handling etc. The scope of such insurance shall cover the entire contract value.

The insurance will be in an amount equal to 100% FADS value of Materials / equipment on all risks basis. The policy will have a provision for extension to cover further storage if necessary at destination stores / site at TGSPDCL cost. **The insurance beneficiary shall be TGSPDCL.**

49. Transportation

The Supplier is required under the Contract to transport the Materials / equipment to a specified place of destination defined as normally the district stores, transport to such place of destination, including insurance and storage, will be arranged by the Supplier, and the related costs will be included in the Contract Price only.

50. Incidental Services

The Supplier may be required to provide any or all of the following services, including additional services, if any.

(a) Performance or supervision of on-site assembly and/or start-up of the supplied Materials / equipment;

(b) Furnishing of tools required for assembly and/or maintenance of the supplied Materials / equipment;

(c) Furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Materials / equipment;

(d) Performance or supervision or maintenance and/or repair of the supplied Materials / equipment, during warranty period, provided that this service will not relieve the Supplier of any warranty obligations under this contract; and

(e) Training of the Purchaser's personnel, at the Suppliers' plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Materials / equipment.

51. Spare Parts

The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier.

(a) Such spare parts as the Purchaser may choose to purchase from the Supplier, provided that this election will not relieve the supplier of any warranty obligations under the contract; and

(b) In the event of termination of production of the spare parts:

(c) Advance notification to the Purchaser of the impending termination.

(d) Time to permit the Purchaser to procure needed requirement; and following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings, and specifications of the spare parts, if requested.

52. Warranty

52.1 The supplier will warrant for the satisfactory functioning of the material/equipment as per specification for a minimum period of **5 YEARS** from the date of receipt of the material/equipment in good condition.

52.2 The Supplier warrants that the Materials / equipment supplied under the Contract are new, unused, of the most recent or current models, and that they incorporate all recent improvements in design and materials unless provided otherwise the special guarantee sought in technical specification. The supplier further warrants that all Materials / equipment supplied under this Contract will have no defect, arising from a design and / or materials as required by the Purchaser's specifications or from any act of omission of the Supplier, that may develop under normal use of the supplied Materials / equipment.

52.3 All the materials will be of the best class and will be capable of satisfactory operation in the tropics under service conditions indicated in clause 23.1 without distortion or deterioration. No welding filling or plugging of defective parts will be permitted, unless otherwise specified, they will conform to the requirements 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).

52.4 The entire designs and construction will be capable of withstanding the severest stresses likely to occur in actual service and of resisting rough handling during transport.

52.5 Unless otherwise specified the warranty period will be 5 years from the date of acceptance of the Materials / equipment. The Supplier will, in addition, comply with the performance guarantees specified under the contract. If, for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the supplier will at its discretion either, Make such changes, modifications, and/or additions to the Materials / equipment or any part thereof as may be necessary in order to attain the contractual guarantees specified in the contract at its own cost and expense and to carry out further performance tests as per the relevant standards.

52.6 The Purchaser will promptly notify the supplier in writing of any claims arising under this warranty.

52.7 "Upon receipt of such notice, the Supplier will within 30 days repair or replace the defective Materials / equipment or parts thereof, free of cost at the ultimate destination. The supplier will take over the replaced parts/Materials/equipment at the time of their replacement. No claim whatsoever will lie on the Purchaser for the replaced parts/Materials /equipment thereafter". 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.

52.8 If the Supplier, having been notified, fails to remedy the defect(s) within the above period, the Purchaser may proceed to take such remedial action as may be necessary, at the Supplier's risk and expense duly deducting the expenditure from subsequent bills / bank guarantee and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

53. Payment

53.1 "100% payment will be arranged on or after 30 days from the date receipt of material/equipment at the destination/stores (i.e.103 entry in SAP module) duly transferring the said amount to the bank account of the supplier by the purchaser bank. The supplier will have to predefine the Bank details while entering into contract for electronic transfer of payments.

Note:

i) The date of delivery would be the date on which the stores officer certifies the receipt of materials at stores in good condition 103 entry in SAP module in respective of the date of check measurement.

ii) Form 13 shall be issued subject to material taken into stock in good condition (i.e., 105 entry in SAP module).

iii) The supplier should invariably submit test certificates as soon as despatch is made so that the test certificates can be checked up and approved well before it becomes due for payment. Routine Test Certificates of the entire lot shall be submitted to the Consignee.

iv) The performance guarantee to be executed in accordance with this specification shall be furnished on a stamp value of Rs.100/- The performance guarantee shall be from any Nationalized/Scheduled Bank. Performance Guarantee to the extent of 10% value of purchase order valid upto 2 months over and above the guarantee period to draw 100% payment.

The performance guarantee has to be extended suitably by you in accordance with the guarantee clause, so that the last consignment against the order is covered by the guarantee.

v) If you have received any over payments by mistake or if any amounts are due to the TGSPDCL due to any other reason, when it is not possible to recover such amounts under the contract resulting out of the subject specification, the TGSPDCL reserves the right to collect the same from any other amounts and/or bank guarantee given by you due to or with the TGSPDCL.

vi) When you do not at any time, fulfill your obligations in replacing / rectifying etc., of the damaged/ defective materials in part or whole promptly to the satisfaction of the TGSPDCL officers, the TGSPDCL reserves the right not to accept the bills against subsequent despatches made by the supplier and only the supplier will be responsible for any demurrages, wharfages or damages occurring to the consignment so despatched.

53.2 The 100% payment mentioned above is subject to on submission of performance security as per Clause-39 by the supplier.

53.3 The supplier should invariably submit test certificates and other documents, the purchaser specifies as soon as dispatch is made so that they can be checked and approved well in advance.

53.4 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 Clause No.38.

53.5 If the supplier has received any over payments by mistake or if any amounts are due to the TGSPDCL due to any other reason, when it is not possible to recover such amounts under the contract resulting out of this specification, the TGSPDCL reserves the right to collect the same from any other amount and / or Bank Guarantees given by the company due to or with the TGSPDCL.

53.6 When the supplier does not at any time, fulfill his obligations in replacing/rectifying etc., of the damaged/defective materials in part or whole promptly to the satisfaction of the TGSPDCL Officers, the TGSPDCL 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.

54. Prices

Prices charged by the Supplier for Materials / equipment delivered and Services performed under the Contract will not vary from the prices quoted by the supplier in its bid, with the exception of any price adjustment authorized in the contract.

55. Change Orders

The Purchaser may at any time, by a written order given to the Supplier make changes within the general scope of the Contract in any one or more of the following:

Drawings, designs, or specifications, where Materials / equipment to be furnished under the Contract are to be specifically manufactured for the Purchaser;

The method of shipment or packing;

The place of delivery; and/or

The Services to be provided by the Supplier.

56. Contract Amendments

No variation in or modification of the terms of the Contract will be made except by written amendment by the Purchaser and accepted by the supplier.

57. Assignment

The Supplier will not assign, in whole or in part, its obligations to perform under this Contract, except with the Purchaser's prior written consent.

58. Delays in Supplier’s Performance

58.1 Delivery of the Materials / equipment will be made by the Supplier in accordance with the time schedule prescribed by the Purchaser in the Schedule of Requirements.

58.2 If at any time during performance of the Contract, the Supplier should encounter conditions impeding timely delivery of the Materials / equipment, the Supplier will promptly notify the Purchaser in writing of the fact of the delay, its likely duration and its cause(s). As soon as practicable after receipt of the Supplier's notice, the Purchaser will evaluate the situation and may at its discretion extend the Supplier's time for performance, with or without liquidated damages, in which case the extension will be ratified by the parties by amendment of the Contract.

58.3 Except as provided under force majeure clause a delay by the Supplier in the performance of its delivery obligations will render the Supplier liable to the imposition of liquidated damages unless an extension of time is agreed upon without the application of liquidated damages.

59. Penalty for delay in supplies

The delivery of materials as per the agreed schedule of delivery is the essence of the contract and no extension of the time for delivery would be allowed except under recognized force majeure conditions.

For supplies made beyond the agreed delivery schedule, penalty shall be levied for an amount of equivalent to ½ % of the ex-works value of the material not delivered within the prescribed time limit for every week of delay or part thereof subject to a maximum of 5% of cost of the undelivered portion within scheduled time.

The date of certified receipt of material at destination stores in good condition will be taken as the date of delivery. For calculation of penalty, the date of receipt (i.e.,103 entry in SAP module) of material at destination stores is the "Date of Delivery" subject to the condition that, the materials is received in good condition. For penalty, the number of days would be rounded off to the nearest week and penalty calculated accordingly.

Any variation up or down in Excise Duty, or applicable GST or other statutory levies, or new levies introduced after placing of the order, under this specification, shall be to the TGSPDCL's account, provided that, the delivery schedules are adhered to by the supplier. In case, if there are increase in excise duty or applicable GST or other statutory levies or new levies after the agreed delivery dates, the supplier shall bear the impact of these levies and if there is downward variation/revision TGSPDCL shall be given credit to that extent.

In case you do not adhere to the delivery schedule the TGSPDCL reserves the right to purchase the balance quantity from the open market and recover expenditure incurred from you. This is in addition to the right of the TGSPDCL mentioned in first para of this clause and under law

60. Risk purchase:

Incase of supplier who has not adhered to the delivery schedule, the TGSPDCL reserves the right to purchase the balance quantity from the open market/floating another tender and recover the extra expenditure thus incurred from the supplier.

61. Termination for Default

61.1 The Purchaser, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Supplier, may terminate this Contract in whole or in 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 obligation(s) 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.

61.2 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.

62. 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.

63. Termination for Convenience

63.1 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 will specify the 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.

63.2 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.

64. Force Majeure

64.1 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 its delay in performance or other failure to perform its obligations under the Contact is the result of an event of Force Majeure.

64.2 For purposes of this clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may include, but are not restricted to, wars or revolutions fires, floods, epidemics, quarantine restrictions, and freight embargoes.

64.3 If a 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 practice, and will seek all reasonable alternative means for performance not prevented by the Force Majeure event.

No price variance will be allowed during the period of force majeure.

65. Settlement of Disputes

65.1 If any dispute or difference of any kind whatsoever will arise between the Purchaser and the Supplier in connection with or arising out of the Contract, the parties will make every effort to resolve amicably such dispute or difference by mutual consultation.

65.2 If, after thirty (30) days the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given.

65.3 Any dispute of difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause will be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Materials / equipment under the Contract.

65.4 Arbitration proceedings will be conducted in accordance with the following rules of procedure**.** The dispute resolution mechanism will be as follows:

(a) In the case of a dispute or difference arising between the Purchaser and a Supplier relating to any matter arising out of or connected with this agreement, such dispute or difference will be settled in accordance with the Arbitration and Conciliation Act. 1996. The Arbitral Tribunal will consist of three Arbitrators one each to be appointed by the Purchaser and the supplier the Third Arbitrator will be chosen by the two Arbitrators so appointed by the parties and will act as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within a period of 30 days from the appointment of the Arbitrator appointed subsequently, the Presiding Arbitrator will be appointed by The Institution of Engineers (India).

(b) If one of the Parties fails to appoint its Arbitrator in pursuance of Sub-Clause (a) within 30 days after receipt of the notice of the appointment of its Arbitrator by The Institution of Engineers (India), will appoint the Arbitrator. A certified copy of the order of the Institution of Engineers (India), making such an appointment will be furnished to each to the parties.

(c) Arbitration Proceedings will be held at Purchaser's Headquarters, and the language of the Arbitration Proceedings and that of all documents and communication between the parties will be English.

(d) The decision of the majority of Arbitrators will be final and binding upon both parties. The cost and expenses of Arbitration Proceedings will be paid as determined by the Arbitral Tribunal. However, the expenses incurred by each party in connection with the preparation, presentation etc., of its proceedings as also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf will be borne by each party itself.
Where the value of the Contract is Rs. One Crore and below, the disputes or differences arising will be referred to the Sole Arbitrator. The Sole Arbitrator should be appointed by agreement between the parties; failing such agreement, by the appointing authority namely The Institution of Engineers (India).

65.5 Notwithstanding any reference to arbitration herein,

(a) The parties will continue to perform their respective obligations under the Contract unless they otherwise agree; and

(b) The Purchaser will pay the Supplier any monies due to the Supplier.

66. Jurisdiction

All and any disputes or differences arising out of or touching this contract will be decided by the Courts or Tribunals situated in Purchaser's Headquarters only. No suit or other legal proceedings will be instituted elsewhere.

67. Notices

67.1 Any notice given by one party to the other pursuant to this Contract will be sent to the other party in writing or by cable, telex, or facsimile and confirmed in writing to the other party's address.

67.2 A notice will be effective when delivered or on the notice's effective date, whichever is later.

68. Foreign Exchange

No Foreign Exchange is available or expected for this purchase. Offers which do not require release of F.E. or procurement of import license by TGSPDCL only will be considered. Where some of the components are to be imported the manufacturer will have to make their own arrangements for import license etc., and should not look for any assistance from TGSPDCL.

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION – IV
SPECIFICATION NO. STN-1538/2025

SCHEDULE OF MATERIALS

Sl. No.	Description of material	Qty. Required Nos.	Free at destination Location/stores
1a	Supply of 11KV, **2 MVAR** Capacitor banks (**outdoor type**) with associated equipment	300	Annexure -I TGSPDCL
1b	Erection and Commissioning of 11KV, **2 MVAR** Capacitor banks (**outdoor type**) with associated equipment		

Associated equipment : Switchgears, Series Reactor, Current Transformers, Control and Relay Panels, Isolators with earth switch, Lightning Arresters and HT Electronic Trivector Meters (CMRI compatible) etc

Accessories required for erection, commissioning of the Capacitor Banks along with associated equipments is in the scope of the bidder. such as connecting Cables, (11KV 185 Sq.mm XLPE Cable) Heat Shrinkable cable end termination kits, Lugs, 4C x 2.5 Sq.mm. PVC Copper Control Cable(Un-armored), 10C x 2.5 Sq.mm PVC Copper Control Cable(Un-armored), , Panther Conductor, GI Flat 75x8 and GI Flat 50x6 and others etc., shall be of the latest IS/Applicable standards.

In the sub-stations where HT Cable, Cable support structures, End Termination Kits, Panther Conductor, GI Flat 75x8 and GI Flat 50x6 are required, the same have to be supplied by the successful bidder and the payment for these items will be made as per the latest purchase order rates/prevailing SSR Rates , whichever is later.

Control cable

i) 2Cx2.5 sq.mm copper control cable (AC&DC) – 100 Mts
ii)4Cx2.5 sq.mm copper control cable (CTs&PTs) – 150 Mts
iii)10Cx2.5 sq.mm copper control cable (control circuit) – 100 Mts

Note: The above lengths are tentative in nature. The actual lengths may vary as per site conditions and the bills will be paid on pro-rata basis.

NOTE:-

a) In e-procurement commercial stage, if F&I charges are applicable then mention whether F&I charges entered are exclusive/inclusive of GST in the remarks section. If not mentioned in remarks, F&I charges will be considered as inclusive of GST.

b) The tenderer should quote the rates for free at destination stores

c) The prices quoted shall be firm in Indian Rupees.

d) Desired Delivery: The materials to be dispatched directly to destinations are to be provided along with purchase order or Dispatch instructions. Supplies including erection and commissioning work at destinations shall be completed **within six months** from the date of issue of purchase order or **date of issue of Drawing approval whichever is later subject to the following condition.**

"The Drawings shall be submitted within 20 days from the date of receipt of Letter of Intent. If any remarks are to be attended in the drawings submitted, the revised drawings to be submitted within three working days on receipt of remarks through fax or e mail

e) The material shall be delivered directly at location only and the material bills shall be sent to the stores Assistant Divisional Engineer of concerned circle after commissioning of the Capacitor Bank.

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-V
STN-1538/2025
ANNEXURE-I

Schedule of equipment for erection and commissioning at the 33/11 KV Sub-station of 11KV Capacitor Banks along with associated equipment

As per the type of the 33/11 KV Sub-Stations i.e. Out door and available field conditions suitable for erection of the 11KV Capacitor Banks along with associated equipment the following are the requirements for that TYPE of the condition.

Out door 33/11 KV Sub-Station

TYPE – A : i) No HT Cable required. Direct tapping from bus (outdoor).

TYPE – B : i) Additional HT Cable required from bus to capacitor panel (outdoor)

NOTE :

Accessories required for erection, commissioning of the Capacitor Banks along with associated equipments such as connecting Cables, (11KV 185 Sq.mm XLPE Cable) Heat Shrinkable cable end termination kits, Lugs, 4C x 2.5 Sq.mm. PVC Copper Control Cable(Un-armored), 10C x 2.5 Sq.mm PVC Copper Control Cable(Un-armored), , Panther Conductor, GI Flat 75x8 and GI Flat 50x6 and others etc., shall be of the latest IS/Applicable standards..

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-V (STN- 1538/2025)

TECHNICAL SPECIFICATION FOR SUPPLY, ERECTION AND COMMISSIONING OF 11 KV CAPACITOR BANKS WITH ASSOCIATED EQUIPMENT

1. SCOPE:

This specification covers Supply, Erection and commissioning of 11KV Capacitor banks with associated equipment viz., switchgears, Series Reactor ,current transformers, control and relay panels, Isolators with earth switch, lightning arresters and HT electronic trivector meters(CMRI compatible**)** etc., as discussed in this specification proposed to be installed in various 33/11 KV Sub-stations.

2. STANDARDS:

Except where otherwise specified or implied here in the equipment's shall comply with the latest applicable Indian Standards/IEC specification.

a)	Capacitors	:	IS 13925/1998, IEC 871-2 **or latest version IS/IEC**
b)	Breakers	:	IEC 62271-100/IS13118/1991
c)	Bushings	:	IS 2099/
d)	Indicating Instruments (Voltmeters & Ammeters)	:	IS 1248/2003
e)	Internal fuse	:	IS 12672 / IEC 593
f)	Current transformers	:	IS 2705 / 1992 or IS 16227:2016
g)	Transformer oil for CTs	:	IS 335
h)	Galvanization	:	IS 2633
i)	Primary terminals	:	IS 10601
j)	General arrangement for Switchgear & control gear	:	IS 4237
k)	Degree of protection for enclosures of control gear	:	IS 13947/Pt 1/93
l)	Electrical relays	:	IS 3231/1986&1987
m)	Electrical wiring	:	IS 2274
n)	Current limiting fuses	:	IS 9385 (Part-I)/1979
o)	Lightning arresters	:	IS 3070(Part-I)1985/IEC 99-I/ IEC TC 37 WG-4
p)	Isolators	:	IS 1818-1972, IS 9920 (Parts-I-IV) 1985
q)	Post Insulators.	:	IS 2544-1973 and IS 5350 (Part –III) 1973
r)	Energy Meter	:	IS14697
s)	Reactor	:	IS 5553 Part-III

Equipments meeting any other equivalent International standards which ensure an equal or better quality than the standards mentioned above will be acceptable. In case, the tenderers wish to offer equipment's conformation to the other standards they shall furnish an English translation of the relevant standards.

3. SYSTEM PARTICULARS:

a)	Nominal System Voltage	: 11 KV
b)	Highest System Voltage	: 12 KV
c)	Number of Phases	: 3
d)	Frequency	: 50 Hz
e)	System Grounding	: Ungrounded neutral
f)	Voltage Variation	: -30% to + 10%
g)	Frequency variation	**:** + or -5%

4.0 CAPACITORS:

4.1 DESIGN AND STANDARDIZATION:

The capacitor banks shall be suitable for outdoor use complete with all protection and control equipment and a single tier steel rack assembly suitable to accommodate all the units of one bank with all interconnections of the units, fuses and bus bars.

The capacitor units shall be manufactured by adopting latest technology of using dielectric system poly polypropylene film, the polypropylene having higher stability and low loss per KVAR. The impregnate used shall be most suitable for high temperature. The impregnation shall be carried out under high vacuum for increasing dielectric strength. Type of impregnate shall be non-PCB capacitor liquid.

The capacitor units shall be hermitically sealed and suitable for operation on 3 phase 11KV 50 c/s. AC supply.

The capacitor elements shall be designed for low working stress per micron to ensure larger life and also a low loss per KVAR.

Each 11 KV 3 phase capacitor banks shall have a net output of 2000 KVAR and the units may be conveniently arranged according to the standard practice of the manufacturer and type of protection offered. The switching in and out of the bank shall be by means of vacuum circuit breaker.

4.2 PRINCIPAL PARAMETERES:

Sl. No	Parameters		2 MVAR
1.	Nominal system voltage	:	11 KV
2.	KVAR capacity required at Nominal system	:	2000 KVAR (Min)
3.	Rated voltage of the Capacitor Bank	:	12.65KV
4.	Rated output of Capacitor Bank at rated voltage	:	2640 KVAR
5.	Rating of capacitor unit in KVAR With internal fuses	:	220 KVAR 2 bushings
6.	Connection of capacitor bank	:	Double Star with internal fuses
7.	No. of units/bank	:	6+6 = 12 nos. units /Bank
8.	Power loss	:	Not to exceed 0.2 watt/KVAR including Losses in fuses subject to tolerance as per IS 13925/1998 or IEC-871-2
9.	Permissible over loads	:	Maximum permissible overloads with reference to voltage, current and reactive output shall conform to IS 13925/1998 or IEC-871-2
10.	Type of grounding	:	Ungrounded
11.	Capacitor impregnate	:	Non toxic (i.e.) Non PCB
12.	Type of Protection	:	Internal fuse
13.	Type of discharge	:	Internally through resistor provided within the capacitor unit
14.	Capacity to receive in rush currents	:	Not less than 100 times rated current
15.	Series reactor	:	Air cooled (11KV) – Dry type Aluminum

Rating of series reactor:

			2 MVAR
1.	Rated output of Reactor	:	0.88 KVAR Single Phase
2.	Rated Current of the series reactor	:	60.245Amps
3.	Reactance at rated current	:	0.242 Ohms/phase
4.	Rated Voltage of the Reactor	:	12.65 KV
5.	Choke voltage/Phase at rated current	:	14.57V
6.	Winding Material	:	Aluminum
7.	Insulation class	:	F
8.	Insulation level	:	28KV rms/75KVP
9.	Maximum continuous current	:	130% of rated current
10.	Type of cooling	:	Air natural cooled(AN)
11.	Short time current	:	16.66 times of rated current for 2Sec
12.	Inductance	:	0.7716mh
13.	Load losses	:	0.21KW

The tenderer shall give calculations for rise in voltage in other units in the event of failure of element(s) of a capacitor unit. The maximum rise in voltage shall not be more than 10% of rated voltage even if the entire capacitor unit failed/short circuited & relevant calculations in support of this shall also be furnished.

4.3 PHYSICAL ARRANGEMENT OF BANKS:

The tenderers shall state the total number of capacitor units per bank, number of series groups per phase, and enclose the sketches. The tenderer shall furnish the detailed write-up about the construction features and manufacturing process of the capacitor unit detailing the internal arrangements of elements, protective features of element, functioning of discharge device. The physical arrangement of bank with associated equipment viz isolators, lightning arresters, VCB's shall be as per the sketch enclosed.

4.4 LOSSES:

The capacitor shall be of low loss type. The losses in capacitor including the losses in the fuses shall be guaranteed.

For operation in co-ordination with the protection provided, the tenderer should furnish characteristics of the fuses. The calculation for unbalance current on failures of fuse shall also be given. To ensure proper co-ordination of unbalance protection with fuse failure, unbalance characteristics starting from element failure, within an unit shall be furnished by the Bidder.

If the loss figures obtained during testing are more than the guaranteed values, then capacitors are liable to be rejected summarily.

4.5 DISCHARGE DEVICE:

Suitable discharge resistor shall be provided in the capacitor in accordance with provision of IS 13925/1998 or IEC-871-2

Each Capacitor unit shall be provided with means for discharging to 50V or less from an initial peak voltage of $\sqrt{2}$ times the rated voltage after disconnecting from source of supply. The maximum discharge time to 50V (Line to Line) shall be 10 minutes for units as well as banks as per IS-13925 (Part-I) : 1998.

4.6 EARTH CONNECTION.

The container of each capacitor unit shall be provided with suitable earthing terminal (marked with the earth symbol).

4.7 GENERAL REQUIREMENTS OF CAPACITOR:

a) The capacitor shall be of non-PCB type.

b) The container shall be made from **CRCA (Cold rolled cold annealed)** sheet of thickness not less than 1.6 mm and the outside of the capacitor units and other structures should have smooth and tidy look and should be coated with weather-proof, corrosion resistant paint of light gray shade, shade No. 631 of IS5.

c) Complete mounting brackets supporting insulators and all other components for elements for formation of capacitor bank racks shall be supplied along with the capacitor units.

d) The container shall be hermetically sealed by controlled arc welding process. The metal flanges of the bushing should be soldered/welded to the container and covered with epoxy compound, providing a strong hermetical seal to the container.

e) The outside of the capacitor units and other structures should have smooth and tidy look and should be coated with weather-proof, corrosion resistant paint of light gray shade, shade No. 631 of IS 5.

f) The capacitor units shall be provided with a rating plate and terminal marking as stipulated in IS 13925 or IEC-871-2

g) Necessary means shall be provided to discharge the capacitor bank to voltage not exceeding 50 volts in 10 minutes (maximum) as per standards.

4.8 CAPACITOR BANKS WITH DOUBLE STAR FORMATION:

For capacitor banks connected in double star formation (capacitor banks with internal fuses), one number neutral current transformer shall be supplied. The neutrals of the two portions of the capacitor bank (connected in double star formation) shall be connected through the neutral current transformer.

The ratio of neutral current transformer shall be selected such that the failure of one unit in any group is detected by an instantaneous current operated relay with setting of 10%. The main technical particulars of the **neutral current transformer shall be:**

4.9 NEUTRAL CURRENT TRANSFORMER:

The current transformer shall have adequate rating and burden. It shall be of outdoor type as indicated below

a)	Rated voltage	: 12 KV
b)	Reference standard	: IS 2705
c)	Ratio	: 10/1A
d)	Rated burden and class	: 15 VA,5P10
e)	Short time rating	: 100 times the primary rated current
f)	Minimum total creepage distance	: 300 mm
g)	Basic insulation level	: 75 KV peak
	impulse withstand voltage power frequency withstand voltage	: 28 KV rms
h)	Test requirements	: All routine tests shall be carried out
i)	Instrument security factor	: Not more than 3

4.10 PROTECTION ARRANGEMENT:

The capacitors shall be provided with necessary protection devices as detailed below.

4.10.1 Fuses: Each element of the capacitor unit shall be protected by internal element fuses conforming to IS 12672/IEC 593 which shall be properly designed to cut off the element that may fail due to electrical or mechanical failure.

4.10.2 Under Voltage: In case of failure in the incoming supply, it has to be ensured that the capacitors are not switched on again until the capacitors are discharged to a safe value, to prevent high transit switching currents. In order to ensure this an under voltage relay should be provided for opening the breaker automatically in the event of failure or drop in the incoming supply.

4.10.3 Timer Relay: One timer relay to prevent high transient switching currents, shall be provided with control switch to allow sufficient timing for the capacitor bank to discharge to a safe value before the bank is switched in again. The time limit for the units to discharge to a safe level shall not be more than 5 minutes. This timer should also ensure that if once the controlling breaker is tripped, the breaker can't be closed again unless a minimum period of **10 minutes** is lapsed.

4.10.4 Over Current And Earth Fault Relays: One No. Numerical relay with RS-485 Compatibility of 3 O/L + 1 E/L is to be provided with E/F setting and must have minimum setting value of 50%.

4.11 BREAKER:

Vacuum circuit breaker is required to be provided for controlling capacitor bank of rating 2.0 MVAR.

Requirements:

A. Each capacitor bank will be controlled by one breaker and the breaker shall be capable of breaking capacitive current of the capacitor bank.

B. The value of DC component shall be re-strike free and shall be capable of carrying maximum inrush current of capacitor bank.

C. The circuit breakers should have been type tested for capacitor bank switching duty.

D. The rated short circuit making current of the circuit breaker shall be taken as 2.5 times the rms value of component of the rated short circuit breaking current. For 11 KV systems, the standard normal current shall be 1250 Amps, short circuit withstand capacity 25 KA for 3 seconds.

E. Technical Particulars of VCB.

1) Rated voltage	: 12 KV
2) Type	: Vacuum Porcelain clad
3) Reference standard	:IS13118/IEC62271-100/2008
4) Service/Type	: Outdoor
5) Normal current/Rated thermal current	: 1250 Amps
6) Short circuit withstand current	: 25 KA/3Sec
7) Peak short circuit withstand current	: 50 KA
8) Operating duty	: 0.3 Min. Co.
9) Insulation level	
a) Impulse withstand voltage	: 75 KV Peak
b) One minute Power frequency withstand voltage	: 28 KV rms
c) Power frequency withstand voltage on Auxiliary circuit	: 2 KV (rms)/1 Minute

d) Operating mechanism : Motor operated/ Manual spring Charged. The standard DC Voltage for the operating devices shall be 24V/220V DC Operating Voltage for motor spring charging mechanism shall be 250V AC single phase. Normally the breaker shall be operated by Power and there shall be provision for manual operation.

10) Bushing insulator Creepage distance : Not less than 300mm
As per IS: 2099
11) Transient recovery : As per IEC 56 part-III
12) Type of tripping : Trip free
13) Total Break time : 60 ms (Max)
14) Mounting :Steel Structure
15) Rated Operating Sequence :O-0.3S – CO-3min – CO
16) Terminal Connector :Aluminum suitable for Panther ACSR
17) Requirement of Simultaneity of Poles :The maximum difference between instants of contact touching during closing and the maximum difference between the instant of contacts separation during opening between 3 poles shall not exceed one half cycle of the rated frequency. The Breaker shall be open and close simultaneously on all three phases for fault on any phase and or all the phases.

18) Auxiliary Power Supply

A.C. Supply :250 V + or – 20% (Phase to neutral),
3 phase, 50 HZ + or – 10%, Effectively earthed system.

D.C. Supply :24V+ or – 10%, 2 wire
ungrounded system.

F. Construction:

The vacuum circuit breaker shall consist of three single pole units, the base and mounting legs. The vacuum interrupters shall be constrained in the porcelain cylinders of the breaking sections thus establishing porcelain type construction. The operating mechanism, 3 phase interconnection links, trip-free feature shall be completely accommodated in the Breaker assembly. There shall be sufficient clearance between live parts of the circuit breakers and the ground.

Neither the circuit breaker nor any part of the switchgear or its supporting structures shall be permanently strained due to vibration etc., when making or breaking the rated short circuit currents.

G. Circuit Breaker Operating Mechanism:

The operating mechanism shall be motor operated spring closing mechanism. For spring closing a suitable AC motor working on 230 VAC single phase shall be provided. DC solenoid closing will not be accepted. It shall operate in principle in such a way that the closing springs, after each closing operation, are automatically charged by a latch. The breaker shall be provided to charge the springs manually also and each breaker is to be provided with one number manual operating handle.

The contact loading spring shall be designed in such a way that the contact bounce is eliminated and it shall be ensured that the closing stroke be completed and the opening stroke is commenced only from the fully closed position. All the breakers shall be suitable for manual operation. Anti pumping device shall be incorporated. All manually operating gear shall be so designed that the circuit breaker can be operated by one movement. The mechanism shall be such that the tripping spring can be charged while the circuit breaker is closed and the closing mechanism when charged shall not be operated by vibration caused by the circuit breaker opening under fault conditions. The supporting structure of VCB's should have provision for mounting current transformers also. The breaker shall be provided 2 Nos. trip coils.

The breakers will be remote controlled and suitable provision shall be made in the operating mechanism box to electrically close and trip the breaker from the control room. The DC tripping coil shall be rated for either 24 volts or 220 volts which shall be ensured during site survey i.e. the existing DC control voltage at the substations after placing the purchase order. Provision shall be made for manual release of tripping mechanism.

A mechanically operated indicator shall be provided on each circuit breaker operating mechanism to show whether the circuit breaker is "OPEN" or "CLOSED" indicators shall be provided to show whether spring is in charged condition or in the discharged condition. Sufficient number of normally open and normally closed auxiliary contacts shall be provided. Means shall be provided for manual closing operation of circuit breaker for maintenance purpose.

Vacuum Circuit Breaker complete with suitable painted steel support structure (with anchor bolts & nuts) for mounting 1 No. circuit breaker – 3 poles. Mechanism box

Note :
i) Earth strips as per IS shall be provided for proper earthing of equipments.

ii) EARTH BAR OF COPPER (SUITABLE FOR TERMINATION OF 2 NOS. 40 X 6 MM FLATS) SHALL BE PROVIDED ON CIRCUIT BREAKER SUPPORT STRUCTURE.

iii) Size and length of the control cable shall be as per field conditions for commissioning of 11KV 2MVAR capacitor banks.

iv) Size of interconnection cable from breaker terminal, CTs terminal to control relay panel is 2.5 Sq.mm. multistrand PVC copper control cable (un-armored).

v) 100 mtrs length of 10C x 2.5 Sqmm PVC Copper Control Cable shall be provided for remote control.

vi) Closing push button, opening push button, HTC Push button and electronic bell along with LED Pilot indication lamp shall be provided as a loose item and shall be installed on control panel by the supplier.

H. Type And Duty:

i) The circuit breaker shall be outdoor, 3-pole, vacuum type M2 class (minimum 10,000 operations) in case of 11KV having internal isolation without any sequential interlock.

ii) The duty of the circuit breaker shall involve satisfactory interruption of short circuit currents as listed in the clause 5.2 (Technical Parameters).

iii) The breaker shall be capable of interruption of reactive current (lagging/leading) without under/over voltage.

4.11 MAIN CONTACTS AND ARC QUENCHING CHAMBER:

- The main contacts shall have adequate area and contact pressure for carrying rated continuous and short time current without excessive heating liable to cause pitting and welding.

- The tips of the arcing and main contacts shall be special copper-chromium alloy

- The contacts that are adjustable to allow for wear, shall be easily replaceable and shall have minimum movable part and adjustments. The arc-quenching device shall be of robust construction and shall not require any critical adjustment. The devices shall be easily accessible and removable for access to the breaker contact.

4.12 INTERLOCK :

All electrical and mechanical interlocks which are necessary for safe and satisfactory operation of the circuit breaker shall be furnished.

4.13 AUXILIARY CONTACTS :

Each breaker shall be provided with 8 NO and 8 NC and 4 NO+4 NC electrically separate spare Auxiliary contacts in addition to those required for its own operation and indication exclusively for purchaser's use.

The auxiliary contacts shall be rotating type so that normally open contacts can be rotating into normally close contacts and vice verse at site.

The auxiliary contacts shall be rated for 10A for AC and 5A for DC.

Note : i). Spare tripping and closing coils shall be clamped in the Breaker.

ii). Spring charging multiplier with 2 NO+/2NC shall be available and shall be wired to the spare terminal blocks.

iii). Auxiliary switch contact multiplier shall also be incorporated in the control panel and shall be wired to the spare terminal blocks.

iv). Spare tripping coil and closing coil for each breaker & an auxiliary switch, TNC switch for 3 breakers shall be given.

4.14 INSULATORS:

Bushing insulators for circuit Breakers shall comply with IS2099-1986 specification for High Voltage porcelain bushings.

Insulators shall be wet process porcelain, brown glazed and free from all blemishes. Ferrous metal parts and hardware shall be hot-dip galvanized.

Insulators shall have adequate mechanical strength and rigidity to withstand the duty involved.

When operated at maximum system voltage, there shall be no electrical discharge. Shielding rings, if necessary, shall be provided. Insulation shall be coordinated with basic impulse level of the system. The creepage distance shall correspond to heavily polluted atmosphere.

4.15 WIRING & TERMINAL BLOCKS :

A. Wiring:

i. Wiring shall be complete in all respects to ensure proper functioning of the control, protection, monitoring and interlocking schemes.

ii. Wiring shall be done with flexible 650 V grade, PVC insulated switch board wires with 2.5 sq.mm. stranded copper conductor.

iii. Each wire shall be identified at both ends with permanent markers bearing wire numbers as per wiring diagram. The wiring schematic may conform to relevant standards.

iv. Wire termination shall be done with crimping type connectors with insulating sleeves.

v. All spare contacts of relays, push buttons, auxiliary switchers etc. shall be wired upto terminal blocks in the control cubicle.

B. Terminal Blocks :

i. Terminal blocks shall be 650 V grade, box clamp type (Stud Type).

ii. Not more than two wires shall be connected to any terminal. Spare terminals equal in number to 20% active terminals shall be furnished.

iii. Terminal blocks shall be located to allow easy access. Wiring shall be so arranged that individual wires of an external cable can be connected to constructive terminals.

STRUCTURE : 75 X 40 X 6 mm channel shall be provided to accommodate capacitor cells so as to avoid bending movement.

Breaker to Capacitor Banks shall be provided with Aluminium Panther Conductor.

4.16 MECHANISM BOX CONTAINING:

a) Operating mechanism

b) Mechanical indicator for "ON" and "OFF" coupled to the Circuit breaker operating mechanism.

c) Mechanical close and trip (with protective flap) lever/push button.

d) Terminal blocks for control wiring and a spare terminal block (with 20% of the active terminals) (preferably nut & bolts type).

e) Operation Counter.

f) 2 Nos. cable glands over and above those provided for control cables with suitable dummies.

g) Not less than 8 numbers normally open and 8 normally closed spare auxiliary contacts over and above those required for normal operation.

h) 250 V single phase AC Motor/Manual operated spring charging mechanism complete with electrical spring release coil, 2 Nos. shunt trip coil and 1 No. closing coil.

i) Local – Remote selector switch.

j) Earth bar (suitable for termination of 2 Nos. 50 x 6 mm class)

k) 6 Nos. Terminal connectors for incoming and outgoing connectors.

l) Set of 2 pole MCBs for AC and DC supply with different colours.

m) 1 No. of anti-pumping relay.

4.17 Current Transformer (CT):

A. Technical Particulars : The current transformers required for operation of capacitor Bank are covered in this specification. The current transformers shall conform to the latest version of 2705 or any other equivalent international standard.

Live tank Oil impregnated and have multiple CT ratio with secondary 1A and burden 15 VA for both metering and protection. ISF for metering must be less than 5 protective class is 5P 10 and meter class is 0.2s.

1. Rated voltage : 11 KV
2. Type : Single phase outdoor live tank oil cooled Vacuum impregnated type –
3. Earthing : Solidly earthed

4 Insulation level	:	75/28/11
5 Nominal system voltage	:	11 KV
6 Highest system voltage	:	12 KV
7. Impulse withstand voltage	:	75 KV P
8. One minute power frequency Withstand voltage	:	
a. Primary	:	28 KV
b. Secondary	:	3 KV
9. Frequency	:	50 Hz
10. Transformation ratio	:	200-100/1-1A
11. Rated secondary current (Amp):		
i) Core I (Protection)	:	1
ii) Core II (Metering)	:	1
12. Rated output (VA)	:	
i) Protection	:	15 VA
ii) Metering	:	5 VA
13. Class of accuracy :		
i)Protection (Core I)	:	5P10
ii) Metering (Core II)	:	0.2 S
14. Short time thermal current And its duration	:	25KA/3Sec The short time thermal current should Suit the breaker rupturing capacity and Duration to suit the maximum tripping Time.
15. Accuracy Limit factor	:	--- 10 for protective core ---
16. Class of Insulation	:	Immersed in new insulating oil.
17. Limit of Temp. Rise (Max.)	:	55 Degree C.
18. Rated Continuous Thermal Current	:	630 A

NOTE: The CTs shall be live tank out door type and shall be offered with first filling of oil. The oil shall confirm to the latest IS:335.

B. Construction :

i) The core shall be high grade non-ageing electrical silicon-laminated steel of low hysterisis loss and high permeability to ensure high accuracy, at both normal and over current/voltage.

ii) The secondary terminals shall be brought into a compartment on one side of current transformer for easy access. The Secondary terminal shall be provided with short circuiting arrangements of current Transformer The secondary taps shall be adequately reinforced to withstand normal handling, without damage.

iii) The current transformers shall be suitable for mounting on steel structures or concrete pedestals. The necessary flanges, bolts, etc, for the base of the Current Transformer shall be supplied and these shall be galvanized. The current transformer tank and other metal parts shall be galvanized.

iv) All windings of Current Transformers shall be made of high grade electrolytic copper wire double paper covering insulation and the manufacturing of the units shall be done in completely closed and air-conditioned room. Fibre glass insulation sleeves are to be provided for primary winding. Details of winding and core shall be furnished.

v) The Current Transformers shall be complete in all respects with filling of oil conforming to IS:335 and with oil level indicator with minimum/maximum oil levels. The top cover and terminal box cover should be such that rain water does not enter even through the gaskets.

vi) The to cover of the CT should be designed to avoid the stagnation of water. The tan thickness should be not less than 10 SWG(3.25mm) and top cover should be 5 SWG(5.38mm).The creepage distance should be 300mm(min).

C. Primary & Secondary Terminals:

i) Primary terminals of Current Transformers to which the line connections are to be made shall have dimensions as per IS: 10601:1983 and **material shall be of tinned cooper.**

ii) The secondary terminals shall be brought out into suitable compartment, which shall have a removable cover. The terminal box with the cover closed and tightened and the cable/conduit in position when supplied shall have a degree of protection conforming to IP 54 of IS: 2147.

D. Terminal And Earth Connectors: Terminal connectors suitable for Panther ACSR Conductor shall be supplied. Suitable earth connectors for earthing connections shall also be supplied.

E. EARTHING: The assembly comprising of the chasis, frame work and the fixed parts of the metal casing of the CT, shall be provided with two separate earthing terminals. The earthing terminals shall be adequate size protected against corrosion and metallically clean and identified by means of the sign marked in a legible and indelible manner on or adjacent to the terminals.

F. SEALING ARRANGEMENT: Provision for sealing secondary terminal compartment, primary ratio change strips (if any) and tank effectively shall be made such that no fraud etc. such as tampering of the ratio or circuit (current) is possible. The holes provided for the above sealing provision shall be of adequate size and pass the sealing wire of about 14 SWG.

G. Each instrument Transformer shall be provided with prismatic type oil sight window at suitable location so that the oil level is clearly visible with naked eye to an observer standing at ground level.

H. For compensation of variation in volume of the oil due to temperature variation nitrogen cushion or stainless steel bellows shall be sued. Rubber diaphragms shall not be permitted for this purpose.

I. The units shall be vacuum filled with oil, after processing and thereafter hermetically sealed to eliminate air and moisture from entering the tank.

5.0 CONTROL PANEL:

Window type annunciator scheme for the following fault indication along with alarms and flasher bus for each capacitor banks shall be provided.

a) DC supply failure
b) Power factor leading
c) Trip circuit-I faulty
d) Neutral displacement protection relay operated

e) Under voltage relay operated
f) Over voltage relay operated,
g) Over Current relay & Earth Fault protection relay operated.
h) Capacitor Bank ready to close.
i) Trip circuit-II faulty
j) Capacitor tripped due to leading P.F
k) Under current relay operated

Provision for electrically closing /tripping of circuit breaker controlling capacitor banks shall be made. It is proposed to operate capacitor banks manually. Provision for lamp test of all the windows by a single push button may be provided.

6.0 INSTRUMENTS:

a) Digital 96 x 96 mm size (with 110V Auxiliary supply) AC ammeter with selector switch (R,Y,B,N,O/B, (OUT OF BALANCE,),OFF)
b) Digital 96 x 96 mm size AC voltmeter with suppressed zero scale with selector switch (RY,YB,BR,RN,YN,BN, OFF)
c) Reactive KVAR meter Analog class 1.0) 3-phase 3 wire
d) Digital 96 x 96 mm size P.F meter (3 phase – 3 wire) lag to lead.

7.0 PROTECTION AND INTERLOCKS:

a) Over current in all 3-phases and earth fault.

b) Over voltage with time delay to take care of switching surges.

c) Timer for closing interlock to prevent switching of capacitor bank before capacitors and breakers are ready.

d) Master tripping relay with H/R type for electrical tripping with adequate number of NO/NC contacts.

e) **Power factor regulator/**: Whenever LV loads are running at leading PF, the regulator /relay shall give alarm and as well as trip common to breaker so that bank cannot be permitted to switching .The regulator/relay shall be provided 2 NO + 2 NC potential free contacts. At lead P.F., the bank should be off/cut off through relay.

f) Under voltage relay with time delay

g) Harmonic insensitive current relay for unbalance protection.

h) Under current relay – Auto/manual selection switch – the capacitor bank shall be ON automatically in accordance to minimum set current i.e., 60A to cater this auto ON facility – suitable relays and its associated circuitary arrangements shall be provided in the control circuit.

i) It shall have RS232/RS 485 serial port with MODBUS protocol to download data.

Any other protection relays suitable for satisfactory operation of capacitor bank shall also be included and specified in the offer with details.

The unbalance relay shall have time delay short enough to minimize the damage due to arcing type fault with in the bank structure and yet long enough to avoid false operation due inrush, ground-faults on the line, lighting, switching of nearby equipment, or non-simultaneous pole operation of the energizing switch.

8.0 GENERAL REQUIREMENT OF OUTDOOR CONTROL AND RELAY PANEL:

A. TYPE OF PANEL:

The outdoor control panels shall be weather proof, vermin proof and rust free pressed steel cubicle type with hinged rear doors and locking device. The frame shall be made of angle iron or structural steel of sufficient weight and strength to ensure permanent rigidity and alignment. The cubicles shall be provided with interior illuminating lamps, inter-connections, small wiring leads, terminal blocks, fuses earth bar, multi core cable glands, earth connections etc.,

The panels should be provided with locking handle with built in door, lock shall be provided with duplicate keys.

The panel shall be of the following dimensions:

Height	2050 mm (including height of the stand of 450 mm)
Width	950 mm
Depth	700 mm

The Control & relay panel shall be powder coated (Seven tank operations) with SIEMENS GREY. The panel shall be provided MCB (AC & DC) with fuses units for AC & DC circuits. The internal wiring of the panels shall be with 2.5mm 660 V grade tinned copper PVC insulated wiring.

The gauge of the sheet steel for the front of the panels (where the meters etc., are fixed) and supporting members of the panels shall be 2 mm thick.

B. INDICATING LAMPS:

24V/220V +/- 10% DC LED Pilot Lamps(TECHNIC) shall be mounted and connections will be back side.

C. INTERNAL WIRING:

Panels shall be supplied with internal wiring between all electrical devices and terminal blocks. Wiring for interconnecting the panels shall also be provided. Colour code PVC wires (Red, Yellow, Blue and Black) shall be provided for CT & PT circuits.

All wiring shall be of 660 volts grade, multi core, PVC insulated. The minimum size of conductor shall be 2.5 Sq. mm. All internal wiring shall be securely supported.
The terminals shall be made with solder less crimping type of tinned copper lugs. Insulated sleeves shall be provided at all the wire terminations. Ferrules shall be provided for identification of terminals. All wires directly connected to trip circuits shall be distinguished by the addition of red colored ferrule.

Interconnections to adjacent panels shall be brought out to a separate set of terminal blocks located near the stocks or holes intended for taking the interconnected wires.

D. **TERMINAL CONNECTORS:** It shall be of 1100 V grade have 30 Amps. Continuous rating, moulded piece complete with insulated barrier. Stud type terminals, washers, nuts and lock nuts are required. Marking on the terminal strip shall correspond to wire number on the wiring diagram.

Terminal blocks for CT shall have test links and disconnecting line type - CAT M4.

A minimum clearance of 250 mm between 1st row terminal block and associated gland plate is required. There shall be minimum clearance of 150 mm between rows of terminal blocks. A

steel strip shall be connected between adjacent terminal block rows at 450 mm intervals for support of incoming cables.

E. SPACE HEATER:

Tubular space heater suitable for single phase 250V 50 C/S shall be provided at the bottom of each cubicle. The watt loss per unit surface of the heater shall be low enough to keep surface temperature well below visible heat.

F. FUSES:

Suitable HRC fuses shall be mounted in the interior of cubicle. The fuse and carrier shall have imprint of the fuse rating. Fuses of PT circuits shall be provided with phase circuit tables.

Internal lighting shall be provided in the cubicle.

G. INDICATING INSTRUMENTS:

All instruments shall be of switchboard type, back connected provided with dust tight cases for tropical use. The limits of error shall be permissible under IS. 1248 of 1968 for control panel instruments.

All ammeters shall be provided with direct reading scales. The value of AC ammeter shall be equal to 1 to 1.3 times the rated primary current of the current transformer.

All voltmeter shall be provided with direct reading type. The maximum voltage of the scale shall be 15% in excess of the normal voltage.

The insulation of relays shall be subjected to one minute dielectric test voltage of 2 KV RMS to earth. The overload withstand strength shall be according to BS 142.

All metallic parts of equipment shall be connected to earth bus.

Annunciation shall be provided from capacitor bank to control room in existing Alaram board

9. LIGHTNING ARRESTORS(CLASS-III):

The lightning arrestors shall be of metal oxide, heavy duty type and disconnecting type, should have impulse flash over characteristic and other technical parameters as per IS 3070 or any other equivalent international standards.

The lightning arresters shall be of the following ratings.

		STATION TYPE
a.	Voltage	9KV
b.	Nominal Discharge current having an 8/20 micro Sec. Wave.	10 KA
c.	Frequency	50 Hz
d.	System Voltage	11KV

9.1 PERFORMANCE CHARACTRERISTSCS:

The Lightning Arresters shall meet performance characteristics as per IS-3070/ Part-I/1985 and IEC 99-4/1991.

9.2 GENERAL REQUIREMENTS:

I. The insulating casing of the arrester shall be made of brown glazed Electrical porcelain free from cavities or other flaws etc., and properly vitrified.

II. The said design shall be such as to minimize surface contamination by natural action of wind and rain as much as practical.

III. The creepage distance shall be large to ensure that the resulting surface contamination in the specified weather conditions do not adversely affect the arrester gap voltage grading and reduce the 50 Hz gap break down voltage.

IV. The non-linear resistance blocks shall be made or material which when subjected to extreme weather conditions encountered in the tropics will have non ageing characteristics and stable thermal properties.

a. The radio interference level for the arrester shall be negligible.

b. The arrester shall withstand low magnitude current surges of long duration resulting from switching surge of accumulation of static charges from atmosphere.

c. The arrester shall have safety devices to avoid hazards in the event of failure of the unit under extremely unfavorable conditions.

d. The protective characteristics of the arresters offered shall be clearly specified in the schedule of guaranteed technical particulars.

e. Each individual unit shall be hermetically sealed and fully protected against ingress of moisture. The hermetical seal shall be effective for the entire life time of the arrester. The tenderer shall furnish sectional view of the arrester showing details of sealing employed.

9.3 TYPE OF MOUNTING:

a) The necessary bolts, nuts or clamps etc., are to be supplied for mounting the lightning arrester on channel. The bolts and nuts and clamps etc., shall be suitably galvanized as per IS:2629.

b) The arrester shall be provided with suitable terminal connectors – Suitable ground terminal connectors shall also be provided.

c) All porcelain housings shall be free from lamination cavities or other flaws affecting the maximum level of mechanical and electrical strengths. The porcelain shall be well vitrified and non porous.

d) The porcelain petticoat shall be preferably of self cleaning type. The details of the porcelain housing such as height, angle of inclination shape of petticoats gap between petticoats etc., shall be indicated by the tenderer in his offer in the form of a detailed drawing.

e) The arrester shall be provided with terminal connectors suitable for 20,30,50,80 and 100 Sq.mm ACSR/ or equivalent AAA Conductor. Suitable ground terminal connector shall also be provided. Actual requirement of connectors shall be indicated by the Purchaser during placement of order.

9. The arrester for 11 KV System should have a suitable pressure relief system in order to avoid damage to its porcelain housing. The arrester shall be provided with a suitable disconnecting divide which shall be connected in series with the ground lead and shall not effect the sealing system of the disconnect.

10. ISOLATORS (11KV 800Amp Double Break with Post Type Insulators):

10.1 The isolators shall conform to the latest version of IS 1818 IS 9920 (Para-I to IV) and IS 9921 (Part-I to IV or any other International standards).

10.2 The Isolators shall have the following ratings:

a)	Rated voltage	: 12 KV
b)	Rated impulse withstand voltage	: 75 KV
c)	Rated current	: 800A
d)	Rated frequency	: 50 Hz
e)	Rated short time current	: 25KA/3s
f)	Rated peak short circuit current	: 40 KA
g)	Rated max. duration of short circuit	: 1 Sec.

10.3. LIMITS OF TEMPERATURE RISE:

The limits of temperature rise shall be as given in Table 4 IS:1818/1972 and the Reference conditions mentioned there in.

10.4. CONSTRUCTION (CONVENTIONAL TYPE):

10.4.1 Air Break Switches shall be 3 pole gang operated double break type as Specified in section –VII. All ferrous parts except those of stainless shall be hot Galvanised. All nuts & M.S bolts other than stainless shall be Galvanised properly Conforming to IS: 2633 (latest version). The threads of nuts and tapped holes Cut after the galvanization shall be well oiled or greased.

10.4.2 The Switches are meant for mounting on structures at a height of 6.1 to 7.32 Meters from the ground level. All the rotating parts, the bell crank lever and the Fork at the end of operating pipe shall be made of steel or forged but not cast. This shall be clearly confirmed in the tender quotation.

10.4.3. i) BLADES: The blades shall be of best hard drawn electrolytic copper strip/extruded hollow copper tube of the same quality and be capable of carrying rated current continuously and fault current, with safety at all times. The contact end shall be Silver plating of 12 to 15 microns.

ii) FIXED CONTACT: The fixed contact element shall be made of rolled extruded Electrolytic grade copper flat and with flexible ends, where required shall be made from soft electrolytic grade copper sheet. The contacts assembly shall be so designed that while carrying the rated continuous current, the temperature rise does Not increase beyond the value specified IS: ie.40^0C above ambient. The contact shall be self-release jaw-type and suitable stainless steel springs of sufficient pressure, shall be provided to ensure proper contact in the closing position.

iii) Fixed contacts shall be provided with 2 sets of stainless steel (non-magnetic) springs each of either side of fixed contact blades so that smooth contact is made for making and breaking contact.

iv) Fixed and moving contacts shall be designed to carry current with current density of 2 Amps/sq.mm.

v) Moving contacts cross sectional area @ 2 Amps/mm^2 should be with current density of 2 Amps/sq.mm

vi) All the bolts used in the switch contacts shall be of stainless steel.

vii) ARCING HORNS : The AB (Air Break) switch shall be provided with 3 sets of removable rod types arcing horn with make before and break after feature. Arcing Horns of GI material on a seat for each phase shall be provided. The diameter of the arcing horn Rods should be not less than 10mm.

viii) TERMINAL CONNECTORS : The terminal pad shall be made of rolled/extruded electropolytic grade copper flat having a cross sectional area equal to that of the blade. It shall be

so constructed that an intimate contact with the contact element is ensured. That connector shall be suitable for ACSR conductor. The Aluminium connectors of appropriate size shall be supplied for each phase of the switch.

ix) BEARING : The Rotating stack shall be supported with ball bearings/bearing to ensure smooth operation in case of 11KV 800A .

x) Each rotating insulator stack shall have thrust roller bearings and shall rotate into gun metal bush bearings contained in a suitable weather proof housing. The housing shall be fitted with the greasing nipple.

xi) PHASE COUPLING BAR: The bar is required for coupling the rotation of the 3 phases and should be fixed in a manner with a universal joint to permit the smooth movement for operation of switches.

xii) The leakage current shall pass to earth and not between terminals of the same pole or between poles. A reliable earthing terminals having a clamping bolt of atleast 12mm dia provided on the frame at one end of the isolator. It shall be marked with the earth symbol indelible manner on/or adjacent to the terminal.

xiii) The operating mechanism shall be suitable for normal operation by one man without undue effort.

xiv) The length of AB Switch pipe and handle shall be in such way that it should match with capacitor bank height and the operation of the AB Switch should be in a smoother way. The mechanism shall provide adequate mechanical leverage with minimum of loose/lost motion. The pipe shall conform to class 'B' GI pipe of IS 1239 (latest version). The AB switches shall be constructed in such a manner to permit pad locking both open and closing position and also with mechanical stopper in open and closing position.

10.4.4. MECHANICAL STRENGTH : The isolating switches shall be capable for withstanding the rated mechanical terminal loads and electro magnetic forces, without effecting the operation and current carrying properties. The switches, complete with the operating mechanism should not come out of their own in closed position due to the effect of gravity, wind pressure, vibrations and reasonable shocks. Their construction should be such that they do not get damaged under any influence of short circuit currents.

10.4.5 BOLTS & NUTS : The required bolts, nuts, washers etc. for assembling the complete air-break switch for fixing the insulators to the metallic parts of AB Switch at both top and bottom and for fixing the AB switch to the structures shall be supplied with the equipment at no extra cost. Bolts and Nuts shall be provided with lock-washers and lock Nuts wherever required.

10.5 The clearances shall be as given below:

		11KV 800A Double Break AB Switches
a)	Phase clearance (i.e centre to center distance between the insulators of adjacent phase in the assembling position of the Switch):	920 mm
b)	Centre to center distance between insulators of the consequent poles of the same phase in the assembling position of the switch.	381 mm
c)	Minimum clearance between phases for any position of the switch.	153 mm

There should be adequate clearance between H.G. fuse set and AB Switches operating handle when the switch is erected on a transformer structure.

LOCKING ARRANGEMENTS : The AB (Air Break) Switches shall be constructed in such a manner to permit pad locking in both open and close position.

GALVANISING : All ferrous parts should invariably be hot dip galvanized except the bolts, nuts, washers, spring washers and split pins, which shall be electro-galvanised. The threads of nuts and tapped holes that shall be cut after the galvanization shall be well oiled or greased.

10.6 SUPPLY OF AB SWITCHES WITH INSULATORS : The insulators for the isolating switches shall be of porcelain Post Type Insulators for 11kV 800 A AB Switches and shall be in accordance with IS: 2544 and IS:5350 (Part-I to IV) latest version. The assembly of the metal parts and porcelain shall be in such a manner that the metal and porcelain part shall not have any deteriorating effect or create undue stresses adversely affecting the mechanical and electrical strength of the unit arising out from any harmful expansion. The insulators shall be of standard make and shall be purchased from reputed manufacturers only.

10.7. GENERAL REQUIREMENTS : The porcelain shall be sound, free from defects, thoroughly vitrified and smoothly glazed.

Unless otherwise specified, the glaze shall be brown in colour. The glaze shall cover all the exposed porcelain parts of the insulator except those areas, which serve, as supports during firing and required to be un-glazed.

Precautions shall be taken during design and manufacture to avoid the following

a) Stresses due to expansion and contraction, which may lead to deterioration.
b) Stress connection due to direct engagement of the porcelain with the metal fittings.
c) Retention of water in the recesses of metal fittings, and
d) Shapes, which do not facilitate easy cleaning by normal methods.

10.8. Cement used in the construction of post insulators shall not cause fracture by expansion or loosening by contraction and proper care shall be taken to locate correctly the individual parts during cementing. The cement shall not give rise to chemical reaction with metal fittings, and its thickness shall be as uniform as possible.

10.9. The threads of the tapped holes in the post insulators metal fittings shall be cut after giving anti-corrosive protection and shall be protected against rust by greasing or other similar means.

10.10. TESTS FOR POST TYPE INSULATORS : The insulators shall comply with the relevant as specified in IS:2544 or latest version if any.

10.11. MARKING : Each insulator shall be legibly and indelibly marked to show the following :

a) Name of trademark of the manufacturer.
b) Month and year of manufacture.
c) Minimum failing load in newtons.
d) ISI certification mark, if any.

Marking on porcelain shall be printed and shall be applied before firing.

10.12. <u>TESTS FOR AB SWITCHES :</u> The following tests shall be carried out as per IS : 1818/1972 on complete isolators, and their operating devices.

10.13 TYPE TEST : The following shall constitute the type tests:

i) Impulse withstand voltage test.
ii) Power frequency- voltage dry test on main circuits.
iii) Power frequency- voltage wet test on main circuits.
iv) Temperature rise test of the main circuits.
v) Measurement of the resistance of the main circuits.
vi) Test to prove capability of carrying the rated peak short circuit current and the rated short time current.
vii) Operation test.
viii) Mechanical endurance test.

NOTE : All the above tests shall be conducted as per the relevant IS specification and a copy of the test report shall be furnished along with the tender. All the above tests shall be conducted in a **NABL lab**.

10.14 ROUTINE TESTS : The following shall comprise routine test :

i) Measurement of the resistance of the main circuit.
ii) Test to prove satisfactory operation.
iii) Temperature rise test.

11. TYPE TESTS:

Type test certificates of capacitors, breaker, control and relay panel, neutral current transformer, lightning arresters, isolators etc., shall be submitted by the tenderers along with the tenders. The type test for capacitor shall include endurance test as per IEC. Type test for breaker shall include capacity of breaker for capacitor switching. The type test certificates shall not be later than **5 years** from the date of tender opening.

a) Type test of associated material of 11KV 2MVAR Capacitor banks are considered individually, but not on total bank.

b) The Type tests for capacitor cells shall be on 220KVAR of 7.3KV to 8 KV.

c) Endurance test shall be as per IS 13925 (Part-I) : 2012 and IS 13925 (Part-2) : 2002 for 7.3 KV to 8 KV which is to be submitted along with the bid

Sl. No.	Description
	Type Test Certificates for Capacitors
1	Thermal Stability Test
2	Capacitor loss, measurement at elevated temperature
3	AC Voltage test between terminals and container
4	Lightening Impulse voltage test between terminal and containers
5	Short circuit discharge test
	Type Test Certificates for VCBs
1	Temperature rise test for the main circuit
2	Measurement of resistance of the main circuit
3	Operation tests
4	Mechanical endurance test
5	Impulse voltage Test
6	One minute Power frequency voltage dry withstand test
7	One minute Power frequency voltage wet withstand test
8	Test for short circuit conditions

9	Test for short time current test
10	Capacitor switching duty test
	Type Test Certificates for Series Reactor
1	Dimensional verification
2	Measurement of winding resistance
3	Measurement of Insulation resistance
4	Measurement of Inductance
5	Measurement of loss
6	Separate source withstand test (Dry powder frequency withstand test)
7	Temperature rise test
8	Lightening impulse test
9	Short time current test

	Type Test Certificates for NCTs
1	Short time current test
2	Temperature rise test
3	Lightning Impulse test
4	High voltage P.F wet withstand voltage test
5	Determination of errors
	Type Test Certificates for CTs
1	Short time current test
2	Temperature rise test
3	Lightning Impulse test
4	High voltage P.F wet withstand voltage test
5	Determination of errors
	Type Test Certificates for Isolators
1	Lightning Impulse withstand test
2	PF Voltage withstand test (Dry)
3	PF Voltage withstand test (Wet)
4	Short time current withstand test
5	Temperature rise test
6	Measurement of resistance test
7	Operation test
8	Mechanical Endurance test
	Type Test Certificates for Lightning Arrestors
1	Voltage withstand tests of arrester Insulation
2	Residual Voltage test
3	Long duration Current Impulse withstand test
4	Operating duty test
5	Pressure relief test
6	Temperature cycle test on porcelain housing
7	Porosity test on porcelain components
8	Galvanising test on metal parts

11.1 ROUTINE TESTS:

a) Capacitor : Routine tests as per ISS 13925/1998 or IEC-871-2
b) Measurement of losses of capacitor on 5% of each consignment.

11.2 BREAKERS:

Routine test as per IS/IEC.

11.3 CONTROL AND RELAY PANELS:

Routine tests as per ISS. Copies of test certificate for relays, meters and control switches shall be furnished.

12 GUARANTEED TECHNICAL PARTICULARS:

The tenderer shall furnish guaranteed technical particulars as per the annexures enclosed.

13. MOUNTING AND INTER CONNECTIONS:

A diagram showing the mounting arrangement for housing the capacitor bank shall be furnished along with the tender. Necessary arrangement shall be provided for connecting the capacitor banks with their associated protection equipment to the bus bars, and respective vacuum circuit breaker. A schematic diagram for the complete capacitor bank with protective and control equipments of the capacitor banks shall also accompany the tender.

The interconnections between the capacitor banks and the all the associated equipment viz., Circuit Breakers, Lightning Arrestors Panels, Isolators etc., shall be provided by the successful bidder. The elevating structures for mounting of the equipment are also to be provided by the bidder. The suitable connectors also shall be supplied along with the equipment.

14. DESCRIPTIVE LITERATURE AND DRAWINGS:

All descriptive literatures and drawings connected with the capacitors, controlling breakers, control & relay panels, relays, Isolator, Lightning Arresters etc., shall accompany the tender.

TECHNICAL SPECIFICATION FOR CMRI COMPATIBLE H. T. ELECTRONIC TRIVECTOR METERS WITH DLMS PROTOCOL WITH 0.2S CLASS OF ACCURACY

1. SCOPE:

This specification provides for manufacture, testing before dispatch, procurement of recording type HT Electronic Trivector Meters, capable of performing the functions described in the subsequent sections. This is functional specification and it is the responsibility of tenderer to design the equipment and furnish full details along with tender to enable board to evaluate the offer.

2. STANDARDS APPLICABLE:

The meters should conform to the following specifications whenever it does not conflict the requirements of this specification.

IEC 185 : Current transformers for metering

IS 9000 : Environmental testing
IS 8161 (Draft) : Impulse wave testing
IS 14697 : AC Electricity HT Trivector meters
Department of Energy : Requirements and specifications for pattern energy,
Govt. of U. K. approval of meters, auxiliary devices and other apparatus in accordance with electricity lightning Act, 1899.

3. MATERIAL USED:

The meter will be made out of high quality materials to ensure higher reliability and long life. The entire design and construction shall be capable of withstanding the several stresses likely to occur in actual service. The soldering shall be perfect without dry solders.

4. SUPPLY SYSTEM:

CT & P T connections to be arranged by the lease contractor.

Primary voltage : 11 KV
Secondary voltage : 110 volts
Primary Current : 10A and above
Secondary current : 5A or 1A
H. T. meter shall be suitable for 3 phase 4 wire connections.

5. POWER SUPPLY VARIATIONS:

The meter should be suitable for working satisfactorily with following supply system variations.

Voltage : V ref. plus or minus 20%
Frequency : 50 Hz (-1.5 Hz to +0.5 Hz)

6. QUANTITIES TO BE MEASURED / MONITORED:

The meter should be capable of measuring and displaying the following electrical quantities within specified limits of error for poly phase supplies balanced or unbalanced at all power factors. Apparent energy should be derived from the active and reactive energy.
Active energy : KWH/MWH
Reactive energy : KVArh/MVArh

7. DISPLAY:

The meter should have legible LED/LCD six digits display. The display should be cyclic to display different parameters. A push button should be provided to enable cycling of the display. An additional digit should display legend for the currently displayed parameter.

8. COMMUNICATION CAPABILITY:

The meter shall be provided with an optical communication port so that it can be easily connected to a handheld meter reading instrument for data transfer or subsequently hooked to a remote metering device, such as modems etc., optical port for communication shall conform to IEC 1107/RS-485 Port.

9. TERMINAL ARRANGEMENTS:

The terminals shall be marked properly on terminal block for giving external connections. A diagram of connections should be provided inside the cover of terminal block. External terminal cover shall be provided. The terminal block should be moulded insulation fixed to extension of meter base.

10. STORAGE OF DATA:

The meter shall be provided with a solid state memory module. It shall form an integral part of the meter and will be enclosed in a single mounting box. The parameters to be stored are time, KW and KVAR during the interval. KVAR shall be with proper sign to indicate lagging or leading power factor. Memory shall be adequate to store the data for 35 days with interval time of 15 minutes. The memory shall also store power on time, power off time, PT status and CT status.

11. SEALING OF THE METERS:

Provisions shall be made for sealing of meters as per IS 13010. At least four sealing screws shall be provided for proper fixing of the meter cover. The meter should be designed and constructed in such a manner to make it pilfer proof once it is sealed.

12. TEST TERMINAL BLOCK:

Suitable provision should be made in the terminal block for disconnecting the meter for testing purposes and for testing with test load. The test terminal block shall have provision for isolating the meter from instrument transformers secondary connections. Proper arrangements for sealing the test terminal block's cover to be made.

13. ENVIRONMENTAL ASPECTS:

Meter shall be designed and constructed to be capable of withstanding all severe stresses and vibration and dust environments likely to encounter in actual practice as the meter will be installed outdoor in boxes. The withstanding capability shall be + 55 Degree centigrade temp.

14. TAMPER AND FRAUD PROTECTION:

The meter shall have features to prevent/defect common ways of tamper and fraud.

a) Phase sequence Reversal: The meter should work accurately irrespective of the phase sequence of the supply. The meter must have capability to indicate availability and continuity of CT circuit. In case of shorting of one/or any phases the meter shall indicate such occurrences along with time and duration.
b) CT polarity Reversal: The meter should register energy consumption correctly even though the CT polarities are reversed.
c) Missing Potential: The meter should be capable of recording occurrences of missing potential which can happen either owing to a PT fuse blowing or due to internal of dis-connections of a potential lead.

d) Influence Quantities: The meter should work satisfactorily even under presence of influence qualities such as:
    i) External Magnetic field
    ii) Electromagnetic field
    iii) Radio frequency interferers
    iv) Unbalance in load
    v) Vibrations etc.

15. GUARANTEED TECHNICAL PARTICULARS:

The technical particulars as specified in the IS/IEC (where applicable) shall be guaranteed and a statement of guaranteed technical particulars shall be furnished along with tender.

16.0 ACCURACY:

The accuracy of active power and reactive power measurement by meter shall be tested in accordance with IS14697 read with latest amendments and the class of accuracy for meter shall be 0.2s.

17. SHORT TIME OVER CURRENTS:

The meter shall be able to carry 0.5 seconds a current equal to 12 times rated current I. After application of this short time over current with the voltage maintained at the terminals, the meter shall be allowed to return to the initial temperature with the voltage circuit(s) energized (about 1h).

18. TESTS AND TEST CERTIFICATES:

The tests shall be carried out as per IEC/IS wherever applicable before dispatch and the test certificates shall be furnished for approval.

IMMUNITY TO ELECTROMAGNETIC DISTURBANCE:

The meter shall be designed in such a way that conducted or radiated electromagnetic disturbance as well as electrostatic discharge do not damage or substantially influence the meter. The test report from any standard lab conducting the tests as prescribed in draft CBIP specification (technical report 88) and test results submitted before placing an order.

19. DRAWINGS AND LEAFLETS:

Two sets of drawings showing clearly the general arrangements, fitting details electrical connections and design features of each component part should accompany the tender. Technical leaflets giving operating instructions should also be furnished along with the tender. TENDERS WITHOUT DETAILS ARE LIABLE FOR REJECTION.

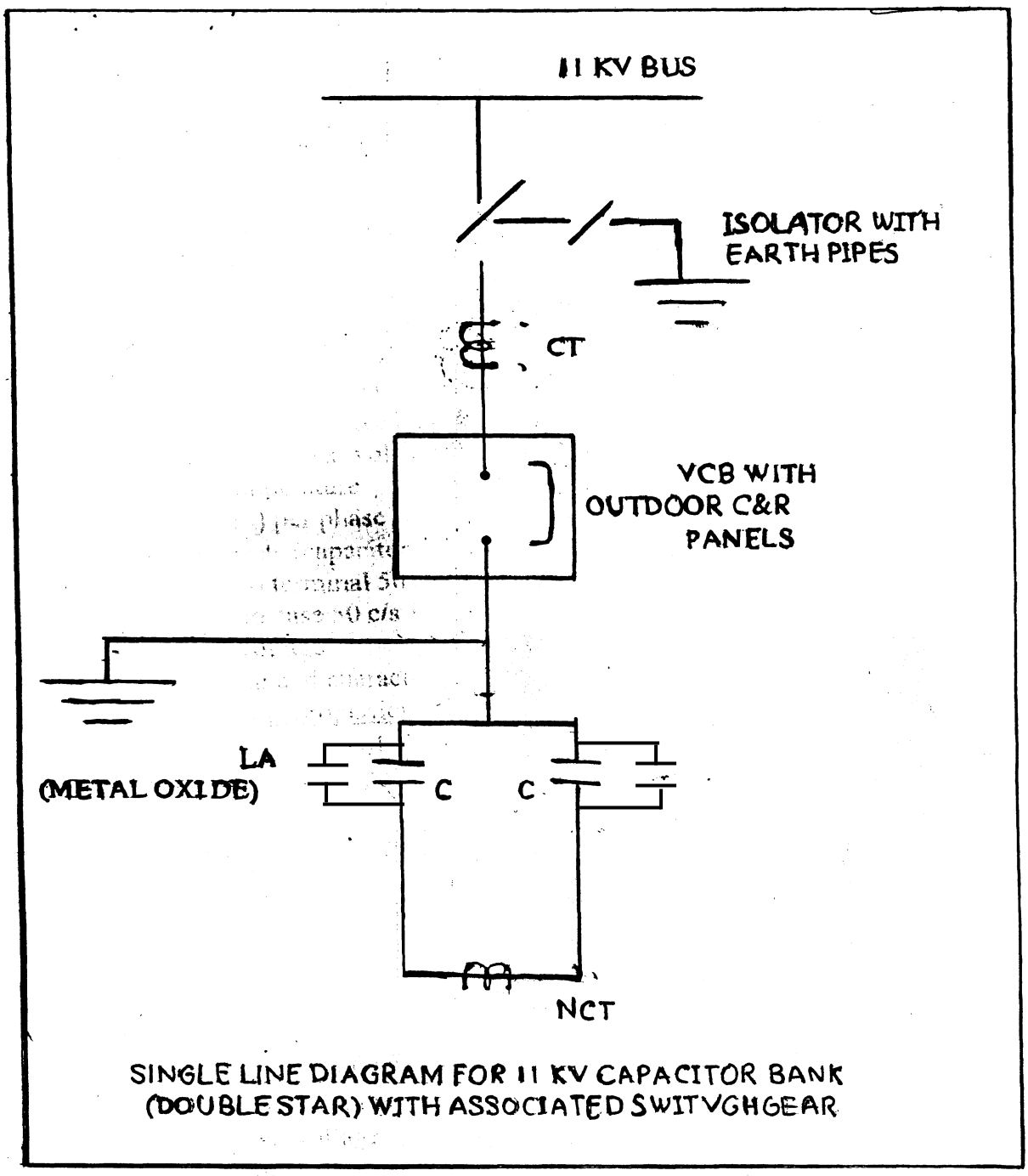
20. DEPARTURE FROM SPECIFICATION:

If the tenderer wishes to depart from this specification in any respect, he should draw the attention to such points of departure explaining fully the reasons therefore. Unless this is done, the requirements of this specification will be deemed to have been accepted in every respect.

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

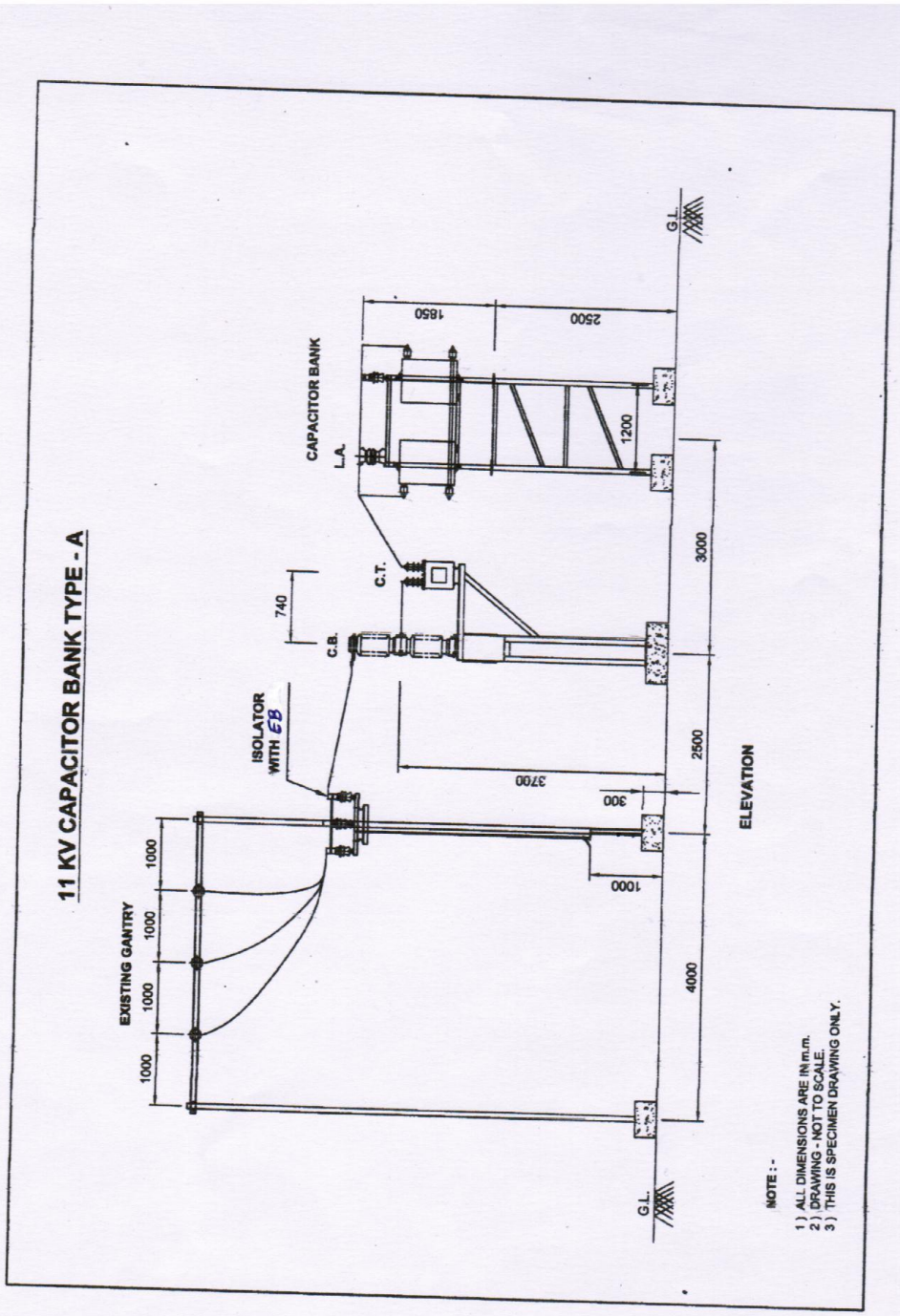
DESCRIPTIVE LITERATURE AND FULL PARTICULARS OF THE EQUIPMENT OFFERED

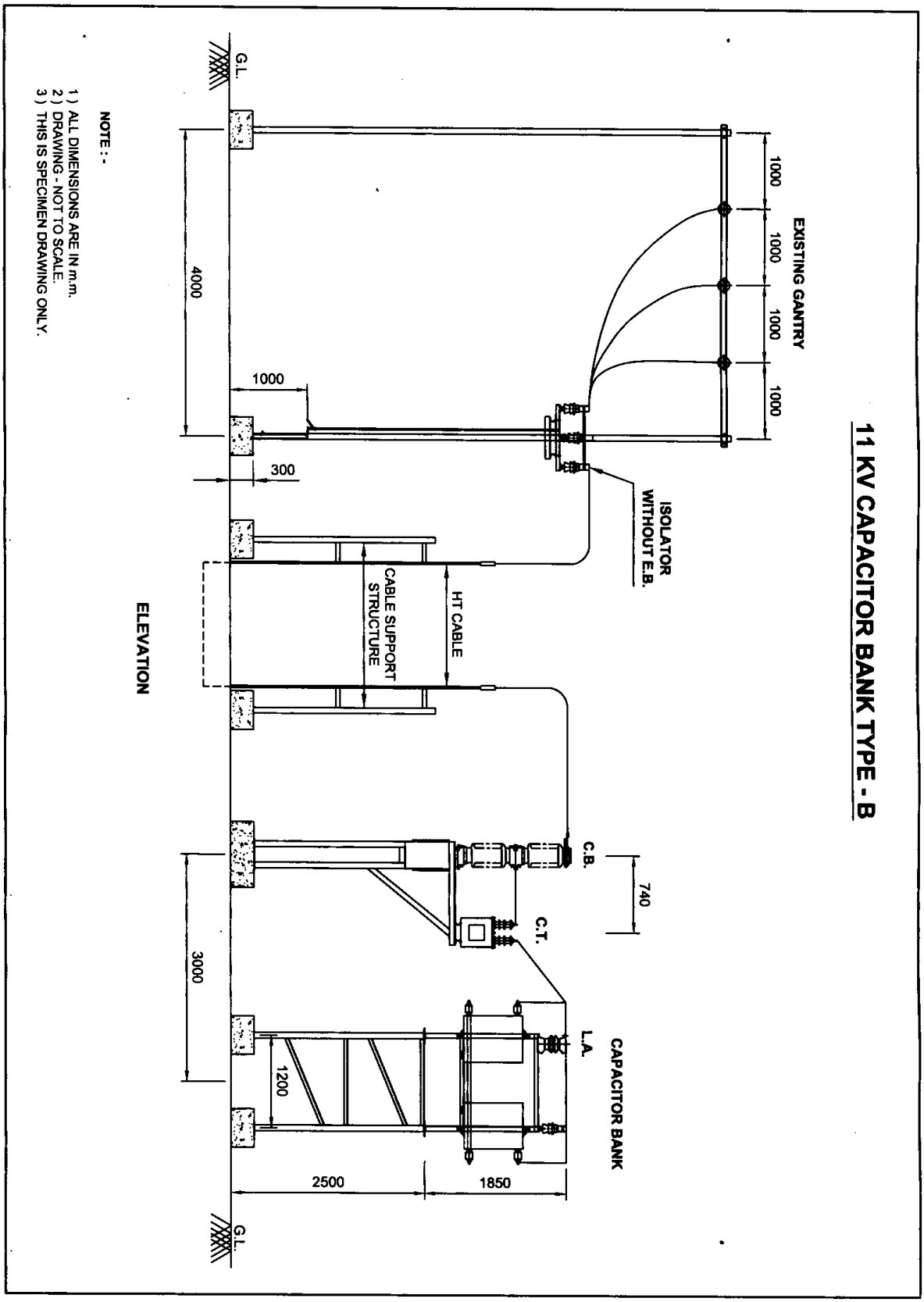
Sl.No.	Item No.	Description



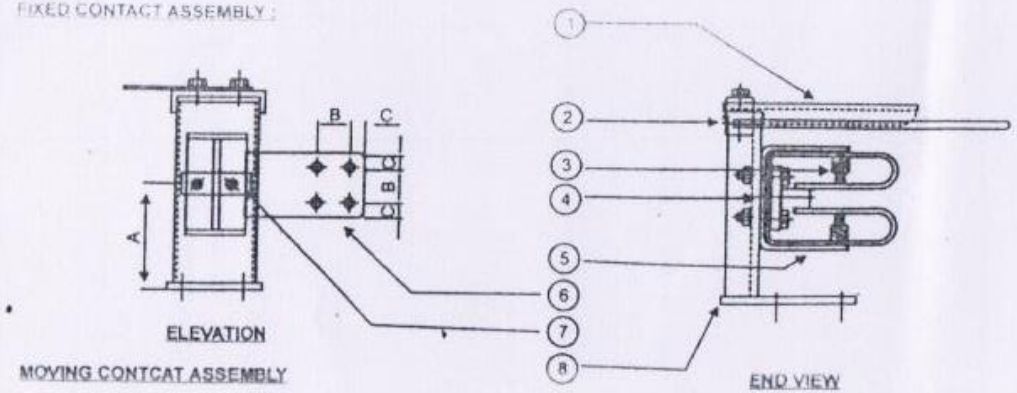
SINGLE LINE DIAGRAM FOR 11 KV CAPACITOR BANK
(DOUBLE STAR) WITH ASSOCIATED SWITVGHGEAR

The above single line diagram shall be read with series reactors.


11 KV CAPACITOR BANK TYPE - A
EXISTING GANTRY
1000
1000
1000
1000
ISOLATOR WITH EB
C.B.
740
C.T.
CAPACITOR BANK
L.A.
1850
2500
1200
3000
2500
3700
300
1000
4000
G.L.
G.L.
ELEVATION
NOTE : -
1) ALL DIMENSIONS ARE IN m.m.
2) DRAWING - NOT TO SCALE.
3) THIS IS SPECIMEN DRAWING ONLY.


11 KV CAPACITOR BANK TYPE - B
EXISTING GANTRY
1000
1000
1000
1000
4000
1000
300
ISOLATOR WITHOUT E.B.
CABLE SUPPORT STRUCTURE
HT CABLE
C.B.
740
C.T.
3000
L.A.
CAPACITOR BANK
1200
2500
1850
G.L.
G.L.
ELEVATION
NOTE : -
1) ALL DIMENSIONS ARE IN m.m.
2) DRAWING - NOT TO SCALE.
3) THIS IS SPECIMEN DRAWING ONLY.

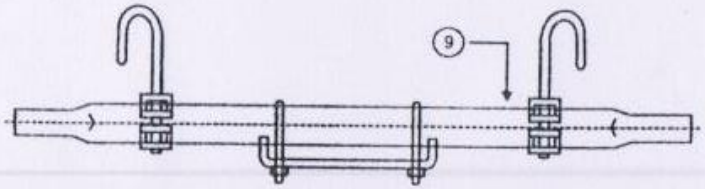
FIXED CONTACT ASSEMBLY :



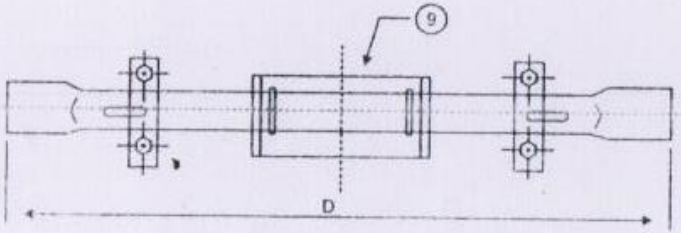
ELEVATION

MOVING CONTCAT ASSEMBLY

END VIEW



ELEVATION



PART LIST

1. HOOD (MS HDG)
2. ARCING HORNS (ø 10 ROD M S HDG)
3. SPRINGS (STAINLESS STEEL)
4. JAWS (25x4Cu FLAT 2 Nos. SILVER PLATED)
5. JUMPER PLATE (75x10 mm THICK ALUMINUM FLAT)
6. SPACER (ALUMINUM)
7. SUPPORTING CHANNEL (M S HDG)
8. MOVING CONTACT (38 OOx32 ID HDEC TUBE) ENDS SILVER.
9. CENTER MECHANISM (M S HDG)

NOTE :

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL NON FERROUS CONTACT POINTS ARE SILVER PLATED NOT LESS THAN 15 MICRONS)
4. THE MOVING CONTACT ASSUMABLY SHOWN IS FOR HANGING TYPE ASSEMBLY

DIMENSION			
A	B	C	D
125	40	39	860

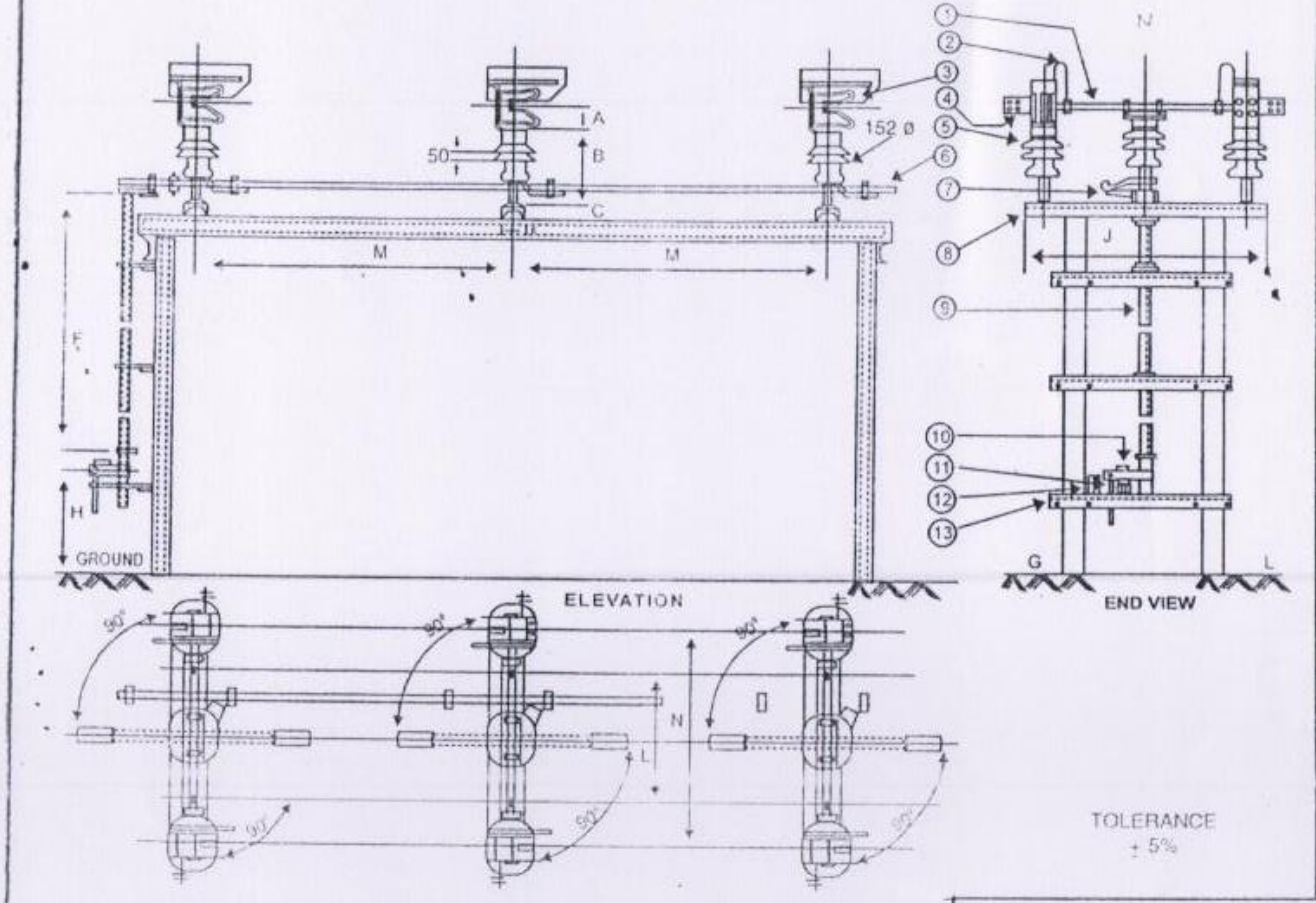
REVISIONS			
D	C	B	A

CUSTOMER :

TITLE : MOVING & FIXED CONTACT
11kv 800 A DOUBLE BREAK BANGING TYPE

SCALE : N.T.S.	
DATE	
DRAWN	
CHECKED	
APPROVED	

GENERAL ASSY DRAWING OF 11 KV. 800 A. AB ISOLATOR



REFERENCE

1. MOVING CONTACT : 38 ODX32 MM I.D CU. PIPE
2. ARCING HORNS ø 10. G.I. ROUND
3. FIXED CONTACT : 2 NOS X 610 X 25 X 4 CU
4. JUMPER PAD : 75 X 10 AL X 180
5. INSULATORS : JSI / VCI / HTI MAKE
6. PHASE COUPLER PIPE : 25 ø G.I.
7. BEARING HOLDER WITH BEARING
8. BASE CHANNEL : G.I. 100 X 50
9. DOWN PIPE : G.I. PIPE 32 ø CLASS 'B' L-6.0 mts
10. LOCKING ARRANGEMENT :
11. OPERATING HANDLE : ø 32 MM G.I. PIPE
12. BOTTOM OPERATING MECHANISM :
13. GUIDES. 3 NOS. 50X 50X6 MS. ANGLE

NOTES :

1. DRAWING NOT TO SCALE
2. DIMENSIONS ARE IN MM
3. ALL FERROUS PARTS HOT DIP GALVANISED.
4. MAIN ROTATING POST BEARING IS THRUST BALL BEARING.
5. ALL CONTACT PARTS SILVER PLATED
6. ALL BEARINGS ARE PROVIDED WITH GREASE NIPPLES
7. TEST DONE ON SINGLE POLE
8. CLAMPS ARE TO BE WELDED FINAL SETTING
9. STANDARD BOLTS & NUTS SHALL BE USED. ALL THE BOLTS & NUTS SHALL BE ELECTRO GALVANISED.

TOLERANCE
± 5%

CUSTOMER :

11kv 800 A, TRIPLE POLE, D.B., B.T. AB ISOLATOR WITHOUT E.S.

SCALE : N.T.S.	
DATE	
DRAWN	
CHECKED	
APPROVED	

TYPE	CURRENT RATING	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
DOUBLE BREAK [illegible]	800 A	115	254	50			5800				905		400	915	762	

ANNEXURE

(A) SCHEDULE OF GUARANTEED PERFORMANCE AND OTHER PARTICULARS FOR CAPACITORS

Item No.	Description	
1.	Type make of capacitors	:
2.	Rated voltage of each capacitor elements	:
3.	Rated frequency	:
4.	KVAR (at rated voltage and frequency of each element)	:
5.	No. of phases and No.of terminals in each element	:
6.	Type of bushing terminals	:
7.	No.of capacitor elements in each phase/unit rating	:
8.	Total number of capacitor elements for each bank/bank rating	:
9.	Connection of capacitor elements	:
10.	Maximum permissible over voltage and duration corresponding to the same	:
11.	Maximum permissible operative over voltage (continuous)	:
12.	Temperature rise under max.voltage	:
13.	Limiting ambient temperature	:
14.	Watt Loss (maximum) per phase	:
15.	Voltage withstand tests (capacitor units)	:
	a) Terminal to terminal 50 c/s 1 min. dry	
	b) Terminal to case 50 c/s 1 min. dry	
16.	Impulse withstand voltage	:
17.	Individual fuse rating and characteristics	:
18.	Physical and electrical properties of capacitor	:
	a) Nominal thickness of polypropylene	:
	b) Tensile strength of polypropylene	:
	i) Lengthwise	:
	ii) Crosswise	:
	c) Percentage elongation	:
	i) Lengthwise	:
	ii) Crosswise	

d) Shrinkage :

i) Lengthwise :

ii) Crosswise

e) Dielectric breakdown voltage :

19. Capacitor oil used in the container tank

20. Protection schemes for capacitor bank

a) Under voltage :

b) Over voltage :

c) Neutral displacement stage I, Stage II

d) Off delay Timer

e) O/C & E/F

f) leading PF Tripping

g) Neutral unbalance :

h) Whether timer introduced for switching operation :

i) Earth fault :

j) Schematic drawing enclosed :

k) Whether protection for group control of capacitor bank :
Envisaged and if so, the type of switching offered

l) Whether control for p.f. and voltage envisaged in the scheme :

m) No. of modules used in control panel :

n) List out the annunciation arrangement :

o) Breaker switching time interval :

p) Minimum and maximum voltage and pf setting

q) Whether relay for controlling voltage and pf available :

r) Whether master tripping relay provided if so number of No and NC available:

21. Weight of control panel

22. Dimensions of control panel

23. Maximum difference of capacitance between capacitor units in a bank :

24. Capacitor bank output

a) Rated output of capacitor unit and voltage :

b) Capacitance of series group :

c) Bank capacitance :

d) Elements in parallel per series group :

e) Output of capacitor if one element fails, 2 elements fails etc. :

25. Whether the neutral capacitor bank floated :
26. Voltage and current rating of capacitor bushing :
27. Percentage of over voltage due to failure of each bank for different ratings :
28. Maximum ambient temperature capacitor can withstand :
29. Whether fuse current Vs time curve indicated in the tender :
and if so, how it is coordinated with capacitor bank protection

(B) GUARANTEED TECHNICAL PARTICULARS FOR BREAKERS

1. RATED VALUES AND CHARACTERISTICS :

a) No. of poles

b) Class

c) Rated voltage

d) Rated insulation level

i) Impulse withstand voltage

ii) One minute power frequency with stand voltage

iii) One minute power frequency with stand voltage on auxiliary wiring

e) Rated frequency

f) Rated normal current

g) Rated cable charging current

h) Rated (single) capacitor breaking current

i) Rated small inductive breaking current and breaking capacity in MVA

j) Rated transient recovery voltage

k) Rated short circuit making current

l) Rated operating sequence

m) Rated duration of short circuit

n) Opening time and break time

o) Closing time

II. Whether type test certificates or report enclosed with the tender.

III. Weight of complete circuit breaker.

2) i) Pressure maintained in the vaccum chamber

ii) Gap between the contacts in vaccum

iii) Area of contacts

iv) The voltage to which the circuit breaker shall be capable of withstanding indefinitely across open contacts.

3) Minimum clearance in air

i) Between poles

ii) Between live parts to earth

iii) OPERATING MECHANISM OF CIRCUIT BREAKER AND ASSOCIATED EQUIPMENT

1) Type of closing mechanism

2) Whether circuit breaker is fixed trip or trip free

3) No. and type of auxiliary contacts (No. of spare normally open contacts and No. of spares normally closed contacts are to be indicated)

4. Power requirement

i) Closing coil

ii) Opening coil

iii) Heaters at different locations (240V – 50 Hz AC)

5. Electrical service life

i) Rated current (times)

ii) Rated interruption current (times)

6. Periodicity of maintenance for the following

i) For maintaining vaccum in interrupting chamber

ii) For changing contacts

iii) Other maintenance schedules if any

C) SCHEDULE OF GUARANTEED PARTICULARS AND OTHER PARTICULARS OF 11 KV NEUTRAL CT

S.No.	Description	
1.	Type and Make	:
2.	Rated terminal voltage	:
3.	Phase	:
4.	Secondary voltage	:
5.	Secondary burden	:
6.	Discharge capacity	:
7.	Quantity required	:
8.	Weight	:
9.	Dimensions	:
10.	Any other details the tenderer may wish to give	:
11.	Rated burden N.C.T.	:

D) SCHEDULE OF GUARANTEED PERFORMANCE AND OTHER PARTICULARS OF OUTDOOR CONTROL AND RELAY PANEL

S.No.	Description	
1.	Type and Make	:
2.	Size and scales for ammeter, voltmeter and other indicating meters, p.f. meter	:
3.	Control switch details	:
4.	Ammeter and voltmeter change over switch details	:
5.	Dimensions	:
6.	Weight	:
7.	Number of panels	:
8.	Any other details the tenderer may wish to give	
9.	Details of relays	
	a) Over current	:
	b) Earthfault	:
	c) Over Voltage and power factor control Relay	:
	d) Undervoltage	:
	e) Neutral unbalance current	:
	f) Under voltage, Over voltage	:
	g) Auxiliary relays	:
	h) Timers	:
	i) Range of control	:
	i) p.f.	:
	ii) Voltage	:
10.	Reference voltage in the control circuit	:
11.	Whether instantaneous relay provided for over voltage / under voltage	:
12.	Timer circuit included	:

E) SCHEDULE OF GUARANTEED PERFORMANCE OF OTHER PARTICULARS OF OVERCURRENT RELAYS, OVERVOLTAGE RELAYS, UNDERVOLTAGE RELAYS AND UNBALANCE CURRENT RELAYS SUITABLE FOR 11 KV CAPACITORS

S.No.	Description	
1.	Make and type	:
2.	Case and cover whether supplied in single pole or three pole	:
3.	Constructional characteristics of relays	:
4.	Time/Current or voltage characteristics	
5.	a) Rated current or voltage	:
	b) Range of current or voltage settings	:
	ii) O/L	
	iii) U/V	
	iv) O/V	
	v) Voltage/Current unbalance relays	:
6.	Range of :	
	a) Time multiplier setting	:
	b) Definite minimum time of operation for heavy fault	:
	c) Time delay relay	:
7.	Voltampere consumption at different current or voltage settings	:
8.	Thermal rating of relays coils	:
9.	Contact ratings	:
	Making Amp	:
	Breaking Amp	:
10.	Whether provided with instantaneous tripping feature under heavy faults	:
11.	Rated breaking capacity of tripping circuits	:
12.	Operational indicators whether mechanically or electrically operated	:
13.	Mounting whether flush or projected	:
14.	Terminals	:
15.	Insulation	:
16.	Facilities provided for testing	:

17. Dimensions :

18. Weight :

19. Quantity required :

    a) O/L (Overload) :

    b) U/V (Under Voltage) :

    c) O/V (Over Voltage) :

    d) Current unbalance (Neutral displacement current) :

F) SCHEDULE OF TECHNICAL AND GUARANTEED PARTICULARS FOR LIGHTNING ARRESTORS

Sl. No.	**Description**	Guaranteed particulars
1	Name of the manufacturer	
2	Type: Metal Oxide Class-III	
3	Model	
4	Number of Units:	
5	Rated Voltage : (RMS)	
6	Max. Continuous operating voltage	
7	Nominal discharge current	
8	Power frequency sparkover voltage	
9	Impulse sparkover voltage 1/50 micro sec. Wave	
10	Maximum front of wave impulse sparkover voltage	
11	Virtual steepness for front of wave for above	
12	Maximum residual voltage for discharge current 8/20 micro sec Wave:	
	1. 1500 A	
	2. 2500 A	
	3. 5000 A	
	4. 10000 A	
13	High current 4/10 Micro second wave test value.	
14	Long duration current tests.	
	1. Current Peak.	
	2. Virtual duration.	
15	Pressure relief device	
16	Weight of complete unit (Kgs.)	
17	Height of complete unit from base of the line side.	
18	Minimum recommended spacing between arresters center to center.	
19	Clearance required from grounded equipment at various heights of arresters unit.	
20	Earthing arrangement provided for earthing side of arresters (s).	
21	Mounting flange dimensional details.	
22	Equipment to be protected (BIL KV Peak)	
23	System neutral condition.	
24	Indoor or Outdoor installation.	

G) GUARANTEED TECHNICAL PARTICULARS FOR ISOLATORS

Sl.No.	Details	Guaranteed particulars
1.	Isolators	
	a) Name of manufacturer	
	b) Whether single break or double break	
	c) No. of poles	
	d) Voltage rating	
	e) Frequency	
	f) Current rating in Amps	
	i) Normal	
	ii) Maximum with duration	
	g) Temperature rise of the following at full rated current in cover ambient temperature	
	i) Copper contact with coating	
	ii) Terminals of switches, intended to be boiled to the external conductors	
	iii) Metallic parts acting on springs	
	h) Whether contacts are silver coated or tin coated along with thickness of coating in mm.	
	i) Voltage drop across terminals of poles	
	j) Short time current and duration	
	k) Material of fixed contact	
	l) Material of moving blade	
	m) Material of terminal connector	
	n) Type, diameter and length of operating handle	
	o) Material of arcing horns	
	p) Size and length of base mounting channel	
	q) Whether the airbrake switch is complete with all accessories	
	r) Whether dimensions drawing, is enclosed with the tender	
	s) Minimum clearance between phases (the center distance between the insulators of adjacent phases in the assembled position of switch)	
	t) Center to center distance between insulators of consecutive poles of the same phase in the assembled position of switch (in mm)	
	u) Whether mechanical interlock has been provided for arcing switches	
	v) Type of bearings used in	
	i) Rotating insulator stack ii) Operating shaft	
	w) Impulses withstand voltage with 1/50 ms wave positive and negative polarity	
	i) Across isolating distance	
	ii) To earth and between poles	
	x) One minute power frequency withstand voltage across isolating distance to earth and between poles	

H) GUARANTEED TECHNICAL PARTICULARS
H.T. ELECTRONIC TRIVECTOR METERS

I.	1. Maker's Name and Country	
	2. Type of Meter	
	3. Accuracy Class	
	4. Parameters Measured	
	5. P.F. Range	
	6. Test terminal block.	
	7. Details of adjustments and compensations provided.	
	8. Sensitivity	
	9. Over-load Capacity	
	10. Minimum Starting Current	
	11. Principle of operation	
	12. Particulars of readout	
	13. Particulars of Battery Back up	
	14. Integration Period. Secondary current	
	15. Suitability for three phase 3 wire three phase 4wire system	
	16. No. of digits	
	17. Storage of load Survey Data	
	18. Hand held Data Collector	
	19. Remote Readout facility.	
	20. RS- 485 Compatibility ***with DLMS protocol***	

I) SCHEDULE OF GUARANTEED PERFORMANCE AND OTHER PARTICULARS OF 11 KV SERIES REACTORS FOR CAPACITORS

Sl.No.	Description	
1.	Type and make	
2.	Insulation level	
3.	Rated current and voltage	
4.	Rated capacity/inductance	
5.	Rated Frequency	
6.	Compensation percent of series reactors	
7.	Number of Phases	
8.	Dimensions (Overall) x L X B X H (mm) (Approx.)	
9.	Total weight/weight of coil and assembly unit	
10.	Rated short time current and specified duration	
11.	Reactance at rated current	
12.	Type of cooling	
13.	Load losses	
14.	Winding resistance (cold/hot)	
15.	Voltage and current rating of reactor bushing	
16.	Rated KVAR	
17.	Terminal arrangement	
18.	Maximum system voltage for which reactor is designed	
19.	Choke voltage/Phase at rated current	
20.	Conforming to ISS	
21.	Whether reactor designed for	
	a) Harmonics	
	b) Inrush current	
22.	Type of shielding adopted in the reactor	

J) SCHEDULE OF GUARANTEED PERFORMANCE AND OTHER PARTICULARS OF 11 KV CURRENT TRANSFORMERS

Sl.No.	Description	
1.	Type	
2.	Name of Manufacturer	
3.	Rated Voltage/Highest Voltage	
4.	Rated Primary Current	
5.	**Secondary core details**	
	a) No. of Cores	
	b) Rated Secondary current	
	c) Rated burden	
	d) Class of Accuracy	
	e) Accuracy limit Factor	
6.	Short time thermal current & its duration	
7.	Rated current dynamic	
8.	i) Rated continuous thermal current	
	ii) Temperature rise over ambient	
9.	Impulse withstand test voltage KV (Peak)	
10.	One minute power frequency dry and wet withstand voltage on primary	
11.	One minute Power frequency withstand voltage on secondary	
12.	Total creepage distance of the bushing	
13.	Quantity of Oil	
14.	Total weight	
15.	Overall Dimensions	

Name of the Firm :

Signature :

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION – VI
QUALIFICATION REQUIREMENTS – **STN- 1538/2025**

The bidder should be an **Original Equipment Manufacturer/Authorization dealer of 11 KV capacitor Banks having experience in design, manufacture, supply & erection or the Authorized Dealers of OEM** having experience in supply and erection of 11KV and higher voltage rating of fixed type Capacitor Banks to power utilities or Government organizations. The bidder should have supplied and erected at least 40% of the quoted material of fixed type capacitor banks in MVAR Capacity indicated in the "Schedule of Requirement" in one continuous period of 12 months and its financial turnover during any one year of the last five years should have been equal or more than 100% value of the material (supply & erection) now quoted.

NOTE: The authorized dealer who obtains the authorization from an OEM should ensure that the OEM has the experience in design, testing and manufacture of the equipment. The certificates to that extent should be enclosed along with the bid..

At least 20% of similar material **i.e., 11KV fixed type Capacitor Banks in MVAR Capacity** offered against this Specification (item-wise) should be in successful operation since 2 years as on the date of opening of the Bid. **The performance is considered on producing certificate from purchaser (issued by head of purchase wing) of power utilities or Government organizations only.** Fresh bidders can be given order upto 15% of the total quantity as trail order if equipment justified.

Capacitor Banks associated equipments should be reputed makes having Type Tests as per Capacitor Banks associated equipments should be reputed makes having Type Tests as per IS/IEC in full from NABL and for VCB performance from power utilities or Government organizations for satisfactory operation of two years to be required.

The following makes of VCBs and CTs/NCTs are accepted

VCB : CGL, Siemens, ABB, BHEL, Toshiba, Schneider, Stelmec, Shreem
CTs/NCTs : Vidyuth, Vishal, Concord, G.S Electricals, Straton, M/s. Ravindra Electricals, Vamet Industries.

Any company/vendor/supplier/contractor which is blacklisted/debarred by any other power utility is not eligible to participate in the tenders.

The bidders shall have to furnish an undertaking in the prescribed format-8 regarding any relation to the promoters of blacklist/debarred companies by any utility. Any false information furnished in the declaration while rendering bid, such contract is liable for termination as well as recovery of damages.

2. The bidder should furnish the information on all past supplies and satisfactory performance in proforma under Form 6.

3. All bids submitted will also include the following information:
   i. Copies of original documents defining the constitution or legal status, place of registration and principle place of business of the company or firm or partnership, etc.,

   ii. The bidder should furnish a brief write-up, backed with adequate data, explaining his available capacity and experience (both technical and commercial) for the manufacture and supply of the required equipment within the specified time of completion after meeting all their current commitments.

iii. The bidder should clearly confirm that all the facilities exist in his factory for inspection and testing and these will be made available to the purchaser or his representative for inspection.

iv. Reports on financial standing of the Bidder such as profit and loss statement, balance sheets and auditor's report for the past three years, bankers certificates etc.

4. The type tests reports conducted on the material of same design as offered against tender as per the latest relevant IS in recognized laboratory (NABL) which are more than 10 years will also be considered for the purpose of evaluation.

However, the bidder should submit an Under taking letter duly stating that type test reports will be submitted on receipt of Purchase order i.e., before commencement of the supplies. And the date of Type tests shall not be later than **5 years.**

The bids received without undertaking letter/Type test reports will be treated as **Non-Responsive**.

5. Even though the bidder meets the above qualifying criteria, they are subject to be disqualified if they have…

a. made misleading or false representations in the forms statements and attachments submitted in proof of qualification requirements and / or

b. record of poor performance such as not properly completing the contract, inordinate delays in supply completion, litigation history or financial failure etc.

6. Not withstanding anything stated above the purchaser reserves the right to assess bidder's capability and capacity to perform the contract should circumstances warrant such an assessment in the overall interest of the purchaser.

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-VII
SAMPLE FORMS

1. BID FORM

Date. .....

TO: (Name and Address of Purchaser)
Gentlemen and/or Ladies:

Having examined the Bidding documents, the receipt of which is hereby duly acknowledged, we, the undersigned, offer to supply and deliver. ..... (Description of Materials / equipment) in conformity with the said bidding documents in accordance with the schedule of prices quoted online herewith and made part of this Bid.

We undertake, if our Bid is accepted, to deliver the Materials / equipment in accordance with the delivery schedule specified in the Schedule of Requirements.

If our Bid is accepted, we will obtain the guarantee of a bank in a sum equivalent to. 10% of the Contract Price for the due performance of the Contract, in the form prescribed by the Purchaser.

We agree to abide by this Bid upto ……. (for the Bid Validity Period) specified in Clause and it will remain binding upon us and may be accepted at any time before the expiration of that period.

Until a formal contract is prepared and executed, this Bid, together with your written acceptance thereof and your notification of award, will constitute a binding Contract between us.

We understand that you are not bound to accept the lowest or any bid you may receive.

We certify / confirm that we comply with the eligibility requirements as per clause of the bidding documents.

Dated this. .....day of. 200

_____

_____

[Signature] *[in the capacity of]*

Duly authorized to sign Bid for and on behalf of _____

2. (a) BID SECURITY FORM

Whereas. ..... (hereinafter called "the Bidder") has submitted its Bid dated (date of submission of bid) for the supply of. .....(name and /or description of the Materials / equipment) (hereinafter called "the Bid").

KNOW ALL PEOPLE by these presents that WE. .....(name of bank) having our registered office at. .....(address of bank)(hereinafter called "the Bank"), are bound unto. .....(name of Purchaser) (hereinafter called "the Purchaser") in the sum of _____for which payment well and truly to be made to the said Purchaser, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank this ____day of _____ 2026.

THE CONDITIONS of this obligation are:

1. If the Bidder

   a) withdraws its Bid during the period of bid validity specified by the Bidder on the Bid Form; or

   a) does not accept the correction of errors in accordance with the Bid Specification, or

2. If the Bidder, having been notified of the acceptance of its bid by the Purchaser during the period of bid validity;

   (a) fails or refuses to furnish the performance security, in accordance with the Bid Specification.

   (b) fails or refuses to execute the Contract Form if required; or

   We undertake to pay the Purchaser up to the above amount upon receipt of its first written demand, without the Purchaser having to substantiate its demand, provided that in its demand the Purchaser will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions, specifying the occurred condition or conditions.

This guarantee will remain in force up to and including forty five (45) days after ……. (Date of tender opening) the period of the bid validity, and any demand in respect thereof should reach the Bank not later than the above date.

. .....
(Signature of the Bank)

NOTE: This will be executed on a Rs.100/- non-judicial stamp paper issued by a scheduled Bank.

2. (b) PERFORMANCE SECURITY FORM

To:_____(Name of Purchaser)

WHEREAS……..(Name of Supplier)
(hereinafter called "the Supplier") has undertaken, in pursuance of Contract No.....dated.....2026 to supply. .....(Description of Materials / equipment and Services)
(hereinafter called "the Contract").

AND WHEREAS it has been stipulated by you in the said Contract that the Supplier will furnish you with a Bank Guarantee by a recognized Bank for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract.

AND WHEREAS we have agreed to give the Supplier a Guarantee:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of. ..... (Amount of the Guarantee in Words and Figures) and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract and without cavil or argument, any sum or sums within the limit of..... (Amount of Guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This guarantee is valid until the. ... day of. ..…... 2026.

Signature and Seal of Guarantors
.....
Date. .....2026.
.....
.....
Address:.....….....
.....
.....

NOTE: This will be executed on a Rs.100/- non-judicial stamp paper by a scheduled Bank.

3. CONTRACT FORM

THIS AGREEMENT made the. ..... day of. ..... 2026 Between. .....(Name of Purchaser) of the one part and. .....(Name of Supplier) of the other part:

WHEREAS the Purchaser invited bids for certain Materials / equipment and ancillary services viz., ...(Brief description of Materials / equipment and Services) and has accepted a bid by the Supplier for the supply of those Materials / equipment and services in the sum of. .....(Contract Price in Words and Figures)(hereinafter called "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions will have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.

2. The following documents will be deemed to form and be read and construed as part of this Agreement, viz.:

   (a) the Bid Form and the Price Schedule submitted by the Bidder;

   (b) the Schedule of Requirements;

   (c) the Technical Specifications;

   (d) the General Conditions of Contract;

   (e) the Purchaser's Notification of Award.

3. In consideration of the payments to be made by the Purchaser to the Supplier as hereinafter mentioned, the Supplier hereby covenants with the Purchaser to provide the Materials / equipment and services and to remedy defects therein in conformity in all respects with the provisions of the Contract.

4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Materials / equipment and services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

Brief particulars of the Materials / equipment and services which will be supplied/ provided by the Supplier are as under:

Sl. No.	Brief Description of Materials / Equipment & services	Quantity to be supplied	Unit Price Rs.	Total Price Rs.	Delivery Terms

TOTAL VALUE: (Rupees _____ only)

DELIVERY SCHEDULE:

IN WITNESS whereof the parties hereto have caused this Agreement to be executed on the day and year first above written.

Signed, Sealed and Delivered by the

said. .....(for the Purchaser)

in the presence of. .....

Signed, Sealed and Delivered by the

said. .....(for the Supplier)

in the presence of. .....

NOTE: To be executed on a Rs.100/- Non-judicial stamp paper.

4. PROFORMA FOR PERFORMANCE STATEMENT

Bid No._____ Date of Opening_____

Time _____ Hours

Name of the Firm_____

Order placed by (full address of purchaser)	Order No. and Date	Description and quantity of ordered equipment	Date of Completion of Delivery	
			As per Contract	Actual

Remarks indicating reasons for late delivery, if any	Has the equipment been satisfactorily functioning? (Attach a Certificate from the Purchaser)

Signature of the Bidder _____

_____

_____

5. MANUFACTURERS' AUTHORISATION FORM

No._____dated

To

Dear Sir,

SPECIFICATION No.

We _____ who are established and reputable manufacturers of _____(name & descriptions of Materials / equipment offered) having factories at (address of factory) do hereby authorize M/s._____ (Name and address of Agent) to submit a bid, and sign the contract with you for the above Materials / equipment manufactured by us against the above Specification No..

No Company or firm or individual other than M/s._____are authorized to bid, and conclude the contract in regard to this business against this specific Specification No._____.

We hereby extend our full guarantee and warranty as per Clause 53 of the General Conditions Contract for the Materials / equipment and services offered by the above firm against this Specification No..

Yours faithfully,

(Name)
(Name of manufacturers)

Note: This letter of authority should be on the letterhead of the manufacturer and should be signed by a person competent and having the power of attorney to bind the manufacturer. It should be included by the Bidder in its bid.

6. DETAILS TO BE FURNISHED BY THE MANUFACTURER (FORMAT-A)

1. Specification No.	:	
2. Name of the Material	:	
3. Quantity to be procured	:	
4. Last date and time for submission of Bid	:	
5. Date and time for opening of Bid	:	
6. State whether Bid guarantee is enclosed	:	
7. State whether the quotation in two parts has been submitted.	:	
8. State whether 20% minimum quantity is quoted	:	
9. Whether willing to furnish performance B.G. **@ 10%** if order is placed	:	
10. Whether month wise delivery schedule indicated	:	
11. Prices whether Firm	:	
12. Whether any other tax / duty payable. If so give details and the same is included / not included.	:	
13. State whether TGSPDCL terms of payment are accepted	:	
14. Quantity offered for supply	:	
15. State whether 90 days validity offered	:	
16. Whether sample is enclosed (if specified)	:	
17. Whether the material / equipment offered conforms to the relevant TGSPDCL Specification	:	
18. Whether you have executed orders of the TGSPDCL previously for these items. (Please give details)	:	
19. Similar details in respect of supplies made to other utilities	:	
20. Whether Bid guarantee exemption letter enclosed, if exempted.	:	
21. Whether sales tax clearance certificate enclosed	:	
22. Whether Income-tax clearance certificate enclosed.	:	
23. Whether Warranty clause accepted	:	
24. Whether Penalty clause accepted	:	
25. Whether delivery schedule accepted	:	

7. SCHEDULE OF DEVIATION

(i) TECHNICAL

Sl. No.	Requirements / Equipment	Specification Clause No.	Deviations	Remarks

It is hereby conformed that except for deviations mentioned above, the offer conforms to all the other features specified in Technical Specification Section ____ of this Bid Document

Place :

Date :

Signature of the Bidder :

Name :

Business address :

8. SCHEDULE OF DEVIATION

(ii) COMMERCIAL

Sl. No.	Requirements / Equipment	Specification Clause No.	Deviations	Remarks

It is hereby conformed that except for deviations mentioned above, the offer conforms to all the other features specified in Commercial Specification Section ____ of this Bid Document

Place :

Date :

Signature of the Bidder :

Name :

Business address:

DECLARATION FORM

Declaration to be given by the Company in regard to relation to promoters of Blacklisted / debarred companies by any power utilities.

I declare that, myself or any of the representatives of my company / firm do not have any relatives with promoters of blacklisted / debarred companies by any utilities.

It is certified that the information furnished above is true to the best of my knowledge and belief. It is hereby undertaken that in the event of the above information found to be false or incorrect at a later date, the TGSPDCL is entitled to terminate the contract/agreement entered into besides recovering damages as may be found necessary, with due notice.

Signature of authorized representative

ANNEXURE – I

Abstract for requirement of 11KV 2 MVAR Capacitor Banks in TGSPDCL

Sl. No.	Name of the Circle	Qty (No's)
		2 MVAR
1.	Gadwal	32
2.	Mahaboobnagar	24
3.	Medak	21
4.	Nagar Kurnool	32
5.	Nalgonda	50
6.	Narayanpet	15
7.	Siddipet	27
8.	Suryapet	35
9.	Vikarabad	11
10.	Wanaparthy	29
11.	Yadadri	24
		300

Note: The installation location of capacitor banks may vary as per the requirement of TGSPDCL **and** the same may intimated at the time of purchase order .

SD/-
CHIEF ENGINEER (P&MM)
TGSPDCL