



**SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LTD.
TGSPDCL (erstwhile TSSPDCL)**

TENDER SPECIFICATION

CEPMM-70/24-25

FOR

33KV POLYMER INSULATORS (B&S)

TABLE OF CONTENTS

SECTION	DESCRIPTION	PAGE NO.
I	Notice inviting bids	4-6
II	Salient Features of the Bid	7
III	General Terms and Conditions Of Contract	8-34
IV	Schedule of Requirements	35
V	Technical Specification	36-51
VI	Qualification Requirement	52-53
VII	Sample Forms	
	1) Bid Form	54
	2) Bid Security Form	55
	3) Performance Security Form	56
	4) Contract Form	57-58
	5) Performance Statement	59
	6) Details to be furnished by the Manufacturer	60
	7) Schedule of deviations (Technical & Commercial)	61
	8) Declaration to be given by the company in regard to relation to promoters of blacklisted/debarred companies by any power utilities.	62

NOTE:

1. Payment terms, Delivery period, Performance Bank Guarantee, Taxes and Duties” 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.tssouthernpower.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 revealing the prices in the Online PQ stage/offline Technical bid or any other mode other than in online commercial bid will be liable for rejected.
8. In e-procurement commercial stage, if F&I charges are applicable then the firm must mention the 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. Bid security Exemption is considered Only for Government firms.
10. Applicable tax collected at source (TCS) is as per Government of India.

Sd/-
CHIEF ENGINEER (P&MM)
TGSPDCL



SOUTHERN POWER DISTRIBUTION COMPANY OF TELANGANA LTD.

e-Procurement Tender Notice (Paper Notification)

TGSPDCL intends to float tenders for procurement of 1) 11KV Polymer Pin Insulators with GI Pins 2) 11KV Polymer Insulators (C&T) 3) 33KV Polymer Pin Insulators with GI Pins 4) 33KV Polymer Insulators (B&S) 5) Thermal Spot Billing Paper Rolls 6) 11KV 400A (Conv.) DBAB Switches with Insulators, (7) 11KV 60/5A CTPT Sets of 0.2S class accuracy one-procurement platform.

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

Phone: 040-23431360, 1033, 1035, 1026

Sd/-
CHIEF ENGINEER (P&MM)

ONLINE VERSION
Tender Notice No: CEPMM-70/24-25.

Notice Inviting Tender Details		
S. No	Description	
1	Department Name	TGSPDCL, Hyderabad.
2	Office	Purchases & Material Management Wing, Corporate Office, TGSPDCL, Hyderabad.
3	Tender Number	CEPMM-70/24-25
4	Tender Subject	33KV Polymer Insulators (B&S)
5	Delivery Schedule	The delivery of materials shall commence within 30 days from the date of receipt of the purchase order and shall complete in four months or as per TGSPDCL delivery schedule
6	Tender Type	Open
7	Tender Category	NA
8	Bid Security (INR)	(i) 2.36% of the Ex-works quoted value (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) Online/Challan in Web portal (or) BG from Nationalized/Scheduled bank as per format-II. In case of BG, should be in favour of CGM/P&MM/CO/ TGSPDCL/HYD whose validity should not be less than 135 days from the date of opening of tender.
10	Processing Fee (INR)	NIL
11	Transaction Fee	<u>Transaction fee:</u> 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 TSTS. The amount payable to TSTS is non refundable. <u>Corpus Fund:</u> Successful bidder has to pay an amount of 0.04% on quoted value through demand draft in favour of Managing Director, TSTS, Hyderabad towards corpus fund at the time of concluding agreement.
12	Transaction Fee Payable to	TSTS
13	Date & time of pre-bid meeting with manufacturers	09-12-2024 at 12:00 Hrs.
14	Schedule Sale opening date	30-11-2024 from 15:00 Hrs
15	Schedule Sale closing Date	30-12-2024 Upto 12:00 Hrs.
16	Bid Submission Closing Date & time	30-12-2024 Upto 13:00 Hrs
17	Bid submission	On Line
18	Pre-Qualification& Technical Bid Opening Date (Qualification and Eligibility Stage and Technical Bid Stage)	30-12-2024 at 15:00 Hrs
19	Price Bid Opening Date (Financial Bid Stage)	31-12-2024 at 12:00 Hrs
20	Place of Tender Opening	O/o Chief Engineer/P&MM TGSPDCL, 4 th Floor, Corporate Office, Mint Compound, Hyderabad – 500 004.
21	Officer Inviting Bids/ Contact Person	Chief Engineer/P&MM/TGSPDCL/HYDERABAD
22	Address	O/o. Chief Engineer/P&MM TGSPDCL, 4th Floor, Corporate Office,

		Mint Compound, Hyderabad – 500 004
23	Contact Details: Telephone & E-mail	Ph. No. 040-23431033, 23431360 E-mail : cgmppmm@tgsouthernpower.org
24	Eligibility Criteria	As per Section VI
25	Procedure for Bid Submission	<p>Bids shall be submitted online on www.tender.telangana.gov.in platform</p> <ol style="list-style-type: none"> 1. The participating bidders in the tender should register themselves free of cost on e-procurement platform in the website www.tender.telangana.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: <ol style="list-style-type: none"> a) Bid Security should be furnished <ol style="list-style-type: none"> i) In the form of DD in favour of Pay Officer/ TGSPDCL/Hyderabad (or) Online/Challan in Web portal (or) Alternatively BG from Nationalized/Scheduled bank in favor of Chief Engineer/P&MM/TGSPDCL/Hyd as per format-II enclosed ii) If exempted give details of Bid Security Exemption in case of Govt. firms. b) Quantity offered c) Proof of manufacturer- like license, valid certificates of MSME (from Udyog Aadhar) NSIC Certificates etc. d) Letter of authorization to sign bids. e) “GSTR 3B” For the last Financial year. f) Financial Turnover certified by CA for last 5 years g) Details of previous supplies along with PO copies and delivery challan copies for 40% qualification as per tender document. h) Performance certificates from purchaser of utilities for 20% qualification as per tender. i) Copies of previous supply orders and relevant purchase order copies mentioned in the performance certificates in support of the above. j) Drawings, Guaranteed Technical Particulars of the product, other relevant documents attached to the bid. k) Design test/Type test certificates l) Duly filled and signed proforma as per Format 6. m) Transaction fee payable to M/s. TSTS. <p>5. The rates should be quoted in online only</p>
		6. After uploading the documents the copies of the uploaded statement, certificates, documents, original Demand Drafts or Bank Guarantees in respect of 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

		<p>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.</p> <p>7. The department will not hold any risk and responsibility regulating non-visibility of the scanned and uploaded documents.</p> <p>8. The Documents that are uploaded online on e-market place will only be considered for Technical Bid Evaluation.</p> <p>9. Important Notice to Contractors, Suppliers and Department users</p> <p>(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.</p>
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

SUPERSCRPTION ON THE TENDER COVER

- Specification No :
 Material :
 Officer to whom the bid will be addressed :
 Superscription on the bid cover and
 the outer envelope :
- a. Specification No. : CEPMM-70/24-25
 - b. Due date and time for online submission : 30-12-2024 upto 13.00 Hrs
 - c. Date and time of online opening : 30-12-2024 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 samples (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 feature 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 materials (delivery Schedule)

SAMPLE FORMS.

- g. Bid Form
- h. Bid Security form
- i. Performance Security form (applicable for successful bidder)
- j. Contract form (applicable for successful bidder)
- k. Manufacturers' Authorization form
- l. Performance Statement
- m. Details to be furnished by the Manufacturer
- n. 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 Condition 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 OF CONTRACT
Table of Clauses

Sl. No.	Description	Page No.
A	Introduction	10
1	Definitions	10
2	Applicability	10
3	(a) Standards	10
3	(b) Interchangeability	11
4	Scope of Work	11
5	Eligible Bidders	11
B	The Bidding Documents	11
6	Contents of Bidding Document	11
7	Clarification of Bidding Documents	11
8	Amendment to Bidding Documents	12
C	Preparation of Bids	12
9	Language of the Bid	12
10	Cost Associated with Bidding	12
11	Documents Constituting the Bid	12
12	Bid Form	12
13	Bid Prices	12-13
14	Taxes & Duties	13
15	Statutory Variations	13
16	Bid Currencies	13
17	Quantity to Quote	14
18	Documents Establishing Bidders Eligibility and Qualifications	14
19	Bid Security	15-16
20	Period of Validity of Bids	16
21	Tax Clearance Certificate	16
22	Service Condition	16
23	Format and Signing of Bids	16-17
D	Submission of Bids	17
24	Sealing and Marking of Bids	17-18
25	Deadline for Submission of Bids	18
26	Late Bids	18
E	Opening and Evaluation of Bids	19
27	Opening of Bids by the Purchaser	19
28	Clarification of Bids	19
29	Preliminary Examination	19
30	Evaluation and Comparison of Bids	20-22
31	Contacting the Purchaser	22
F	Award of Contract	22
32	Post Qualification	22
33	Award Criteria	23
34	Purchaser's Right to Vary Quantities at Time of Award	23
35	Purchaser's Right to accept any Bid & to reject any or all bids	23
36	Notification of Award	23
37	Signing of Contract	23
38	Performance Security	23-24
39	Corrupt or Fraudulent Practices	24
40	Use of Contract Documents and Information	24-25
41	Patent Rights	25
42	Places / Locations	25

Sl. No.	Description	Page No.
43	Delivery	25
44	Inspection and Tests	25-26
45	Name Plate	27
46	Packing	26-27
47	Delivery Documents	27
48	Insurance	27-28
49	Transportation	28
50	Incidental Services	298
51	Spare Parts	28-29
52	Warranty	29-30
53	Payment	30
54	Prices	30
55	Change Orders	31
56	Contract Amendments	31
57	Assignment	31
58	Delays in Supplier's Performance	31
59	Penalty for delay in supplies	31-32
60	Risk Purchase	32
61	Termination for Default	32
62	Termination for Insolvency	32
63	Termination for Convenience	32
64	Force Majeure	33
65	Settlement of Disputes	33-34
66	Jurisdiction	34
67	Notices	34
68	Foreign Exchanges	34

SECTION - III
GENERAL TERMS AND CONDITIONS OF CONTRACT

A. Introduction

1. Definitions

1.1 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

2.1 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 Section V.

5. Eligible Bidders:

The Manufacturers who have registered themselves with department of industries of State/Central Govt. with full manufacturing and testing facilities for supply of the material/equipment listed in Section No. IV, of Bid specification.

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 materials (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

7.1 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 and e-procurement website 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 appropriate Price Schedule (**online**) 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. Tax clearance certificate
 - vi. Schedule of Deviations
 - i. Commercial
 - ii. 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:

- 12.1 The Bidder will complete the Bid form and the appropriate Price Schedule (**online**) 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 EXWORKS and all excise and other duties and sales and other taxes payable on the finished Materials / equipment with individual breakup for Taxes and Duties, packing and forwarding, freight and insurance etc.

14. Taxes and Duties

- 14.1 A bidder will be entirely responsible for quoting the correct taxes and duties, 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 Excise Duty, Sales tax and any other levies payable. Failure to furnish such 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.
- 14.4. Applicable tax collected at source (TCS) is as per Government of India.

15. Statutory Variations

Any variation up or down in statutory levy or new levies introduced after signing of the contract under this specification & within the delivery schedule will be to the account of TGSPDCL. 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 sub-vendor items. Taxes & Duties 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 per item 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 VI. 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 2.36% of the Total Ex-works value of the materials offered against the bid or the amount specified by the Purchaser or part quantity may furnish proportionate bid security. This amount should be paid by way of a crossed demand draft drawn on any Nationalized/scheduled 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. from Nationalized/Scheduled bank 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 price 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/BG** but if the same is not found within, such Bids will be rejected and bidder will run the risk of being banned.

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:

- 21.1 Copies of Income Tax, Sales Tax 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 ^o C
(b)	Maximum ambient air temperature (under sun)	50 ^o C
(c)	Maximum daily average ambient air temperature	35 ^o C
(d)	Maximum yearly average ambient air temperature	30 ^o 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 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.

- 23.2 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 : Bid Security, Technical Bid & Qualification Requirements
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 Prices (**shall be on-line only**)
Bids received with any details pertaining to prices in the offline mode will be liable for rejected.

- (ii) The Part-I of 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-19), 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 inner and outer 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: or BG 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 samples (if specified) has been enclosed/ sent...YES/NO
(i) Whether the bid is quoted in two parts (clause 24.1).... (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 to be furnished by the bidder and Schedule of Prices (On-line only) attached to the specification and enclose the same to the bid without fail.

- 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

- 26.1 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 at bid opening will not be considered further for evaluation, irrespective of the circumstances.

28. Clarification of Bids

- 28.1 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 Taxes and Duties 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.

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 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 other charges as called for.

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

The following criteria may be adopted for taxes and duties for evaluation

- a. It is the responsibility of the bidder to quote all taxes and duties correctly without leaving any column unfilled. Where taxes and duties are not applicable the bidder should enter "NA". If no duty / tax is le-viable 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 ED / ST, 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 term, price schedule, taxes and duties 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 quoted by the Bidder. It is the responsibility of the bidder to quote all Taxes and Duties correctly without leaving any column unfilled. Where not applicable the column may be filled as "NA". If no duty / tax is le-viable 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 taxes and duties 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 term, price schedule, submission of Types test certificates (as per section VI), taxes and duties 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:

- 33.1 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 **by 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

- 35.1 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/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 Nationalized/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 black listed 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 detriment 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

41.1 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:

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

42.2 Un-loading charges of the materials at the destination stores shall be arranged by the consignees at TGSPDCL cost.

43. Delivery:

43.1 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 indicted. 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 Store) 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 61.

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 Regd. 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 material, not of acceptable quality or not conforming to the specification, the materials will be rejected. The material has to be re-offered for inspection. In such a case the 2nd inspection charges are to 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. These random inspections may be entrusted to a third party.
- (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 service tax 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

- 48.1.1 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 **before taking into stock**.

- 48.1.2 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

- 49.1 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

- 50.1 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

- 51.1 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 Purchase 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 18 months 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 in the Contract. 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 material 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 18 months 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.
- 53.2 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.
- 53.3 Form 13 shall be issued subject to material taken into stock in good condition (i.e. 105 entry in SAP module)
- 53.4 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.
- 53.5 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.

- 53.6 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.
- 53.7 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.

54. Prices

- 54.1 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

55.1 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:

- (a) Drawings, designs, or specifications, where Materials / equipment to be furnished under the Contract are to be specifically manufactured for the Purchaser;
- (b) The method of shipment or packing;
- (c) The place of delivery; and/or
- (d) The Services to be provided by the Supplier.

56. Contract Amendments

56.1 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

57.1 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 Materials.

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 measure 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 or all of the Materials / equipment or to perform the Services within the period(s) specified in the Contract, the Purchaser will, without prejudice to its other remedies under the Contract, 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. Once the maximum is reached the Purchaser may consider termination of the contract.

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. Materials/Equipment which are not of acceptable quality or are not conforming to the specification would be deemed to be not delivered For penalty, the number of days would be rounded off to the nearest week and penalty calculated accordingly.

The penalty specified above will be levied and would be adjusted against subsequent pending bills.

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

62.1 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 Contract 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 measure.

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 acts as Presiding Arbitrator. In case of failure of the two Arbitrators appointed by the parties to reach upon a consensus within 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
- (e) also the fees and expenses paid to the Arbitrator appointed by such party or on its behalf will be borne by each party itself.
- (f) 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 the Supplier.

66. Jurisdiction

66.1 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

68.1 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 – CEPMM-70/24-25
SCHEDULE OF MATERIALS

Sl. No.	Description of item	Qty. (Sets)	Free at Destination Stores
1.	33KV Polymer Insulators (B&S) 33KV 70 KN composite polymer insulators suitable to B&S clamps as per IEC Specification No. IEC 61109 and as per relevant IS and minimum creepage distance of 900 mm.	30,000	Any District stores of TGSPDCL jurisdiction

Note:

1. Prices shall be Firm, Free at Destination store clearly indicating Freight and Insurance charges shall only be quoted. Tender giving prices F.O.R. Loading Station will be liable for rejection. The tenderers shall not insist on dispatches in full truckloads.
2. DESIRED DELIVERY:
The delivery of materials shall commence within 30 days from the date of receipt of the purchase order and shall complete in four months or as per TGSPDCL delivery schedule. However if there is urgency of material by TGSPDCL, the delivery schedule mentioned will be reduced as per requirement.
3. The purchaser reserves the right to vary the quantities before and after placing the purchase order.
5. If it is noticed that, the bidders form cartel, their bids will not be considered and the bidders are liable to be blacklisted.

Sd/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-V
TECHNICAL SPECIFICATION NO. CEPMM-70/24-25
FOR 33KV Polymer Insulators (B&S)

Scope

This specification covers design, manufacture, testing and supply of composite insulators for use in the **11KV/33KV** overhead transmission lines and substations. The composite insulators shall be of the following type.

Long rod insulators for conductors in tension application at angle/cut points. The insulators shall be of Ball & socket type, as desired by the purchaser.

2.0. APPLICABLE STANDARDS

2.1. Standards

Following Indian/International Standards, which shall mean latest revision, with amendments/changes adopted and published, unless specifically stated otherwise in the specification, shall be referred while accessing conformity of insulators with these specifications.

2.1.1 In the event of supply of insulators conforming to standards other than specified, the Bidder shall confirm in his bid that these standards are equivalent or better to those specified. In case of award, salient features of comparison between the standards proposed by the bidder and those specified in this document will be provided by the Supplier to establish equivalence.

Sl. No.	Indian Standard	Title	International Standard
1		Definition, test methods and acceptance criteria for composite insulators for a.c. overhead lines above 1000V	IEC : 61109
2	IS : 731	Porcelain insulators for overhead power lines with a nominal voltage greater than 1000V	IEC : 60383
3	IS : 2071	Methods of High Voltage Testing	IEC : 60060-1
4	IS : 2486	Specification for insulator fittings for overhead power lines with a nominal voltage greater than 1000V General Requirements and Tests Dimensional Requirements Locking Devices	IEC : 60120 IEC : 60372
5		Thermal Mechanical Performance test and mechanical performance test on string insulator units	IEC : 60575
6	IS : 13134	Guide for the selection of insulators in respect of polluted conditions	IEC : 60815
7		Characteristics of string insulator units of the long rod type	IEC : 60433
8		Hydrophobicity classification guide	STRI guide 1.92/1
9		Radio interference characteristics of overhead power lines and high-voltage equipment	CISPR:18-2 part 2
10	IS : 8263	Methods of RI Test of HV Insulators	IEC : 60437
11		Standard for insulators – Composite-Distribution Dead-end type	ANSI C29 13- 2000
12.	IS : 4759	Hot dip zinc coatings on structural steel & other allied products	ISO : 1459 ISO : 1461
13.	IS : 2629	Recommended Practice for Hot, Dip Galvanisation for iron and steel	ISO-1461 (E)

14.	IS : 6745	Determination of weight of zinc coating on zinc coated iron and steel articles	ISO : 1460
15.	IS : 3203	Methods of testing of local thickness of electroplated coatings	ISO : 2178
16.	IS : 2633	Testing of Uniformity of coating of zinc coated articles	
17		Standard specification for glass fiber strands	ASTMD 578-05
18		Standard test method for compositional analysis by Thermo-gravimetric	ASTM E 1131-03
19	IS : 4699	Specification for refined secondary zinc	

3.0. Technical Description of Composite Insulators :

3.1. Service condition

The polymer insulators to be supplied shall be suitable for satisfactory continuous operation under conditions as specified below:

Maximum ambient temperature	:	55°C
Minimum ambient temperature	:	-5°C
Relative humidity	:	0 to 100%

3.2. Composite Insulators long rod type for tension locations.

3.2.1. The insulators shall be suitable for 3Ph. 50Hz, effectively earthed 33 KV O/H distribution system in a moderately/heavily polluted atmosphere. (with hardware fittings type as specified by DISCOM).

3.2.2. Bidder must be an indigenous manufacturer and supplier of composite insulators of rating 11KV or above or must have developed proven in house technology and manufacturing process for composite insulators of above rating OR posses technical collaboration/association with a manufacturer of composite insulators of rating 11KV or above.

The Bidder shall furnish necessary evidence in support of the above along with the bid, which can be in the form of certification from the utilities concerned, or any other documents to the satisfaction of the owner.

3.2.3. Insulators shall have sheds with good self-cleaning properties. Insulator shed profile, spacing, projection etc., and selection in respect of polluted conditions shall be generally in accordance with the recommendation of IEC-60815/IS : 13134.

3.2.4. The size of composite insulator, minimum creepage distance and mechanical strength along with hardware fittings shall be as follows.

Sl. No	Type of composite insulators	Nominal system voltage KV (rms)	Highest system voltage KV (rms)	Visible discharge test voltage KV (rms)	Wet power frequency withstand voltage KV (rms)	Impulse withstand voltage KV (rms)	Minimum creepage distance (mm)		Min. failing load KN	Pin ball shank diameter mm	Weather shed dia (mm)
							Normal & moderately polluted (20mm/kv)	Heavily polluted (25mm/kv)			
1	Long rod disc insulator	33	36	27	75	170	720	900	70	16	-

Note : 1. ** To be specified by utility

2. Creepage distances have been considered in line with IS-13134 (which specifies 20mm/kv for moderately polluted & 25mm/kv for heavily polluted environment) except for a higher value of 320mm for 11KV insulators in heavily polluted environment as per existing practice with ceramic insulators. In case utilities are specifying lower values of creepage distance for ceramic insulators, the same may be followed for composite insulators also.

3.3. Dimensional Tolerance of Composite Insulators

The tolerances on all dimensions e.g. diameter, length and creepage distance shall be allowed as follows in line with-IEC 61109:

$\pm (0.04d + 1.5)$ mm when $d \leq 300$ mm

$\pm (0.025d+6)$ mm when $d > 300$ mm

Where, d being the dimensions in millimeters for diameter, length or creepage distance as the case may be.

However, no negative tolerance shall be applicable to creepage distance.

3.4. Interchangeability

The composite insulators including the end fitting connection shall be standard design suitable for use with the hardware fittings of any make conforming to relevant IEC/IS standards.

3.5. Corona and RI performance

All surfaces shall be clean, smooth, without cuts, abrasions or projections. No part shall be subjected to excessive localized pressure. The insulator and metal parts shall be so designed and manufactured that it shall avoid local corona formation and not generate any radio interference beyond specified limit under the operating conditions.

3.6. Maintenance

The composite insulators offered shall be suitable for use of hot line maintenance technique so that usual hot line operation can be carried out with ease, speed and safety.

4.0. BASIC FEATURES

4.1 Design and construction

The composite insulator shall have a core, housing & weather shed of insulating material and steel/aluminum hardware components for attaching it to the support/conductor shall be designed to meet the high quality, safety and reliability and are capable of withstanding a wide range of environmental conditions.

4.1.1. Core

It shall be a glass-fiber reinforced epoxy resin rod of high strength (FRP rod). Glass fibers and resin shall be optimized in the FRP rod. Glass fibers shall be boron free electrically corrosion resistant (ECR) glass fiber or boron free E-Glass and shall exhibit both high electrical integrity and high resistance to acid corrosion. The matrix of the FRP rod shall be Hydrolysis resistant. The FRP rod shall be manufactured through Pultrusion process.

i. The FRP rod shall be void free as proven through die penetration test.

ii. The FRP rod must pass electric leakage current test of 175/min. the leakage current shall not exceed 0.05 milli amps.

4.1.2 Housing (Sheath)

The FRP rod shall be covered by a seamless sheath of a silicone elastomeric compound or silicone alloy compound of a thickness of 3mm minimum.

It shall be one-piece housing using injection Molding Principle to cover the core.

The elastomer housing shall be designed to provide the necessary creepage distance and protection against environmental influences, external pollution and humidity. Housing shall conform to the requirement of IEC 61109:2008 with latest amendments.

It shall be directly molded on core and shall have chemical bonding with the FRP rod. The strength of the bond shall be greater than the tearing strength of the polymer. Sheath material in the bulk as well as in the sealing/bonding area shall be free from voids. Manufacturer should furnish a description of its quality assurance programme including fabrication; testing and inspection for any material (i.e rubber). Components (i.e rod) or hardware (i.e. end fittings). The manufacturer has had fabricated by others should also be included.

Manufacturing methods and material composition documentation will be a part of Technical Bid to be submitted along with offer.

4.1.3. Weather sheds

The composite polymer weather sheds made of silicone elastomeric compound or silicon alloy shall be firmly bonded to the sheath, vulcanized to the sheath or molded as part of the sheath and shall be free from imperfections. **The weather sheds should have silicon content of minimum 30% by weight.** The strength of the weather shed to sheath interface shall be greater than the tearing strength of the polymer. The interface, if any, between sheds and sheath (housing) shall be free from voids.

The housing and weather shed materials shall have tensile strength of 10MPa with 300% elongation minimum and tear strength 20N/min

4.1.4. End Fittings

End fittings transmit the mechanical load to the core. They shall be made of spheroidal graphite cast iron, malleable cast iron or forged steel or aluminium alloy. They shall be connected to the rod by means of a controlled compression technique. The gap between fittings and sheath shall be sealed by a flexible silicone elastomeric compound or silicone alloy compound sealant. System of attachment of end fitting to the rod shall provide superior sealing performance between housing, i.e., seamless sheath and metal connection. The sealing must be moisture proof.

The dimensions of end fittings of Insulators shall be in accordance with the standard dimensions stated in IS: 2486/IEC60120. The design of the fittings and the insulators shall be such that there is no local corona formation or discharges likely to cause the interference to either should or vision transmission.

5.0. Workmanship

- 5.1. All the materials shall be of latest design and conform to the best engineering practices adopted in the high voltage field. Bidders shall offer only such insulators as are guaranteed by them to be satisfactory and suitable for continued good service in power transmission lines.

- 5.2. The design, manufacturing process and material control at various stages shall be such as to give maximum working load, highest mobility, best resistance to corrosion, good finish and elimination of sharp edges and corners.
- 5.3. The design of the insulators shall be such that stresses due to expansion and contraction in any part of the insulator shall not lead to deterioration.
- 5.4. The core shall be sound and free of cracks and voids that may adversely affect the insulators.
- 5.5. Weather sheds shall be uniform in quality. They shall be clean, sound and smooth and shall be free from defects and excessive flashing at parting lines.
- 5.6. End fittings shall be free from cracks, flakes, slag, blow holes, seams, shrinks, air holes and rough edges. End fittings should be effectively sealed to prevent moisture ingress; effectiveness of sealing system must be supported by test documents. All surfaces of the metal parts shall be perfectly smooth without projecting points or irregularities, which may cause corona. All load bearing surfaces shall be smooth and uniform so as to distribute the loading stresses uniformly.
- 5.7. All ferrous parts shall be hot dip galvanized to give a minimum average coating of zinc equivalent to 610 gm/sq.m. or 87 μ m thickness and shall be in accordance with the requirement of IS:4579. The zinc used for galvanizing shall be of purity 99.5% as per IS: 4699. The zinc coating shall be uniform, adherent, smooth, reasonably bright continuous and free from imperfections such as flux, ash rust stains, bulky white deposits and blisters. The galvanized metal parts shall be guaranteed to withstand at least four successive dips each lasting for one (1) minute duration under the standard piece test. The galvanizing shall be carried out only after any machining.

6.0. Equipment Marking:

- 6.1. Each insulator unit shall be legibly and indelibly marked with the following details as per IEC-61109:
 - (a) Month & Year of manufacture
 - (b) Min. failing load/guaranteed mechanical strength in kilo Newton followed by the word 'kN' to facilitate easy identification.
 - (c) Manufacturer's name/Trade mark.
 - (d) TSSPDCL (Name of the purchaser)
- 6.2. One 10 mm thick ring or 20mm thick spot of suitable quality of paint shall be marked on the end fitting of each composite long rod of particular strength in case of 11KV insulators for easy identification in case both types of insulators are procured by the utility. The paint shall not have any deteriorating effect on the insulator performance. Following codes shall be used as identification mark :
For 45KN long rod unit: Blue

7.0. Bid Drawings :

- 7.1. The Bidder shall furnish full description and illustration of the material offered.
- 7.2. The bidder shall furnish along with the bid the outline drawing (3 copies) of each insulator unit including a cross sectional view of the long rod insulator unit. The drawing shall include but not be limited to the following information:

- (a) Long rod diameter with manufacturing tolerances
- (b) Minimum Creepage distance with positive tolerance
- (c) Protected creepage distance
- (d) Eccentricity of the long rod unit
 - (i) Axial run out
 - (ii) Radial run out
- (e) Unit mechanical and electrical characteristics
- (f) Size and weight of ball and socket/tongue & clevis
- (g) Weight of composite long rod units
- (h) Material
 - (i) Identification mark
 - (ii) Manufacturer's catalogue number

7.3. After placement of award, the supplier shall submit full dimensioned manufacturing insulator drawing containing all the details in four (4) copies to Owner for approval. After getting approval from Owner and successful completion of all the type tests, the supplier shall submit 10 more copies of the drawing to the Owner for further distribution and field use.

7.4. After placement of award the supplier shall also submit fully dimensioned insulator crate drawing for different type of insulators for approval of the owner.

8.0. Tests and Standards

Insulators offered shall be manufactured with the same configuration & raw materials as used in the insulators for which design & type test reports are performed. The manufacturer shall submit a certificate for the same.

The design and type test reports submitted should have been carried out within five years prior to the date of opening of the Bidder.

8.1 Design tests (As per Clause 9.1 & 10 of IEC: 61109: 2008)

For polymeric insulators it is essential to carry out design test as per clause 9.1 and 10 of IEC 61109:2008 with any latest amendments.

These tests are intended to verify the suitability of the design, materials and method of manufacture (technology). A composite suspension insulator design is defined by the following elements:

- materials of the core, housing and their manufacturing method;
- material of the end fittings, their design and method of attachment (excluding the coupling);
- layer thickness of the housing over the core (including a sheath where used);
- Diameter of the core.

When changes in the design occur, re-qualification shall be carried out in accordance with Table 1.

When a composite suspension insulator is submitted to the design tests, it becomes a parent insulator for a given design and the results shall be considered valid for that design only. This tested parent insulator defines a particular design of insulators which have all the following characteristics:

- a) Same materials for the core and housing and same manufacturing method;
- b) Same material of the fittings, the same connection zone design, and the same housing-to fitting interface geometry;
- c) Same or greater minimum layer thickness of the housing over the core (including a

- sheathwhere used);
- d) Same or smaller stress under mechanical loads;
 - e) Same or greater diameter of the core;
 - f) Equivalent housing profile parameters, see Note (a) in Table 1.

8.2 Manufacturer should submit test reports as per IEC-61109 and as per Annexure-A of section-V along with the bid.

8.2.1 Type Tests:-

The type tests are intended to verify the main characteristics of a composite insulator. The type tests shall be applied to composite insulators, the class of which has passed the design tests.

Following type test shall be conducted on a suitable number of individual insulator units, components, materials or complete strings.

Sr. No.	Description of type test
1.	Dry lightning impulse withstand voltage test
2.	Wet power frequency test
3.	Dry power frequency test
4.	Damage limit proof test and test of the tightness of the interface between end fittings and insulator housing/ Mechanical load time test
5.	Water Diffusion test on FRP rod
6.	Radio interference test
7.	Brittle fracture resistance test
8.	Chemical composition test for silicon content
9.	Recovery of Hydrophobicity test * (3years validity)
10	UV test
11	UV Resistance
12	Salt fog test

➤ The bidder shall also furnish following test reports conducted on the raw materials (i.e., silicon rubber or EVA) for confirming following properties along with their bid.

Sl.No.	Property	Standard
1	Tensile Strength (MPa)	ISO37/ASTM D 638
2	Elongation (%)	ISO37/ASTM D 638
3	Tear Strength (N/mm)	ASTM D624B
4	TERT (4.5kv 360min)	ASTM D2303/IEC507
5	Volume Resistivity (ohm-cm)	ASTM D257/IEC93
6	Dielectric constant	IEC 250/ASTM D150
7	Dielectric Strength (kv/mm)	ASTM D149/IEC93
8	Density	ISO 1183A
9	Hardness (shore A)	ISO868
10	Accelerated aging	ISO188/ASTM G53
11	Flammability test	UL-94 V0/IEC60707
12	Arc Resistance	IEC61621

➤ **The following characteristic shall be met by FRP rods used in manufacture of the insulator:**

1. Tensile strength: 760N/mm² Min
2. Glass content (%): 75% min
3. Tg by DSC-110 Deg C min
4. Dye penetration-No dye rise on 10 sample of 10mm thick>15mins
5. Water diffusion & voltage tests – 100hours-12kv for 1 min, no puncture or flashover on the FRP & current shall not exceed 1mA
6. Hardness>51 Barcol No.
7. ECR glass-Boron/alkali content not more than 0.8%

8.2.2 It shall be the option of the owner to accept the Insulators based on type test reports submitted by the manufacturer. The owner shall be free to repeat the type test & may witness the same.

Note:- The purchaser may like to conduct any other test(s) in addition to above tests at bidder's cost to establish the performance of material as per system requirement.

8.2.3 The bidder shall submit above type test reports as per the standards **IEC-61109 (with latest amendments, if any), relevant standards and Annexure A of section V** on the offered material and should be carried out in the **CPRI/ERDA or any NABL accredited laboratories** along with the bid. **The test certificates shall be with NABL logo.** Additional type tests required if any shall be carried out by the manufacturer, after award of contract for which no additional charges shall be payable. In case, the tests have already been carried out, the manufacturer shall submit reports for the same.

8.3 Acceptance Test shall be carried out during lot inspection.

The test samples after having withstood the routine test shall be subjected to the following acceptance tests:-

a.	Verification of dimensions & sealing	Dimension as per cl.no 3.3 & Sealing as per cl.no 4.1.4
b.	Verification of the end fittings	Clause 12.3 IEC: 61109:2008
c.	Galvanizing test	IS:2633 and IS:6745
d.	Verification of tightness of the interface between end fittings and insulator housing (E2) and of the specified mechanical load, SML (E1)	Clause 12.4 IEC:61109: 2008
e.	Dry Power-Frequency Withstandtest	As per IEC:61109: 2008 & requirement asper GTP

8.4 Routine Tests:-

SN	Description	Standard
1.	Mechanical routine test	As per IEC: 61109:2008 Clause 13.1
2.	Visual Examination	As per IEC: 61109:2008 Clause 13.2
3	Dry Power-Frequency Withstand test	As per IEC:61109: 2008 & requirement asper GTP

Every polymeric insulator shall withstand mechanical routine test at ambient temperature tensile load at RTL corresponding to 0.5 x SML (+10) for at least 10 s.

Note: Sampling & Testing: Sample procedure for testing of insulators shall be IEC61109:2008 for acceptance and routine tests.

8.5 Tests during Manufacture

Following tests shall also be carried out on all components as applicable:-

- a) Chemical analysis of zinc used for galvanizing
- b) Chemical analysis, mechanical, metallographic test and magnetic particle inspection for malleable castings.
- c) Chemical analysis, hardness tests and magnetic particle inspection for forgings.
- d) Peel off test to confirm adhesion of EVA/Silicon/Silicon alloy to the core of the insulator.

8.6 Additional Tests:-

- 8.6.1 The Purchaser reserves the right of getting done any other test(s) of reasonable nature carried out at Purchaser's premises, at site, or in any other place in addition to the aforesaid type, acceptance and routine tests to satisfy himself that the material comply with the specifications. In such case all the expenses will be to Suppliers account.
- 8.6.2 The Owner also reserves the right to conduct all the tests mentioned in this specification at his own expense on the samples drawn from the site at Supplier's premises or at any other test center. In case of evidence of non compliance, it shall be binding on the part of the Supplier to prove the compliance of the items to the technical specifications by repeat tests or correction of deficiencies or replacement of defective items, all without any extra cost to the Owner,
- 8.6.3 *Samples from each lot delivered to stores shall be picked up randomly and shall be sent to any NABL lab for conducting the desired tests as per IEC-61109:2008 with latest amendments. The cost for testing shall be borne by the supplier as mentioned in clause 12. After obtaining satisfactory test report only, the lot will be taken into stock.*

8.7 Sample submitted along with bid shall be considered for drawing approvals and also for supply of lot to DISCOM. No further change in dimension or drawing shall be allowed in lot supply.

8.8 Co-ordination for Testing

- 8.8.1. The supplier shall have to co-ordinate testing of insulators with hardware fittings to be supplied by other supplier and shall have to guarantee overall satisfactory performance of the insulators with the hardware fittings.
- 8.8.2. The bidder shall intimate the owner about carrying out of the type tests along with detailed testing program at least 3 weeks advance of the scheduled date of testing during which the owner will arrange to depute his representative to be present at the time of carrying out the tests.

8.9 Quality assurance plan

8.9.1. The successful bidder shall submit following information to the owner :

8.9.1.1 Test certificates of the raw materials and bought out accessories.

8.9.1.2 Statement giving list of important raw materials, their grades along with names of sub-suppliers for raw materials, list of standards according to which the raw materials are tested. List of tests normally carried out on raw materials in presence of bidder's representative.

8.9.1.3 List of manufacturing facilities available.

- 8.9.1.4 Level of automaton achieved and lists of areas where manual processing exists.
- 8.9.1.5 List of areas in manufacturing process, where stage inspections are normally carried out for quality control and details of such tests and inspections.
- 8.9.1.6 List of testing equipments available with the bidder for final testing of equipment along with valid calibration reports.
- 8.9.1.7 The manufacturer shall submit manufacturing Quality Plan (MQP) for approval & the same shall be followed during manufacture and testing.
- 8.9.1.8 The successful bidder shall submit the routine test certificates of bought out raw materials/accessories and central excise passes for raw material at the time of inspection.
- 8.9.1.9 The owner's representative shall all times be entitled to have access to the works and all places of Manufacture, where insulator, and its component parts shall be manufactured and the representative shall have full facilities for unrestricted inspection of the Supplier's and Sub-supplier's works, raw materials, manufacture of the material and for conducting necessary test as detailed herein.
- 8.9.1.10 The material for final inspection shall be offered by the Supplier only under packed condition. The owner shall select samples at random from the packed lot for carrying out acceptance tests. The lot offered for inspection shall be homogeneous and shall contain insulators manufactured in 3-4 consecutive weeks.
- 8.9.1.11 The supplier shall keep the owner informed in advance of the time of starting and the progress of manufacture of material in their various stages so that arrangements could be made for inspection.
- 8.9.1.12 No material shall be dispatched from its point of manufacture before it has been satisfactorily inspected and tested unless the inspection is waived of by the owner in writing in the later case also the material shall be dispatched only after satisfactory testing specified herein has been completed.
- 8.9.1.13 The acceptance of any quantity of material shall in no way relieve the supplier at his responsibility for meeting all the requirements of the specification and shall not prevent subsequent rejection, if such materials are later found to be defective.

8.10. Guarantee

The supplier of insulators shall guarantee overall satisfactory performance of the insulators.

8.11. Test reports

- 8.11.1 At least three copies of type test reports shall be furnished. One copy shall be returned duly certified by the owner, only after which the commercial production of the concerned material shall start.
- 8.11.2 Copies of acceptance test reports shall be furnished in at least three (3) copies. One copy shall be returned duly certified by the owner, only after which the material shall be dispatched.
- 8.11.3 Record of routine test reports shall be maintained by the supplier at his works for periodic inspection by the owner's representative.

- 8.11.4 Test certificates of test during manufacture shall be maintained by the supplier. These shall be produced for verification as and when desired by the owner.

9.0. Inspection

- 9.1. The Owner's representative shall at all times be entitled to have access to the works and all places of manufacture, where insulator, and its component parts shall be manufactured and the representatives shall have full facilities for unrestricted inspection of the Supplier's and sub-Supplier's works, raw materials, manufacture of the material and for conducting necessary test as detailed herein.
- 9.2. The material for final inspection shall be offered by the supplier only under packed condition. The owner shall select samples at random from the packed lot of carrying out acceptance tests. The lot offered for inspection shall be homogeneous and shall contain insulators manufactured in 3-4 consecutive weeks.
- 9.3. The supplier shall keep the owner informed in advance of the time of starting and the progress of manufacture of material in their various stages so that arrangements could be made for inspection.
- 9.4. No material shall be dispatched from its point of manufacture before it has been satisfactorily inspected and tested unless the inspection is waived off by the owner in writing. In the later case also the material shall be dispatched only after satisfactory testing specified herein has been completed.
- 9.5. The acceptance of any quantity of material shall in no way relieve the Supplier of his responsibility for meeting all the requirements of the specification and shall not prevent subsequent rejection, if such material is later found to be defective.

10. TESTING FACILITIES :

The following additional facilities shall be available at Supplier's works:-

- 10.1 The tenderer must clearly indicate what testing facilities are available in the works of the manufacturer and whether facilities are adequate to carryout all Routine & acceptance Tests. These facilities should be available to Discom's Engineers if deputed or carry out or witness the tests in the manufacturer works. If any test cannot be carried out at the manufacturer's work, the reasons should be clearly stated in the tender.
- 10.2 The insulators shall be tested in accordance with the procedure detailed in IEC 61109:2008 with latest amendments.
- 10.3 Finished insulator shall be checked for dimension verification and surface finish separately. Manufacturers of foreign origin shall, in addition to the above, also have arrangements in India, either at works of their authorized representative/licenses or in the NABL laboratory for conducting sampling test in accordance with IEC 81109/92-93 with latest amendments.

11.0. Packing:

- 11.1. All insulators shall be packed in strong corrugated box of min. 7 ply duly palette or wooden crates. The gross weight of the crates along with the material shall not

normally exceed 100 Kg to avoid handling problem. The crates shall be suitable for outdoor storage under wet climate during rainy season.

- 11.2. The packing shall be of sufficient strength to withstand rough handling during transit, storage at site and subsequent handling in the field.
- 11.3. Suitable cushioning, protective padding or dunnage or spacers shall be provided to prevent damage or deformation during transit and handling.
- 11.4. All packing cases shall be marked legibly and correctly so as to ensure safe arrival at their destination and to avoid the possibility of goods being lost or wrongly dispatched on account of faulty packing and faulty or illegible markings. Each wooden case/crate/corrugated box shall have all the markings stenciled on it in indelible ink.
- 11.5. The bidder shall provide instructions regarding handling and storage precautions to be taken at site.

12.0 Testing of material delivered in TGSPDCL Stores:-

12.1 After receipt of material at TGSPDCL stores, before taking the material into TGSPDCL stock, 1No. of sample from every $\leq 10,000$ Nos. is randomly picked up and sent to any NABL accredited laboratory as decided by TGSPDCL for Acceptance test and the tests as decided by TGSPDCL as per relevant IEC-61109/TGSPDCL specification. The cost towards transportation & testing shall be borne by the supplier.

12.2 The test results will be binding on the suppliers and TGSPDCL in general will not allow any re sampling. If the material fails in any of the tests carried out, the full lot of materials will be considered as rejected. The rejected material shall be lifted and transported at the supplier cost and the supplier has to reoffer the new lot again for inspection which will be considered as 2nd inspection for which the charges and conditions, as per section-III, General Terms and conditions, clause44:-Inspections and Tests, are applicable. After obtaining satisfactory NABL test report only, the lot will be taken into stock. 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.

12.3 At the time of every pre-dispatch inspection, the supplier should submit the cost of approx. Rs.50,000.00 per sample towards sample testing after receipt of material in stores in the shape of DD/NEFT/RTGS in favour of Pay officer/TGSPDCL.

ANNEXURE – A

Tests on Insulator units :

1. RIV Test (Dry) :

The insulator string along with complete hardware fittings shall have a radio interference voltage level below 100 micro volts at one MHz when subjected to 50 Hz A.C. voltage of 10KV & 30KV for 11KV class insulators respectively under dry condition. The test procedure shall be in accordance with **IS:8263/IEC : 437/CISPR18-2**.

2. Brittle Fracture Resistance Test

Brittle fracture test shall be carried out on naked rod along with end fittings by applying "In HNO₃ acid" (63 g. conc.HNO₃ added to 937 g water) to the rod. The rod should be held at 80% of SML for the duration of the test. The rod should not fail within the 96-hour test duration. Test arrangement should ensure continuous wetting of the rod with Nitric acid.

3. Recovery of Hydrophobicity & Corona test

The test shall be carried out on 4mm thick samples of 5cm X 7 cm.

- i) The surface of selected samples shall be cleaned with isopropyl alcohol. Allow the surface to dry and spray with water. Record the Hydrophobicity classification in line with **STRI guide for Hydrophobicity classification (Extract enclosed at Annexure-D)**. Dry the samples surface.
- ii) The sample shall be subjected to mechanical stress by bending the sample over a ground electrode. Corona is continuously generated by applying 12KV to a needle like electrode placed 1mm above the sample surface. Tentative arrangement shall be as shown in Annexure-E. The test shall be done for 100 hrs.
- iii) Immediately after the corona treatment, spray the surface with water and record the HC classification. Dry the surface and repeat the corona treatment as at clause 2 above. Note HC classification. Repeat the cycle for 1000 hrs. or until an HC of 6 or 7 is obtained. Dry the sample surface.
- iv) Allow the sample to recover and repeat hydrophobicity measurement at several time intervals. Silicone rubber should recover to HC1-HC2 within 24 to 48 hours, depending on the material and the intensity of the corona treatment.

4. Chemical composition test for silicon content

The content of silicon in the composite polymer shall be evaluated by **EDX (Energy Dispersion X-ray) Analysis or Thermo-gravimetric analysis**. The test may be carried out at CPRI or any other NABL accredited laboratory.

5. UV test: the test shall be carried out inline with clause – 7.2 of ANSI C29.13

6. UV Resistance as per ASING 53:5000hrs UV light for 8 hours and condensation for 4hours in a continuous cycle. Elongation to be limited to 20% (% of elongation to break before and after to test).

7. Salt fog test : On insulator for 1000 Hours as per IEC.

Annexure – B

The standards mentioned in this specification are available from :

Reference abbreviation	Name and address
IEC/CISPR	International Electro technical commission, Bureau Central de la commission, electro technique international, 1 rue de verembe, Geneva, SWITZERLAND
BIS/IS	Bureau of Indian Standards, Manak Bhavan, 9, Bahadur Shah Zafar Marg, New Delhi – 110 001, INDIA
ISO	International organization for standardization, Danish Board of Standardization Danish Standardizing Sraat, Aurehoegvej-12 DK-2900, Heelestrup, DENMARK
NEMA/ANSI	National Electric Manufacture Association, 155, East 44 th Street, New York, NY: 10017 U.S.A
ASTM	American Society for Testing and Materials, 1916 Race St. Phelledelphia, PA19103 U.S.A.
STRI guide	STRI, Sweden, Website : www.stri.se

ANNEXURE – C
Guaranteed technical particulars of 33KV Polymer Insulator (B&S)

Name of Manufacturer :
Address of work :

Sl.No.	Description	Unit	
1.	Type of insulators		
2	Standard according to which the insulators manufactured and tested		
3.	Name of material used in manufacture of the insulator with class/grade)		
	a) Material of core (FRP rod) i) E-glass or ECR-glass ii) Boron content		
b)	Material of housing & weather sheds (silicon content by weight)		
c)	Material of end fittings		
d)	Sealing compound for end fittings		
4	Colour		
5	Electrical characteristics :		
a)	Nominal system voltage	kV(rms)	
b)	Highest system voltage	kV(rms)	
c)	Dry Power frequency withstand voltage	kV(rms)	
d)	Wet power frequency withstand voltage	kV(rms)	
e)	Dry flashover voltage	kV(rms)	
f)	Wet flash over voltage	kV(rms)	
g)	Dry lighting impulse withstand voltage a) Positive b) Negative	kV(peak) kV(peak)	
h)	Dry lighting impulse flashover voltage a) Positive b) Negative	kV(peak) kV(peak)	
i)	RIV at 1 MHz when energized at 10KV/30KV (rms) under dry condition	Microvolt	
j)	Creepage distance (Min.)	mm	
6	Mechanical characteristics :		
a)	Minimum failing load	mm	
7	Dimensions of insulator		
	i) Weight	Kg.	
	ii) Dia. Of FRP rod	mm	
	iii) Length of FRP rod	mm	
	iv) Dia. of weathersheds	mm	
	v) Thickness of housing	mm	
	vi) Dry arc distance	mm	
	Dimensioned drawings of insulator (including weight with tolerances in weight) enclosed	Yes/No	
8	Method of fixing of sheds to housing (specify) : Single mould or modular construction (injection moulding/compression moulding)		
9	No. of weathersheds		
10	Type of sheds		
	i) Aerodynamic		
	ii) With underribs		
11	Packing details		
	a) Type of packing		

	b) No. of insulators in each pack		
	c) Gross weight of package		
12	Any other particulars which the bidder may like to give		

Note:- It is to certify that the material offered is in line with the technical requirements as per Section V

- i. The FRP rod shall be void free as proven through die penetration test.
- ii. The FRP rod must pass electric leakage current test of 175/min. the leakage current shall not exceed 0.05 milli amps.
- iii. The housing and weather shed materials shall have tensile strength of 10MPa with 300% elongation minimum and tear strength 20N/min

Signature

Name

(Designation)

Date :

Place :

(common seal)

SECTION-VI
QUALIFICATION REQUIREMENTS

1. The bidder should be a manufacturer who must have designed, manufactured, tested and supplied to **Govt. power utilities/Distribution Power Utilities (inclusive private distribution power utilities)** at least 40% of the quoted quantity of the goods / equipment of same or higher class indicated in the "Schedule of Requirement" in one continuous period of 12 months during the last 5 years period 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 now quoted.

At least 20% of similar material offered against this Specification should be in successful operation since 2 years as on the date of opening of the Bid with documentary evidence. Performance certificate by Purchase order issuing authority only) **Fresh bidders can be given order upto 15% of total quantity as a trial order if equipment justified. Any company/vendor/supplier/ contractor which is blacklisted/ debarred by any other utility and whose promoters, firms or companies were already blacklisted/debarred by another utility is not eligible to participate in the tenders.**

2. **The bidders shall have to furnish an undertaking in the prescribed format given in the section-8 regarding any relation 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.**
3. The bidder should furnish the information on all past supplies and satisfactory performance in proforma under Form 5 attested by a CA. Copies of Performance Certificated from Order Issuing authority, purchase orders, invoices and other documents in support of the above supplies should be enclosed.
4. 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 five years, bankers certificates etc.
5. The bidder will furnish Type Test Results. The type tests/design tests must have been conducted on the offered materials as per the standards (with latest amendments, if any) as per the Technical Specification Section V. The Bids received without type test reports will be treated as Non-Responsive. **If any**

change in design was made latest type tests shall be furnished along with approved drawings.

6. **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.**
7. Notwithstanding 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.
8. **Samples:** Two samples of the above material offered against this specification shall accompany the tender and are non-returnable. The tenders received without samples are liable for rejection.

Sd/-
CHIEF ENGINEER (P&MM)
TGSPDCL

SECTION-VII
SAMPLE FORMS
1. BID FORM (Form-I)

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 for the sum of. (total bid amount in words and in figures) or such other sums as may be ascertained in accordance with the schedule of prices attached 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 up to (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. BID SECURITY FORM (Form-II)

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 200 .

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
 - b) 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(tender opening date) the period of the bid validity, i.e. total for 135 days from the date of tender opening, 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 **Nationalized/Scheduled Bank**.

3. PERFORMANCE SECURITY FORM (Form-III)

To: _____(Name of Purchaser)

WHEREAS.....(Name of Supplier)
(hereinafter called "the Supplier") has undertaken, in pursuance of Contract No.....dated.....200 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 (Nationalized/Scheduled) 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. 200.

Signature and Seal of Guarantors

.....
Date.200.

.....
.....
Address:.....
.....
.....

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

4. CONTRACT FORM (Form-IV)

THIS AGREEMENT made the. day of. 200 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.

5. PROFORMA FOR PERFORMANCE STATEMENT (Form-V)

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 _____

6. DETAILS TO BE FURNISHED BY THE MANUFACTURER (Form-VI)

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 Security is enclosed	:	
7. State whether the quotation in two parts has been submitted.	:	
8. State whether 20% minimum quantity for each item 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 Security exemption letter enclosed, if exempted in case of Govt. firms.	:	
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	:	
26. Whether declaration in regard to relation to promotes of blacklisted/debarred companies by any power utility enclosed	:	

7. SCHEDULE OF DEVIATION (Form-VII)**(i) TECHNICAL (Form-VII A)**

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 :

Signature of the Bidder :

Date :

Name :

Business address:

(ii) COMMERCIAL (Form-VII B)

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 :

Signature of the Bidder :

Date :

Name :

Business address:

8. Declaration by the Company (Form-VIII)

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