



**CENTRAL ELECTRONICS ENGINEERING RESEARCH INSTITUTE
PILANI – 333 031 (RAJASTHAN) INDIA**

FAX NO. 01596-242135,242294

GRAM: ELECTRONIC, PILANI

PH.NO. 01596- 244710

No. 170/GAP-3322/MWD/10-Pur/2018

Date: 24.07.2018

NOTICE INVITING TENDER

Director, CSIR-Central Electronics Engineering Research Institute, Pilani – 333 031 (Rajasthan) invites e-tenders from Indian / Foreign Original Manufacturers or their Authorized distributors, dealers, system integrators under Two Bid System.

Sl. No.	Tender Reference	Description of Goods	Quantity	Single/Two Bid	Bid Security/ EMD
1.	170/GAP-3322/MWD/10-Pur/2018 /T-42	Manually Controlled Switch Mode 15Kv, 4 stage collector, Heater, Grid/FE, Anode TWT test power supply	1 No.	Two Bid	₹7,00,000=00

E-Bids are invited through the electronic tendering process and Tender Document can be purchased and downloaded from the e-Tender portal of Government of India, <https://etenders.gov.in>. A copy of the Tender Document is also available on CSIR-CEERI website: www.ceeri.res.in. Please note that the submission of e-Bids will be only through the e-Tender portal <https://etenders.gov.in>. Bids will not be accepted in any other form. Further it may be noted that Bids which are duly submitted on –Tender portal shall only be considered and Bids just saved without submission will not be available to the Evaluation Committee of CSIR-CEERI.

Any Bidder willing to take part in the process of e-tendering will have to get registered in the Central Public Procurement (CPP) portal, NIC, Government of India, by logging on to the portal <https://etenders.gov.in>. Bidders are requested to go through “Bidder Manual Kit”, “System settings” and “FAQ” links available on the login page of the e-Tender portal for guidelines, procedures and system requirements. In case of any technical difficulty, bidders may contact the help desk numbers and email ids mentioned at the e-tender portal. Every Bidder will be required to obtain a Class-III Digital Signature (DSC) for submission of Bids.

Tender fee and EMD (if applicable) will be required to be paid offline by Demand Draft drawn in favour of Director, CSIR-CEERI payable at Pilani. Alternatively, EMD can also be furnished in the shape of a Bank Guarantee issued by any Nationalized/ Scheduled Bank of India. Original Tender Fee and EMD to be sent to Director (Attn: Stores & Purchase Officer), CSIR-Central Electronics Engineering Research Institute, Pilani – 333031 (Rajasthan), before the due date and time as mentioned in the CRITICAL DATE SHEET. Bids of those tenderers will be summarily rejected, if the EMD and Tender Fee are not received within the deadline. Any postal delay in this respect will not be entertained.

Clarifications, if required may be sent through e-tendering portal only

Stores & Purchase Officer

Terms and Conditions

In these Terms and Conditions, the following words and expressions shall have the meaning as have been respectively assigned to them:

Bidder shall mean the entity submitting an e-Bid in response to this Tender Document.

CSIR-CEERI/ Purchaser/ Institute shall mean CSIR-Central Electronics Engineering Research Institute, (a constituent unit of the Council of Scientific & Industrial Research) having its office at Pilani – 333031 (Rajasthan), India.

Vendor/ Supplier shall mean the entity whose bid has been accepted by the Purchaser and a formal Purchase Order has been placed on them.

- 1. SUBMISSION OF BIDS:** The bid shall be submitted in two covers namely (i) Technical Bid; and (ii) Financial Bid.

Technical Bid: The bidder must ensure that the following parameters should be met while submitting the Technical Bid:

- 1.1 The e-Bid shall be digitally signed by the Bidder at the e-tendering portal by person / persons duly authorized to bind the Bidder to the contract. Written Power –of – Attorney (If required under the Bidding Process) should accompany the Bid. The person or persons signing the e-bid shall also physically sign each document of the Bid, except for printed literature. The e-Bid submitted shall be in readable form and encrypted as per e-tendering portal requirements. Standard Printed Terms and Conditions of the Bidder other than the NIT conditions shall not be considered.
- 1.2 The e-Bid shall be submitted in Two covers and shall consist of the following documents:

Sl. No.	Document Required	Document type
1.	Scanned Technical Bid duly filled-in and signed by Bidder along with relevant documents.	.pdf
2.	Scanned copy of any other document which the Bidder desires to submit.	.pdf
3.	Price Bid	.xls
All the above scanned documents must be e-signed prior to being uploaded and saved in the system.		

- 1.3 The bidders shall digitally sign and encrypt their bid and upload the bid on-line at the e-Tendering portal.
- 1.4 If the envelope is not digitally signed & encrypted, the Purchaser shall not accept such open Bids for evaluation purpose and shall be treated as non-responsive and rejected.

- 1.5 Purchaser shall receive the bids online through CPP e-portal only. The e-Tender portal shall automatically stop accepting bids at the scheduled date and time specified in the Tender Document. Partially submitted bids shall be treated as invalid and shall not be processed. Bidders are advised to upload and submit their bids timely in view of the electronic process so as to avoid last minute issues.
- 1.6 Purchaser may, at its discretion extend the deadline for submission of the e-Bids by amending the Tender 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.
- 1.7 Quotation should be submitted directly by the manufacturer/supplier. In case any sole authorized distributor, dealer or authorized Indian Agent should submit the quotation on behalf of their principal, sole authorized distributor, dealer or authorized Indian Agent must enclose a certified copy of the agency agreement between principal and their Indian Agent, in reference to CSIR letter No. 13-4(04)/15-16/S&P/Policy/Cir dated 13.9.2017, failing which their quotation will be summarily rejected.
- 1.8 In reference to **CSIR letter No. 13-4(04)/15-16/S&P/Policy/Cir** dated **13.9.2017**, it is a compulsion for the foreign bidder to disclose the name and address of their Indian Agent and representative in India and the same goes for an Indian bidder to disclose their foreign principal or associates, failing which their quotation will be summarily rejected.
- 1.9 In case a bidder is not doing business within India, it shall furnish the certificate to the effect that the bidder is or will be represented by an agent in India equipped and able to carry out the supply, maintenance, repair obligations etc. during the warranty and post-warranty and post-warranty period.
- 1.10 The bidder shall bear all costs associated with preparation and submission of its bid irrespective of the conduct or outcome of the bidding process.
- 1.11 The bidder should not indulge in any corrupt, fraudulent, collusive, coercive practices during the entire process of procurement and execution of contract/order.
- 1.12 Conditional tender will be summarily rejected.
- 1.13 The Bid shall be prepared by the bidder, as well as all correspondence and documents relating to the bid exchanged by the bidder and CSIR-CEERI shall be written in English language only.
- 1.14 The vendor must quote on Ex-works prices inclusive packing and documentation charges etc.
- 1.15 The price quoted by the bidder shall remain un-changed during the contract period and shall not vary on any account.

- 1.16 The vendor must quote all lots and items listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Lots or items not listed in the Price Schedule shall be assumed to be not included in the bid.
- 1.17 **Custom Duty:** Purchaser is registered with Department of Scientific and Industrial Research (DSIR) vide UT/VIRG-CDE(39)/2001 dated September 25, 2001 for availing custom duty exemptions under Government Notification No. 51/96 Custom dated 23rd July, 1996. We shall pay concessional custom duty.
- 1.18 **GST:** Purchaser is registered with Government of India and Government of Rajasthan, vide GST registration No. 08AAATC2716R1ZF. The percentage of GST as applicable should also be specified clearly in the quotation. CSIR-CEERI registered with Department of Scientific and Industrial Research (DSIR) vide UT/VIRG-CDE(39)/2001 dated September 25, 2001 for availing GST exemptions under Government Notification No. 47/2017 dated 15.11.2017. We shall pay concessional GST.
- 1.19 **Indigenous Supplies:** For Indigenous supplies, the prices should be FOR CSIR-CEERI inclusive of packing, forwarding, installation and commissioning, freight and insurance charges. In case of Ex-Works Prices, The Packing, Forwarding, Freight, Insurance, Installation/ Commissioning charges must be clearly quoted in you quotation. No other chares than those mentioned in the quotation will be paid.
- 1.20 The technical details and specifications of the items must be indicated clearly point by point conforming to the description of the items/specifications as per tender specifications along with Commercial terms and conditions such as payment terms, delivery date, packing, forwarding, freight, taxes and duties, installation and commissioning etc. **WHERE THERE IS NO MENTION OF THE ABOVE TERMS AND CONDITIONS SUCH QUOTATIONS SHALL BE REJECTED AS INCOMPLETE.**
- 1.21 Bidders must note that the e-tender portal shall not permit uploading of bids after the scheduled time of submission.
- 1.22 The bidder may correct or modify his digitally signed bid after submission prior to the deadline for submission of bids, through provisions of e-tendering portal.
- 1.23 Comparative statement of technical offers should be provided, drawing a comparison between Bidder's offered specifications and Purchaser's Tender specifications, bringing out clearly the deviations, if any.
- 1.24 The Bidder must offer the validity of the quotation as mentioned in the tender document. If the Bid validity is shorter than the required validity period, as per the tender document, such quotations shall be rejected as incomplete.

2. PRICES

2.1 Bidders are requested to note that they should necessarily submit their financial bids in the MS-EXCEL format provided and no other format is acceptable. Bidders are requested to download the BOQ file, available on the e-tendering portal, open it and complete the unprotected cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BOQ file is found to be modified by the bidder, the bid will be rejected. It may be noted that only duly submitted bids shall be evaluated and bids just saved but not submitted shall not be part of the evaluation process.

(i) **In case of Import of goods:** The price must be quoted on Ex-Works prices inclusive packing and documentation charges. The Vague Terms mentioned in the quotation like “packing charges etc. extra” without mentioning the amounts of these charges will not be acceptable. The airfreight and insurance shall be arranged and paid directly by Purchaser in Indian Rupee at their end.

(ii) **In case of Indigenous Supplies:** For indigenous supplies, the prices should be FOR CSIR-CEERI inclusive of packing, Forwarding, installation and commissioning, freight and insurance charges. In case of Ex-works Prices, The Packing, Forwarding, Freight, Insurance, Installation/Commissioning charges must be clearly quoted in your quotation. No other charges than those mentioned in the quotation will be paid.

2.2 In the event of any errors or ambiguity in Unit Rates itself, the Price Bids of the Vendor shall be rejected.

2.3 CSIR-CEERI shall not consider any changes on any account after the submission of Bid and hence the prices offered shall remain firm during the validity of the Bid and shall not subject to variations on any account.

2.4 The bidder shall quote prices only in the BOQ file, after downloading it from the e-tendering portal.

2.5 **Prices of additional / optional items not appearing in the BOQ, if any, shall be quoted in a separate PDF file, duly signed by Bidder’s authorized person/persons.**

3. **PACKING:** The goods must be packed by standard packing material and standard export / import packing material in case of import failing which supplier will only be responsible for any damages / discrepancies to the consignment due to poor packing of goods.

4. **PERIOD OF DELIVERY:** The goods must be delivered within 12-16 (Weeks) from the date of the Purchase Order positively at CSIR-CEERI, Pilani. However, if this Delivery Period is not acceptable to Bidder, please quote your fixed date of delivery.

5. **VALIDITY OF OFFER:** The prices must be valid for a period of Six Months from the date of opening of the quotation. No upward changes in prices will be acceptable in any condition after opening of tender.
6. **PRE INSTALLATION REQUIREMENTS:** Pre installation requirements like Space, Power Supply, Water Line or any other essential requirements which are to be kept ready / completed by CSIR-CEERI before supply of equipment, must be quoted by the bidder clearly in their quotation to avoid the delay in Installation and Commissioning of the equipment.
7. **INSTALLATION/COMMISSIONING:** The equipment must be installed / commissioned and demonstrated by the supplier at CSIR-CEERI, Pilani within 30 days (01 Month) after call letter of Purchaser for Installation / Commissioning and the same will be put under operation as per the contract specification. Purchaser's technical expert/ Scientist will test the performance of the equipment. No separate charges for installation / commissioning and demonstration etc. will be paid to the party beyond the quoted prices.
8. **TRAINING:** The supplier shall arrange extensive operation and maintenance training to CSIR-CEERI officials at the time of installation/commissioning of the equipment at CSIR-CEERI, Pilani, FREE OF COST.
9. **GUARANTEE:** The equipment must be guaranteed / warranted for a period of One Year (Un-conditional warranty) from the date of its satisfactory installation/ commissioning against all manufacturing defects. If the equipment is found defective during this period the whole equipment or part thereof will have to be repaired/ replaced by the supplier free of cost at CSIR-CEERI, Pilani. However, if the items are guaranteed/ warranted for a period of more than One Year, it may be specifically mentioned in the quotation. In case the Bidder fails to rectify the defects and equipment is not put to proper function as per the contract specifications, the whole equipment will be returned to the Bidder at their cost. Either the Bidder will replace the whole equipment as per the contract specifications or whole money paid to CSIR-CEERI, Pilani on the account of purchase of the equipment, will be refunded by Bidder to Purchaser.
10. **SPARE PARTS:** The availability of spare parts must be guaranteed for a period of 15 years. In case of discontinuation of the equipment of parts thereof, the Bidder has to intimate to the Purchaser, CSIR-CEERI, in advance.
11. **AFTER SALES SERVICE:** It must be clearly indicated in the quotation whether the after sales service would be provided by the Bidder himself or by their authorized agent after satisfactory installation/ commissioning of the equipment during the warranty period.
12. **INDIAN AGENTS:**
 - (a) As per CSIR letter No. 13-4(04)/15-16/S&P/Policy/Cir dated 13.9.2017, Indian Agent must enclose a certified copy of the agency agreement between their principal and them. As well as it is a compulsion for the foreign bidders to disclose the name and address of their Indian Agent and representative in India and the same goes for an Indian bidder to disclose their foreign principal or associates, failing which their quotation will be summarily rejected.

(b) The Indian Agents Commission must be declared by the foreign Supplier/ Indian Agent in the quotation which will be paid in Indian Currency after satisfactory installation & commissioning / functioning of the equipment.

13. **FOREIGN SUPPLIER:** Foreign supplier / manufacturer is required to submit their quotation directly to CSIR-CEERI with in due date and time. In case foreign supplier / manufacturer is willing to submit their quotation through his authorized agent in India, The Indian Agent must enclose a certified copy of the agency agreement between its principal and itself, failing which the quotation shall not be considered.
14. **PAYMENTS FOR IMPORTS:** Through Letter of Credit – L/C will be opened for 100% order value after receipt of acceptance of order from the successful tenderer along with performance bank guarantee for 10% amount of order value valid up to expiry of Warranty Period plus 2 months. The 90% amount of LC shall be released on presentation of complete shipping documents. Balance 10% or equipment cost and other charges shall be released after satisfactory installation and commissioning of the equipment at CSIR-CEERI, Pilani.
15. **BANK CHARGES:** The bank charges outside India will be to the account of Bidder.
16. **FOR INDIGENEOUS:** The payment will be made against bill only after supply of goods in good working conditions and satisfactory installation/ commissioning and performance of the equipment at CSIR-CEERI, Pilani and after acceptance certification by Purchaser Technical Expert/ Scientist, through RTGS. However, bidder will be required to submit performance bank guarantee for 10% amount of the total value of order along with acceptance of Purchaser order valid up to expiry of warranty period plus Two months. In case of non-fulfilling the commitments the Bank Guarantee will be forfeited.
17. No advance payment will be made to any Bidder.
18. **INSPECTION:** The consignment shall be opened in the presence of bidder's representative and inspection of the system will be done by Purchaser's Technical Expert / Scientist in the presence of Bidders representative, if present, at CSIR-CEERI, Pilani. In case bidder's representative is not available, the inspection will be done by technical expert, scientist at CSIR-CEERI, Pilani. The discrepancies will be intimated to supplier accordingly. All short supplies will be arranged by supplier on FOR CSIR-CEERI, Pilani basis. In case of receipt of the material in damaged or defective condition the supplier will have to arrange the replacement of goods free of cost pending the settlement of the insurance case wherever applicable, as the insurance is to be arranged by Purchaser from Bidder's Warehouse to Purchaser's Warehouse.

19. **EMD:** EMD of ₹7,00,000/- (₹ Seven lakh Only) OR equivalent in respective Foreign Currency TOWARDS EARNEST MONEY IN THE FORM OF BANK GUARANTEE/ Demand Draft in original, valid for Six Months (180 Days) plus 45 Days from the date of opening of the tender must be submitted to Purchaser before submitting the Technical Bid and a scanned copy of the same must be enclosed with Technical Bid, in case of Two Bid system, otherwise quotation will not be considered. The Bidders, if registered with NSIC, Govt. Public Undertakings, Central Autonomous Bodies and with CSIR Labs/ Institutes as manufacturer for supply of the same item for which the Bidder is submitting the quotation, will be exempted from submission of EMD. These parties will have to submit registration certificate to Purchaser before submitting the Technical Bid and also a scanned copy of the same must be enclosed with Technical Bid. EMD of the un-successful bidders shall be refunded at the earliest after finalizing the purchase of the concerned item. The parties must, therefore, submit a pre-receipted Receipt along with quotation to enable Purchaser to refund their EMD. In case the bidder is failed to accept Purchaser order or failed to execute Purchaser order the EMD will be forfeited. (BID(s) NOT ACCOMPANIED WITH AN EMD IS / ARE LIABLE TO BE REJECTED).
20. **PENALTY:** In case the delivery of goods is not made on or before the prescribed date of delivery or the installation and commissioning is not completed within stipulated period by the supplier a penalty @ 0.5% per week of order value will be charged to a maximum of 5% from the successful bidder.
21. **PERFORMANCE SECURITY:** An unconditional performance bank guarantee from scheduled bank for 10% amount of order value has to be furnished by successful bidder along with acceptance of Purchaser order towards the performance security within 21 days of the placement of Purchase Order failing which the order shall be deemed as terminated. The Bank Guarantee must be valid up to Delivery Period and Installation & Commissioning Period, Warranty Period plus 2 Months. In case of any breach of contract the Bank Guarantee will be forfeited.
22. **DELETION OF NAMES OF DEFAULTING PARTIES:** Names of parties backing out/ defaulting after opening of tenders will be recommended for deletion from the list of suppliers in addition to forfeiture of EMD submitted by the party. Those firms have already been Black Listed by CSIR / Govt. of India, need not apply / quote.
23. **UNSOLICITED QUOTATION/ LATE QUOTATION:** Unsolicited quotation/incomplete quotations / late or delayed tenders shall not be considered at all. Post tender revision/corrections shall also render their tender liable for rejection. It is the responsibility of the bidder to ensure that the bid complete in all respect is received in CSIR-CEERI before the last date of receipt of tender. CSIR-CEERI will not be responsible for delay in transit of any bid.
24. **COMPLIANCE STATEMENT:** Tenders are required to furnish a compliance statement of each and every specification of Purchaser tender supported by the technical literature/ leaflet in the following format, preferably giving the price of each of the specification or part/ accessories of the equipment required to be quoted. The deviations, if any from the tendered specifications should be clearly brought out in the statement. Similarly, the compliance of each of the required terms and conditions of the tender may also be stated in the form of a separate compliance statement along with quotation (with Technical Bid in case of Two Bid system). Deviations may be given in separate column.

The bidders are advised to submit both the compliance statements essentially along with their quotation failing which their offer will be treated incomplete and can be ignored. It must be certified that the quoted equipment is of latest technology.

FORMAT OF COMPLIANCE STATEMENT OF SPECIFICATIONS

Sl. No.	Name of Specifications/ part/ Accessories of tender enquiry	Specifications of quoted Model/ Item	Compliance Whether "YES" or "NOT"	Deviation, if any to be indicated in un-ambiguous terms
1	2	3	4	5

FORMAT OF COMPLIANCE STATEMENT OF TERMS & CONDITIONS

Tender Terms and Conditions	Whether acceptable or not	Deviation from Tender Terms, if any
1	2	3

- 25. FORCE MAJEURE:** Neither of the Parties hereto shall be liable for damage or have the right cancel for any delay or default in performing it's control including but not limited to Fire, Storm, Floods, Earthquakes, acts of God, Government restriction, continuing domestic or international problems (such as wars, rebellion, insurrections, strikes, riots, work stoppages, labour dispute) or delay as to ancillary materials, which affect the dates of fulfillment of any obligations as per the Purchase Order. Such dates will be respectively postponed for the period of continuance of such force majeure circumstances and the other party can suspend the performance of its obligations correlated to the postponed obligation of the effected party. The obligation thus postponed shall be resumed after the force majeure circumstances have ceased. At the beginning, during and at the pre-visible end of the force majeure circumstances the parties shall promptly consult with each other about appropriate counter measures to be taken. If the performance of obligations of any party should be delayed more than six (06) months by reasons of Force Majeure circumstances mentioned above, the parties shall mutually consult about subsequent performance of obligations.
- 26. CANCELLATION OF ORDER:** In the event of vendor's failure to execute the order as per Terms and Conditions mentioned therein. CSIR-CEERI reserves the right to cancel the Purchase Order without any obligation. The Bidder may also specify obligations if CSIR-CEERI decides to cancel the Purchase Order for reasons attributable to CSIR-CEERI.
- 27. EVALUATION OF TENDER:** Before submission of bid, the bidder is expected to examine all the instructions, forms, terms and specifications in the bidding document and should ensure that following conditions are fulfilled:

- (a) The price schedule should be prepared in .xls and enclosed duly signed.
- (b) The bid validity should not be shorter than required.
- (c) The manufacturer's authorization and certified copy of the agreement between principal and Indian Agent should be enclosed in case the bidder is authorized to be Indian Agent / Dealer / Distributor.
- (d) The bidder should agree to provide the Performance Security.
- (e) The quoted goods should be as per required specifications.
- (f) In case the bid is substantially responsive, the purchase may request that bidder may submit the necessary information, documentations, within a reasonable period of time, to rectify non-material, non-conformities or omission in the bid related to documentation requirements. Failure of the bidders to comply with request may result in the rejection of its bids. But in case of the material deviation/ reservation or omission which limits or is inconsistent with the bidding documents and the purchaser's rights or bidders obligations under the contract or which is certified, would unfairly affect the other bidders, the bid will be rejected.
- (g) The bidder should fill-up the prices carefully in arithmetical and words.
- (h) Sealing exchange rate / equivalent to Indian currency will be as on the date of bid opening in the case of single bidding and the rate on the date of opening on the priced bid in the case of two parts bidding.
- (i) The comparisons between the indigenous and the foreign offers shall be made on FOR destination basis and CIF/CIP basis respectively. However the CIF/CIP prices quoted by any foreign bidders shall be loaded further as under:
 - (a) Towards customs duty and other statutory levies as per applicable.
 - (b) Towards custom clearance, inland transportation etc. – 2% of the CIF/CIP value.
- (j) The purchaser reserves the right at the Time of Contract award to increase or decrease the quantity of goods and services originally specified in the tender document without any change in unit price or other Terms and Conditions. Further, at the discretion of the purchaser, the quantities in the contract may be enhanced by 20% within the Delivery Period.

28. TECHNICAL EVALUATION OF TENDERS:

- (a) On the due date the Technical bids will be opened and referred to the Technical Sub Committee which is duly constituted by the Director, CSIR-CEERI.
- (b) The information received and the bids already submitted together will be examined with reference to the tendered specifications and evaluation is made by the Technical Sub Committee.
- (c) After the technical evaluation is completed and approved, CSIR-CEERI shall inform to the bidders whose tenders have been rejected technically with the reasons for rejection.

29. The successful bidders will be informed regarding the date and time of commercial/ Price Bid opening.

30. The purpose of obtaining two bids (Technical Bid and Price Bid) is to evaluate all the firms on Technical Basis with reference to the tendered specifications, performance of similar Solutions/Applications elsewhere, obtaining user's views with reference to the earlier supplies. This will enable the technical committee to arrive at a fair recommendation in the interest of the Institution.

31. SETTLEMENT OF DISPUTES AND ARBITRATION:

- 31.1 The Purchaser and the Supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Purchase Order/ Contract. If, after twenty one (21) 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. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.
- 31.2 Disputes or differences shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director General, Council of Scientific & Industrial Research and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator.
- 31.3 In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of Clause 30.2 above. But if this is not acceptable to the Supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Laws).
- 31.4 The venue of the arbitration shall be the place from the purchase order or contract is issued.
- 31.5 Notwithstanding any reference to arbitration herein:
- (a) the parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and
 - (b) the Purchaser shall pay the Supplier any monies due the Supplier.

32. APPLICABLE LAW:

- 32.1 The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to a court of competent jurisdiction in Jaipur.

33. ACCEPTANCE OF OFFER: The Director, CSIR-CEERI reserves the right to accept or reject any quotation / tender in part or full without assigning any reason thereof. No interim inquiries will be attended to.

34. FALL CLAUSE: The supplier shall certify that if the prices go downwards, before execution of CSIR-CEERI order than the quoted prices, the benefit in this situation shall be allowed to CSIR-CEERI by the supplier. The supplier shall certify that the equipment material shall not be supplied to anyone less than the contract price during the period of execution of CSIR-CEERI order.

SCHEDULE OF REQUIREMENT

Tender No. 170/GAP-3322/MWD/10-Pur/2018

Date: 23.07.2018

Specifications of Manually Controlled Switch Mode 15KV, 4 stage collector, Heater, Grid/FE, Anode TWT Test Power Supply

1. **Scope:** To operate and test various types of low to medium power helix Traveling Wave Tube (TWT), it is required to have a dedicated compact one-rack Automated TWT Test Setup.
2. **Technical Specifications :**

Sr.No.	Parameter/Requirement
1.	Scope: To test CW helix TWT's, an automated TWT Test Bench is required (Refer Figure 1 & 2 for tentative design)
2.	Configuration: Vendor shall propose Automated TWT Test Set up (CW Type) having following units in single rack:
2.1	Control Module CW 1 No.
2.1	CW Helix Supply Module CW 1 No.
2.1	CW Collector Supply Modules CW 4 Nos.
2.1	Heater Supply Module 1 No.
2.1	Focus Electrode Modulator Module CW 1 No.
2.1	Pulse Generator Module 1 No.
2.1	Anode Supply 1, Anode Supply 2 and Ion Pump Module CW 1 No. Each
2.1	Grid /BFE Modulator 1 No.
3.	Mechanical Configuration: All modules shall be mounted in a single 19" rack, 48U height floor standing Rack, with wheels at bottom and lifting mechanism at top. The rack height shall accommodate four collector modules, a helix module, and a grid module; focus electrode module, heater module, control module, anode module. (Refer Figure 3 for tentative layout)
4.	Cooling Mechanism: Shall be air convection cooled with built-in-fans
5.	TWT Test set operation: Shall be controllable locally.
6.	HV Isolation: Suitable HV insulation shall rely on air-spacing as far as possible to operate in Indian humid environment. Suitable insulation/isolation to be provided if needed.
7.	Operating Environment: +5°C to +40°C, capable up to 85% RH humidity.
8.	Input AC Power Supply: 210-240V or 440V, 50Hz, 1/3-phase power input
9.	Common Module Features
9.1	Each Module shall be powered independently.
9.2	Each supply modules produces a fault output and has a master ON/OFF input. There are used by the control module to sequence the module switching ON and to switch OFF the system if any faults occur.
9.3	Adjustment controls in each module would be ground referenced. However, any metering and displays may be via floating meters behind glass windows for

	insulation. LED or LCD panel meters would be used. Typical meter accuracies are 4 or better.
9.4	The cathode voltage monitor circuit will be supplied calibrated to an accuracy of 0.1%, although an external meter may be needed to be used to achieve this.
9.5	Each Module shall be controlled by a control module as explained later in specifications.
9.6	Two Interlock must be provided with one inhibiting TWT beam and switching off cathode and collector power supplies and the other only inhibiting focused electrode beam Modulator Pulse.
9.7	Upon turning on from the power-off condition, the built-in controller must set all the previous set test parameters to Zero (initial condition).
9.8	The test set shall have the following basic protection features apart from individual module protection features described in this document.
	(a) Crow-bar protection
	(b) Phase Failure detection and shut down
	(c) Internal Power supply fault detection and shut down
9.9	(d) Other requirements as specified with individual modules in later sections.
	Switch ON/OFF Sequencing: Suitable interlocking shall be provided to enable to switch on the power supply in following order flow:
	⇒ ION Pump (Delay Time within 10-15 Minutes) ⇒ Filament ⇒ Delay of 3 Minutes ⇒ BEF ⇒ Anode 1 ⇒ Anode 2 ⇒ Collector 1 Collector 2 ⇒ Collector 3 ⇒ Collector 4 ⇒ Cathode
	Note: For switch-OFF, reverse sequence shall be followed.
9.10	Control Knob: All outputs shall be continually variable by a control knob on front panel for local control.
9.11	All collector voltages, BEF voltage, anode-2 voltage and filament voltage shall be floating on Cathode.
9.12	The chassis shall be grounded properly, Grounding Mechanism shall be provided by supplier.
Technical Specifications for Individual Modules	
10.	Control Module
10.1	Function: The control module shall control over-all activity to supply ON and OFF the total test setup and it shall continuously monitor and control all other power supplies in the rack. It shall be microprocessor/ microcontroller/ PLC based control unit to carry out its functions. It shall contain the following functions:
	(a) Emergency stop button
	(b) External interlock inputs
	(c) ON/OFF command switches for Heater, Grid, Helix and Collector Modules etc.
	(d) Indicator lights for faults and trips and reset
	(e) Interfaces to each module
	(f) Warm-up timer
	(g) Running time meters
	(h) Mechanical EHT Dump switch to short Cathode to ground, controlled by interlocks and prime power.
	11.0
11.1	Function: This module should generate the TWT Cathode voltage relative to

	Helix (Ground). To drive the TWT's. The major specifications for helix supply is as follows.
11.1.1	Cathode Voltage
	(a) -1.0 to -15 kV Adjustable, Supply referenced to Helix (Ground)
	(b) (+) connected to ground
	(c) Voltage Settability shall be better than 20V
	(d) Adjustment accuracy: $\pm 3.0V$ maximum
11.1.2	Helix Current
	(a) 30 mA Average
	(b) Over current trip must be settable 0-30mA
	(c) Over helix current must fire the crowbar protection/ Turn Off the Cathode power supply
	(d) Must have helix current meter
	(e) Cathode current meter 0-500mA
	(f) Must have settable Cathode UV, OV & OC protections
11.1.3	Max Power: 2.0 KW
11.1.4	Rise Time: 100mS (max)
11.1.5	Line/Load Regulation
	(a) line Regulation: ± 0.1 % (max)
	(b) load Regulation: ± 0.1 % in CW mode
	(c) Droop: 2V/ micro seconds
11.1.6	Ripple/Spike: Less than 100mV (rms)
11.2	Due to the low helix currents required by TWTs and the CW operation, large EHT capacitors are not required. If any arc occurs within TWT, then the energy shall be limited by series resistors maximum to <1 J.
11.3	It shall be possible to synchronize this module to an external clock signal to minimize the noise.
12.0	Collector Supply Module CW
12.1	Function: This module should generate the TWT Collector Voltage relative to Cathode. The key specifications of each collector module is as follows:
12.1.1	Collector Voltage
	(a) 05% to 95% of cathode voltage adjustable (Supply referenced to Cathode)- details as per section f.
	(b) All collector voltage shall be variable in the range specified independently.
	(c) Any number of the collector shall be used/ unused without affecting the function of the test bench.
	(d) Collector voltages are positive w.r.t to cathode.
	(e) Voltage Settability: 10V max
	(f) Type-1: 4-collector configuration: C1: 05% to 40% (0.75KV to 6.0KV) C2: 10% to 60% (1.5KV to 9.0KV) C3: 20% to 70% (3.0KV to 10.5KV) C4: 30% TO 95% (4.5KV to 14.25KV)
12.1.2	Collector Current: 500 mA Average (w.r.t Cathode)
12.1.3	Max Power: 7000W
12.1.4	Rise time: 100mS maximum
12.1.5	Cathode Voltage Isolation: >20KV
12.1.6	Line & Load Regulation: $\pm 10V$ (CW Mode)
12.1.7	Ripple/ Spike: $\leq 10V$ peak to peak
12.2	If any arc occurs within TWT, then the energy shall be limited by series resistors maximum to <1 J.
12.3	It shall be possible to synchronize this module to an external clock signal to

	minimize the noise.
12.4	The protection and other features of each module shall be
	(a) Monitor for pulsed Collector Current (Current Transformer)
	(b) Under voltage Interlock (Adjustable)
	(c) Overvoltage Interlock (Adjustable)
	(d) Collector Overload Interlock (Adjustable)
	(e) Meters for Collector Voltage/ Under voltage trip setting
	(f) Meter for Average Collector Current/ Trip setting.
12.5	Additionally the Collector module shall incorporate clamp diodes to ensure that the Collector voltages cannot go positive during an arc. In the architecture that proposed, the Collector supply shall be independent from the Cathode Supply. The Collector Voltage shall be regulated to be a fixed value relative to Cathode.
13.0	Heater Supply Module CW
13.1	Function: This Module shall generate the TWT Heater voltage relative to Cathode. The major specifications are as follows:
13.1.1	Heater Voltage
	(a) 0.0V to 12.0V adjustable RMS 25KHz (Supply referenced to Cathode, (+) connected to Cathode.)
	(b) Setting Range: 0.5 volts
	(c) A volt meter to indicate heater voltage set (0-12V)
13.1.2	Heater Current
	(a) 3.5A Maximum, Adjustable current limit fitted
	(b) Surge Current Maximum 4 A
	(c) A Current Meter 0-3.5A to read the current drawn
	(d) Must have settable OC, UV, OV protections.
	(e) A timer must disable turning ON of Collector and Cathodes power supplies.
	(f) The timer must be settable in the range 0-240 ms
13.1.3	Max Power: 10.0W
13.1.4	Rise Time: 100mS maximum
13.1.5	Isolation from Ground: >20KV
13.1.6	Load/Line Regulation: 0.1% max
13.1.7	Ripple/Spike: <100mV peak to peak
13.2	The protection and other features shall be:
	(g) Under Voltage Interlock (Adjustable)
	(h) Overvoltage Interlock (Adjustable)
	(i) Heater Current Limit Interlock (Adjustable)
	(j) Meter for Heater Voltage/ Under Voltage trip (Adjustable)
	(k) Meter for Average Heater Current/ Limit Setting.
	(l) 4 Wire Sense Connections
	(m) Additionally, the Heater Module also incorporates clamp diodes to ensure that the Heater Module is protected during an arc.
14.0	FOCUS ELECTRODE MODULATOR MODULE
14.1	Function: This module shall provide a Focus electrode control voltage. It shall consist of:
	(a) Cathode referenced Focus Electrode ON Voltage Supply
	(b) Cathode referenced Focus Electrode OFF Voltage Supply
	(c) Cathode referenced Focus Electrode Modulator
	(d) Low Voltage Pulse Driver circuit
14.2	The major specifications for this module shall be as follows:
14.2.1	Focus Electrode ON Voltage
	(a) 0 to -100 V Adjustable (Supply Referenced to Cathode)
	(b) Under voltage must disable Modulator pulse, Cathode and collector voltage.
14.2.2	Focus Electrode OFF Voltage: -900 to -1500 V Adjustable (referenced to

	Cathode)
14.2.3	Focus Electrode ON current: 2.0 mA Max Internally limited
14.2.4	Focus Electrode OFF current: 2.0 mA Max Internally limited
14.2.5	Modulator Duty: 0 to 100%
14.2.6	Modulator PRF: 1kHz max (for TWT and Lead Capacitance < 100 pF)
14.2.7	Modulator Rise Time: 150nS max
14.2.8	Modulator Fall Time: 150nS max
14.2.9	Modular Pulse Width: 1micro second to CW (Width of flap top of output pulse)
14.2.10	Modular Overshoot: TBA (Depends on lead lengths)
14.2.11	Regulation: 1% max.
14.3	The protection and other features are as follows:
	(a) OFF Voltage/Under Voltage Interlock (Adjustable)
	(b) Meter for OFF Voltage/ Under voltage trip (Adjustable)
	(c) Meter for ON Voltage
	(d) Ground referenced Capacitive Divider to monitor Focus Electrode Voltage
	(e) Spark gap to protect modulator from TWT arcs.
14.4	The input to the modulator shall be BNC connector on the front panel, 5V HCMOS compatible signal, and ground referenced. A PRF limit circuit shall be included to prevent overdriving the modulator.
15.0	Anode-1 and Anode-2 Modules
15.1	Anode-1: w.r.t Body it shall have up to 1kV/10.0mA(Average) -adjustable in max 10V steps
15.2	Anode-2: Anode-2 : 0 to 15KV/10.0mA (Average)-adjustable
	(a) Settability Range: 25V max
	(b) Ripple: 100 mVpp max
	(c) Line/ Load Regulation: ±2% max
16.0	Ion Pump Supply
16.1	The unit shall also include appendage Ion pump power supply module of capacity about 2 liters/second. The specifications are
16.1.1	Voltage: 3300V nominal (referenced to ground)
16.1.2	Current: 30mA nominal

13. Warranty:

13.1 The vendor shall provide Warranty as given below:

“The units supplied here upon shall be free from any defects in material or workmanship and in accordance with the applicable specifications and drawings”.

13.2 The warranty shall be for a period of 3 (Three) Years after successful installation and commissioning at CSIR-CEERI, Pilani after written acceptance by CSIR-CEERI, Pilani. If the standard Warranty is 01 (One) Year, then vendor shall quote for additional 02 (Two) Years. It shall include all the necessary regular maintenance, repairs and services. The vendor shall attend to any repairs within a period of 07 (Seven) Days after written intimation from CSIR-CEERI, Pilani. It shall be noted that no visiting/labour/travel/accommodation charges shall be paid during warranty period.

13.3 Vendor shall quote for AMC for 03 (Three) Years post warranty period as optional. The amount shall be payable at the end of each year.

14. General Terms and Conditions

6.1	Tender Mode	The tender shall be two-part tender consisting of Technical Bid and Techno-Commercial Bid. Part I: Technical Bid: The Technical Bid shall consist of the following ➤ Detailed description of the system offered w.r.t each of
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		<p>the above specifications.</p> <ul style="list-style-type: none"> ➤ Detailed list of scope of supply included in the offer including list of deliverables. ➤ List of major items used in realization of the system. ➤ Catalogues, leaflets, brochures, application notes etc for all major Components and Equipments proposed. Datasheet shall be provided in case of standard equipment quoted. ➤ Compliance table with remarks and references including compliance to general terms and conditions must be submitted along with the quotation. ➤ Un-priced commercial bids shall be provided along with the Technical Bid. ➤ Any other details relevant to the equipment. ➤ Warranty Details. <p>Part II: Techno-Commercial Bid: Supplier shall furnish following details/documents in their commercial bid</p> <ul style="list-style-type: none"> ➤ Price breakup for all major sub-assemblies, if any. ➤ Price breakup for miscellaneous items if any (include all left out elements given details)
6.2	Equipment	The vendor shall quote for new equipment only. No quote for old or refurbished equipment shall be considered. Adequate shelf life shall be considered while using any component during the system design and realization.
6.3	Calibration Certificates	Supplier shall provide valid calibration test certificate for all the meters and sensors used at the time of delivery. These test certificates shall be valid throughout the period of warranty/guarantee after the completion of installation and commissioning of the unit at the purchaser site. Vendor shall carry out required calibrations (at least once a year) during the warranty period free of cost.
6.5	Electrical Power and other utilities required	<ol style="list-style-type: none"> 1. Supplier shall clearly specify the estimated connected power as well as estimated peak power consumption of the system, offered considering different operation mode described above. 2. Supplier shall clearly specify quantity and details of the other utilities expected to be provided by the purchaser for making system operational including those during installation phase.
6.6	Parts Usage	Supplier shall source and use all the hardware parts from standard vendors like Siemens, Allen Bredley, L&T, Schneider, Cutler Hammer, Telemecanique, ABB etc. Supplier shall furnish a list of all the components makes proposed for power supply being offered. The components shall be sourced from reputed vendors.
6.8	Quality Control Plan	Supplier shall furnish their standard QC plan used during execution of similar systems.
6.9	Demonstration of Specifications, Acceptance Test	<ul style="list-style-type: none"> ➤ Unit shall be dispatched only after clearance from purchaser after successfully testing and acceptance at the vendor's site. The purchaser/representative of the purchaser may be present during acceptance at vendors site however the same shall be finalized during tender evaluation. Vendor shall submit the acceptance test procedure along with the offer for approval by CSIR-CEERI, Pilani (final approval shall include mutually

		<p>acceptable modifications, if any, as suggested by CSIR-CEERI, Pilani).</p> <ul style="list-style-type: none"> ➤ The manufacturer shall submit the test plan with test procedures for the functional and environmental tests to be conducted on the unit after placement of P.O. The test plan shall include the test condition, procedure for conducting each test, the test equipment used and their calibration status etc. ➤ All the test plans shall be approved by CSIR-CEERI, Pilani prior to commencement of testing and shall include all the mutually agreeable tests and procedures as suggested by CSIR-CEERI, Pilani.
6.10	Packing, Transportation, Installation and Commissioning	<ol style="list-style-type: none"> 1. Vendor shall suitably pack complete system for transportation to avoid any kind of damage or degradation including environmental conditions. 2. Supplier shall organize for required loading/unloading shifting of all system components to the place of installation to this system at CSIR-CEERI, Pilani. 3. Supplier shall be responsible for complete installation and commissioning of the system at CSIR-CEERI, Pilani. The specifications demonstrated prior to dispatch shall be demonstrated during commissioning per mutually agreed acceptance test plan at SAC. Acceptance test plan shall be generated by supplier along with the and shall be reviewed and agreed by the purchaser.
6.11	Training at CSIR-CEERI, Pilani	Vendor shall provide training to CSIR-CEERI, Pilani engineers/scientists at CSIR-CEERI, Pilani for the unit to operate properly for a period of minimum 3-5 (Three-Five) days after commissioning, free of cost.
6.12	Spares	Vendor shall quote mandatory spares and list of accessories if any, required for at least 10 (Ten) Years of trouble free operation; so as to ensure minimum system downtime. This shall be quoted as optional.
6.13	Obsolesce	Supplier shall provide details in the form of justification for non-obsolesce of the system, at least for 10 (Ten) Years. Also details regarding support for repairs, spares etc. even after obsolescence and protections against declaration of the system as obsolete in the form of up gradation to higher versions etc. shall be provided.
6.14	Manuals	Two sets of hardcopy in English of manuals for operations, maintenance & safety. Two sets of complete wiring diagrams/schematics etc. along with the delivery of unit. Training shall be provided at the time of delivery.
6.15	Supplier Status	The quote shall be from manufacturer or Authorized representative of manufacturer. In case of Authorized representative, valid authorization certificate shall be provided.

Figure 1: Tentative TWT Test Set Block Diagram

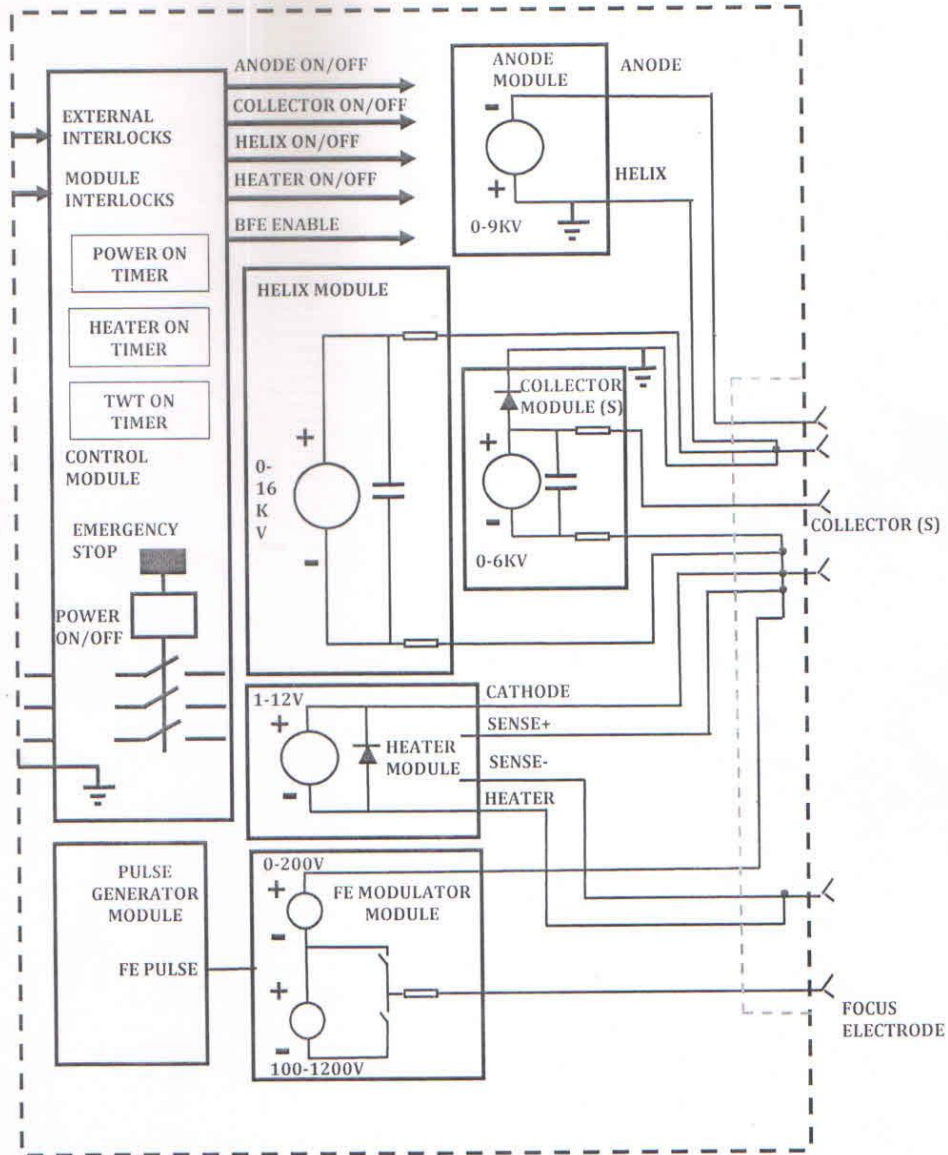


Figure 2: Tentative TWT Power Supply Distribution Diagram

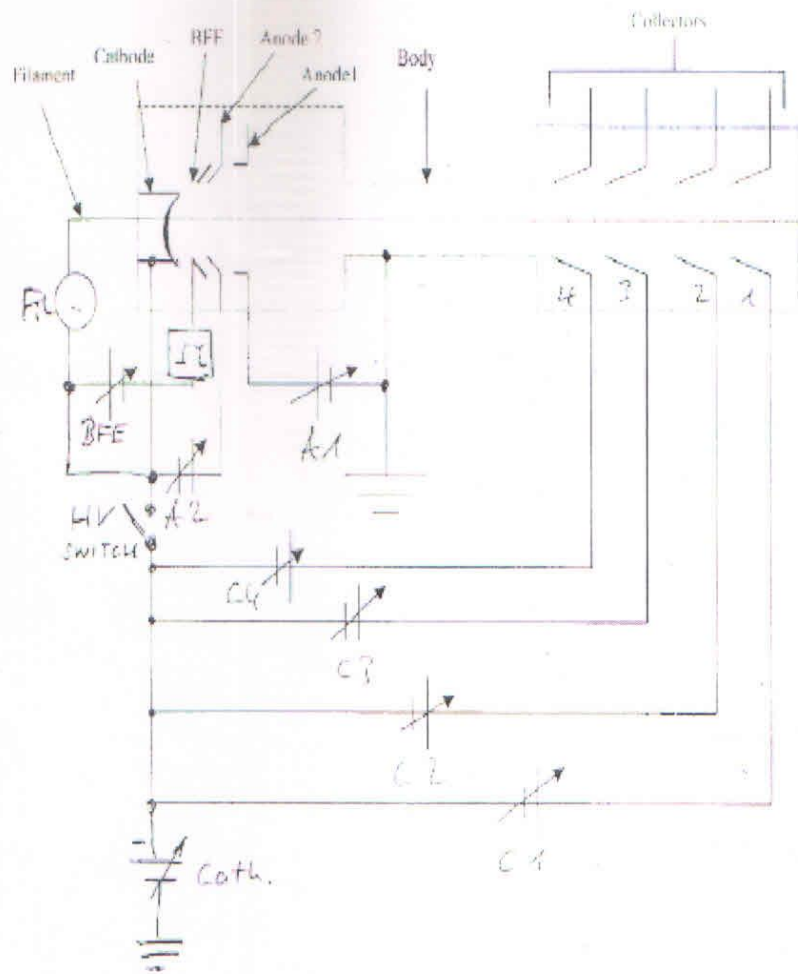
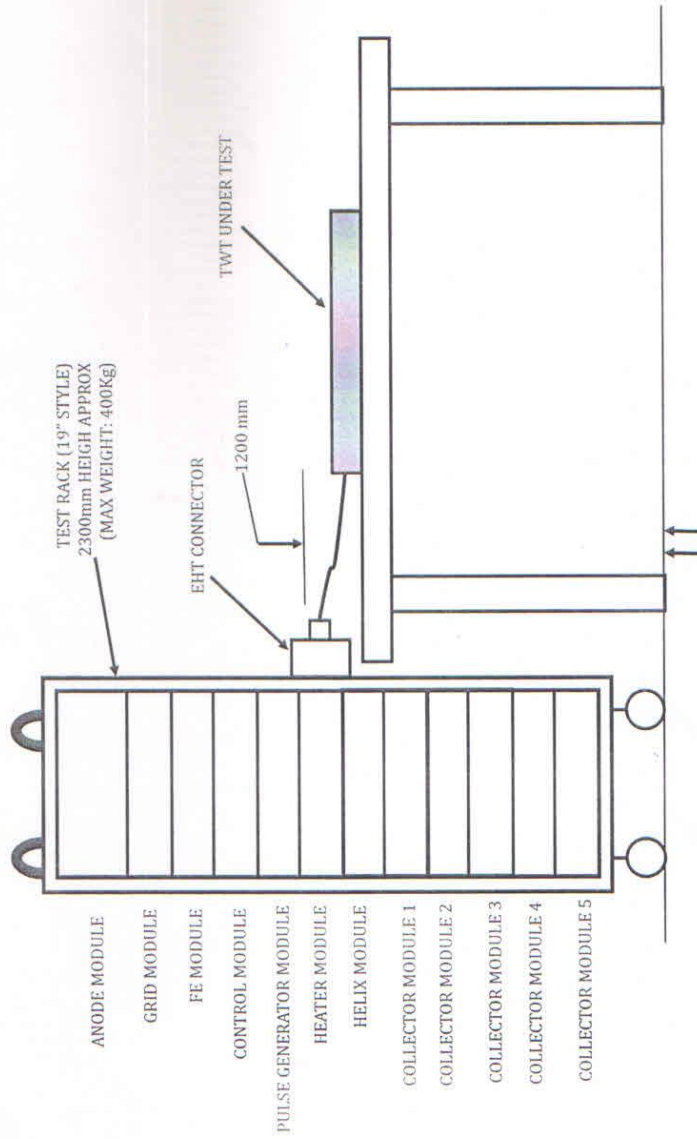


Figure 3: Tentative layout for TWT Test Set



FORMAT OF PRICE BID

1. Schedule to Tender No. :
2. Name of the Tender :
3. The tender shall remain valid for acceptance for 180 days from the date of opening of the tender
4. EMD in the form of Bank Guarantee/ D.D. for Rs. -----in favour of Director, CSIR-CEERI, Pilani (Rajasthan)

Sl. No.	Description of Item	Qty.	Rate
1	Manually controlled switch mode 15KV, 4 stage collector, Heater, Grid/FE, Anode TWT test power supply	1 No.	
			Ex-works cost of the item
			Discount
			Packing charges
			Training charges
			Installation/commissioning charges
			Delivery period
			Warranty
			Payment Terms
			Performance Bank Guarantee
			Penalty
			Total Ex-Works

LETTER OF QUOTATION

Quotation No.

Quotation For:

To

The Director
CSIR-CEERI
Pilani – 333031 (Rajasthan)

Sir,

I/We the undersigned hereby offer to supply “.....” at the rates stated in the attached Price Schedule. I/We have carefully gone through and have understood the instructions as contained in the invitation to quote and instructions to Contractors and the Specifications/Drawings enclosed herewith and agree to bound by the provisions contained therein.

2. I/We agree to hold this offer open up to and not to withdraw, amend or modify the same during the said period. I/We shall be bound by a communication of acceptance dispatched within the prescribed time. The Earnest Money in the form of Bank Guarantee for Rs. in favour of Director, CSIR-CEERI is enclosed herewith. I/We have understood that the quotation documents have been issued to me/us and I/We am/are permitted to quote in consideration of the stipulation on my/or our part after submitting the quotation. I/We will not respite from this offer or modify the terms and conditions thereof till In case I/We fail to observe to comply with the foregoing stipulation, the Earnest Money shall be forfeited to the CSIR-CEERI.

3. I/We agree that in the event of failure on my/our part commence the work under the contract, if awarded, within 15 days from the date of receipt of contract, the Earnest Money shall be forfeited to the Government without prejudice to either rights of the Government under the Contract.

4. The copy of the Specifications/Drawings and all other related documents received along with the invitation to quote and Instructions to Contractors are returned herewith duly signed and stamped as a token of acceptance.

Thanking you,

Date:

Yours faithfully,

Signature of the tenderer and the capacity
In which he sign i.e. sole proprietor etc.

Address

Telegraphic Address

MODEL BANK GUARANTEE FORMAT FOR FURNISHING BID SECURITY EMD

Whereas _____ (hereinafter called the “tenders”) has submitted their offer dated _____ for the supply of (hereinafter called the “tender”) against the Purchaser’s Tender Enquiry No. _____ KNOW ALL MEN by these presents that WE _____ of _____ having our registered office at _____ are bound unto _____ (hereinafter called the “Purchaser”) in the sum of for which payment will and truly to be made to the said Purchaser, the Bank binds itself, its successors and assigns by these presents. Sealed with Common Seal of the said Bank this day of _____ 20_____

THE CONDITIONS OF THIS OBLIGATION ARE:

1. If the tenderer withdraws or amends, impairs or derogates from the tender in any respect within the period of validity of this tender.
2. If the tenderer having been notified of the acceptance of his tender by the Purchaser during the period of its validity –
 - (a) If the tenderer fails to furnish the performance security for the due performance of the contract.
 - (b) Fails or refuses to accept/execute the contract.

We undertake to pay the purchaser up to the above amount upon receipt of its first written demand, without the purchaser (CSIR-CEERI) 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 the occurrence of one or both the two conditions, specifying the occurred condition or conditions. This guarantee will remain in force up-to and including 45 days after the period of tender validity and any demand in respect thereof should reach the bank not later than the above date.

Signature of the authorized officer of the bank

Name and designation of the officer

Seal, name an address of the Bank and address of the Branch.