



Due date: 21.02.2015

Sub: BHEL-HEEP/OPEN-TENDER (Procurement of PC Based System for IR&PI Monitoring with Distillate Flow)

Dear Sir,

The Heavy Electricals Equipment Plant (HEEP) located in Haridwar, India is one of the major manufacturing plants of Bharat Heavy Electricals Ltd. The core business of HEEP includes design and manufacture of large steam and gas turbines, turbo generators and so on. Government of India has a plan to add 70,000 MW in Five Year Plan (2007-2012) and more than 1,20,000 MW in next five year plan (2012-2017).

Sealed offers are invited in **Two-Part Bid** for procurement of **PC Based System for IR&PI Monitoring with Distillate Flow** from the manufacturers (registered as well as unregistered) for the supply of the following item:-

Tender No.	Item Description	Qty
NIT/E/4100/2014/4629Y1	ZZIS00114014 "PC Based System for IR&PI Monitoring with Distillate Flow as per Specification GRI/27/04/2014-15"	1 No.

The tender documents can be down loaded from our web site www.bhel.com or www.bhelhwr.co.in or <http://eprocure.gov.in> submitted with requisite EMD and tender fee. Only those vendors who fulfill the Minimum Qualifying Requirements (as per Annexure-1) will be considered for further technical evaluation.

This notification shall be published in Indian News paper. **The last date for taking tender documents shall be 20.02.2015 & opening of tender shall be 21.02.2015.** Tenders will be received up to 1.45 P.M. on 21.02.2015 and opened on the same day at 2.00 P.M. in the Tender Room. **Please note that tender received after due date & time (1.45PM on 21.02.2015) will not be opened.** BHEL will not be responsible for any type of postal / courier delay.

Intending vendors must remit the tender fee of Rs. 2,000/- for indigenous vendors (or equivalent amount in foreign currency for foreign vendors) along with the requisite EMD ₹ 60,000/- (Rupees Sixty thousand only) in the form of bank draft while submitting the tender documents as detailed in "Instruction to Bidders", after down loading from this web site.

All Govt. of India / Central & State PSUs / State Govt. entities / Micro and Small Enterprises (Registered under SSI, NSIC, Khadi Board, DIC etc.) are exempted from submission of EMD. Further, Micro and Small Enterprises registered with NSIC are also exempted from submission of tender fee.

***Authorized trading houses/distributors have to submit a supplying Mill's authority certificate for participating in these tenders in original in the Mill's letter head duly signed by Mill's competent authority (with Full name, Designation, valid email & contact number) along with the offer. In absence of the above authority letter, offer from stockiest/ trading houses are liable for rejection**
BHEL reserve the right to visit the mill's prior to price bid opening. Vendors who are not registered with BHEL and participating in this tender shall submit duly filled-in Supplier Registration form which is available at BHEL web site [www. bhel.co.in](http://www.bhel.co.in).

Specification of the above item is available on our above website with links provided for all Specifications, & Annexure (At the end of this document). Other cross referred documents can either be physically collected from BHEL, Haridwar or can be obtained by email nandlal@bhelhwr.co.in or neel@bhelhwr.co.in against proof of draft of the tender fee in favour of BHEL, Haridwar. This draft is to be submitted along with offer. Amendments/Corrigendum, if any, will be hosted on our web site only. Other terms and conditions will be as per tender documents.

BIDS SHALL BE OPENED OF THOSE VENDORS ONLY WHO SHALL SUBMIT EMD AND TENDER FEE. [PLEASE SUBMIT SEPARATE DRAFTS FOR EMD AND TENDER FEE DRAWN IN FAVOUR OF BHEL, HARIDWAR IN ANOTHER ENVELOPE SUPERSCRIBED WITH BOLD LETTERS "EMD & TENDER FEE". THOSE VENDORS WHO ARE QUOTING ARE REQUIRED TO SUBMIT TENDER FEE at 2 PM on the due date in the presence of authorized representative of the bidders who may like to be present. The authorized representative should bring authority letter from their parent company (Manufacturer) for attending the bid opening.

KINDLY READ "INSTRUCTIONS TO BIDDERS" QUOTATION NOT IN ACCORDANCE WITH THE INSTRUCTIONS ARE LIABLE TO BE DISQUALIFIED AND IGNORED.



INSTRUCTIONS TO BIDDERS FOR OPEN TENDER

1. DEFINITION

- a. **Registered Vendors** - Are those who are registered with BHEL, Haridwar for Size/Weight of tendered item.
- b. **Un-registered Vendors** - Are those who are not registered with BHEL, Haridwar for Size/Weight of tendered item.

2. MANDATORY PRE-QUALIFICATION REQUIREMENTS FOR CRNGO/MAGNETIC STEEL SHEETS

Un-registered vendors shall be considered, if and only if, they meet the minimum qualification requirement and quality requirements as given below.

Following are the mandatory pre-Qualification requirement (Technical) for both the tenders. Offer of Vendors not meeting these requirements will not be considered.

Annexure-1

Suppliers should have experience of developing & supplying similar or one time engineered PC products involving hardware & software interface with in last 5 years as on the date of enquiry.

Following information should be submitted by supplier about the companies where similar facilities have been supplied. This is required from all the supplier for qualification of their offer.

- a. Name of the customer/company where similar facility have been supplied
- b. Complete postal address of the company
- c. Purchase Order No. ,Date, scope of supply and month&year of installation.
- d. Name and designation of contact person of the customer
- e. Phone, fax no. and e-mail address of the contact person of the customer
- f. Ink signed Performance Certificate from the customers regarding satisfactory performance of facility supplied to them(Original certificate or Through e-mail directly from customer). The original performance certificate may be returned after verification by BHEL, if required.

Vendors must confirm to above Minimum Qualifying Requirements.

3. **Validity of offer:** The offers shall be valid for a period of minimum of 90 days reckoned from the date of Part-I-Technical bid opening date. The rates so agreed shall be valid till completion of the contract or any extension thereof agreed with mutual consent.
4. **BIS Certification :** BIS certification is mandatory for PC/Laptop supplying mill for foreign suppliers. Offer in line with BIS certification shall only be considered for further evaluation and ordering.

NOTE: The requirement of individual items may be quite different - depending on confirm order by BHEL, changes in production schedule, customer requirements & other contractual issues etc. To cater this situation, it is proposed that full flexibility shall be available to BHEL to alter the quantity of item.

5. Clause by Clause acceptance

- A) Bidder shall confirm clause by clause acceptance to all the terms and conditions of the enquiry, Purchase specification GRI/27/04/2014-15 and bring out clearly deviations, if any from Terms and conditions contained in this Annexure- A(for import suppliers) and Annexure-B (for indigenous suppliers)
- A) **All testing requirement/general requirements as called in the purchase specification GRI/27/04/2014-15 must be part of the MTC to be issued by the Mill along with the supply.**



ESSENTIAL INSTRUCTIONS

1. Only those bids will be opened which have been submitted with requisite EMD & tender fee.
2. All un-registered vendors shall be approved by BHEL, if found suitable, on the basis of data furnished by them in "Supplier Registration Form" (SRF) by Foreign Vendors or Indigenous Vendors and "Non Disclosed Agreement"(NDA). Vendor (s) shall not be considered for part-II and ordering if not approved by BHEL. The Supplier Registration Form(SRF) can be downloaded from www.bhel.com
3. BHEL team may visit the vendor (s) works for verification of capability and capacity claimed in tender documents/offer (s).
4. The tenders shall be submitted in three parts
 - i. Part I - Techno -Commercial Bid,
 - ii. part II - price Bid &
 - iii. part III - Vendor Registration FormAs described below on or before the due date. Vendor Registration Form shall be submitted by unregistered vendors only.
5. **The Quotation should be from the Principal / Original Manufacturer, failing which the quotation is likely to be ignored. In Case the quotation is submitted through agent, the quotation must accompany original authorization letter.**
6. Any corrections / amendments shall be properly & fully authenticated with signature. No overwriting is acceptable.
7. In case of ordering, manufacturing plan should be submitted for BHEL approval.
8. Part-I containing techno-Commercial bid and part-III containing Vendor Registration Form will be opened on the date and time specified in the tender notice in the presence of those tenders who wish to attend.
9. Part-II (Price Bids) along with supplementary price bids, if necessary, will be opened at a later date of only those bidders whose techno-commercial bid has been found acceptable.
10. Suitability of delivery shall be the important criteria for evaluation of techno commercial bid and the bids falling within the delivery period and meeting the last delivery requirement. Any offers beyond this period shall be rejected.
11. **Evaluation of Bid: - The bid shall be evaluated**
 - a. **Cost to BHEL basis. (Basic Cost + Insurance + Transportation + Duty)**
 - b. **The loading, if any, on account of LD penalty, payment terms or any other cost determined at later stage, which shall be communicated to the vendor.**
 - c. **Exchange rate (TT selling rate of SBI) prevailing on the tender opening date (Part-I tender opening date) shall be taken for evaluation of the price bids under this tender.**
 - d. **Bids shall also be loaded maximum upto@ 10% for non-acceptance of penalty on account of delayed deliveries and also for any deviation in the payment terms from ones offered under this enquiry.**Note: In case the bid is only on CIF/CFR basis, evaluation will be done with offered CIF/CFR rates only.
12. Tenders when finalized shall be in the name of the bidder only and change of name during tender evaluation (without certificate from registrar of company) and after submission of the tender is liable to make the offer ineligible for participation.
13. **BHEL reserves the right to go for reverse auction. Vendors are requested to give their best price. In case of failure of reverse auction the paper bid shall be processed. Bidder should clearly indicate their acceptance for reverse auctioning in Annexure-A (for import suppliers) or Annexure-B(for indigenous suppliers). The bids of those vendors who do not agree for reverse auction may not be considered. The Terms & Condition for Reverse Auctioning are given in Annexure-2.**
14. Total weight -- /Gross / Net in Kg. & also package size essentially should be indicated if not exact then approximate.
15. BHEL will evaluate the technical bids against essential criteria/requirements. BHEL may seek clarifications, if required, from the qualified bidders only. These clarifications will be communicated to the eligible vendors. **The offers of those bidders, who are unable to respond in specified time frame, are likely to be ignored.**
16. **Replacement of Rejected goods:** Final inspection for acceptance of goods shall be at BHEL's works after receipt of material and results shall be binding on the Seller. In case of rejection due to non-compliance



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to agreed specification and for the reasons attributable to Vendor, the material shall be replaced by vendor free of charge on "F.O.R. BHEL works basis" including inter-alia cost elements such as total transportation, insurance, custom duty, port clearance charges & other taxes/levies etc. as applicable. The rejected goods shall be subsequently returned to the Vendor on their cost.

Materials supplied shall be covered under guarantee for a period of minimum one year. In case material fails during application at plant due to reasons attributable to non-conformance of electrical, chemical and mechanical standards the same should be replaced within two-three months from notice.

17. SETTLEMENT OF DISPUTES

- Indigenous Vendors: In all cases of dispute the matter shall be referred for arbitration to any arbitrator to be appointed by the Executive Director or any officer who is the administrative head of Bharat Heavy Electricals Ltd., at Haridwar. The venue of arbitration shall invariably be Ranipur Haridwar. The award of the arbitrator shall be final and binding on both the parties. The arbitrator shall have the power to extend, from time to time, the time for making his award with the consent of the parties.
- Foreign Vendors: In the event of any dispute or difference arising between the parties to this contract regarding execution of same or their respective rights and liabilities there under, the same shall except as otherwise expressly provided therein, be referred to the arbitration of the two arbitrators, one to be appointed by each party; or in the case of the said arbitrators not agreeing then an umpire to be appointed by the two arbitrators in writing before entering on that reference and provisions of the Indian Arbitration Act ,1940 or any statutory notification, or re-enactment therefore and rules framed there under from time to time shall apply to such arbitration . If the two arbitrators do not agree on the appointment of umpire, the nomination of the umpire shall be done by the International Chamber of Commerce, Paris(France).The decision of arbitrators, or in case of their not agreeing, that of the said umpire shall be binding both on seller and purchaser. The venue of the arbitration invariably be New Delhi.

18. JURISDICTION

All question, dispute or differences arising under, out of or in connection with the purchase order shall be subject to the exclusive jurisdiction of Haridwar courts.

19. OVER RIDING CLAUSE

All stipulations made in any correspondence other than those exchanged in regards to "instruction" in our tender documents / enquiry for submission of your offer, if at all shall be void to the extent they are repugnant to the conditions contained herein above and in the purchase order.

20. FINALITY OF MANAGEMENT DECISION

At all places in the preceding clauses BHEL Management's decision shall be final.

IN CASE YOU ARE NOT MAKING AN OFFER AGAINST THIS ENQUIRY, THEN PLEASE ARRANGE TO SEND A LETTER OF REGRET IF YOU HAVE COLLECTED THE TENDER DOCUMENTS FROM BHEL.



DETAILS OF COMPOSITION OF PART-I (TECHNO-COMMERCIAL BID), PART-II (PRICE BID) & PART-III (VENDOR REGISTRATION FORM)

PART-I (TECHNO-COMMERCIAL BID) shall comprise of following documents:

- a. Confirmation to Minimum Qualification Requirement as per Annexure-1
- b. Complete technical offer as per specification, drawings, technical requirement along with un-priced bid giving FOB or C&F term and delivery schedule.
- c. **Annexure –A(by import suppliers) and annexure-B (by indigenous Suppliers)** - Compliance sheet for technical/commercial terms and conditions for two parts tender.
- d. **Deviation with reference to specification/drawing, if any, should be clearly indicated on a separate sheet.**
- e. Details of activity outsourced.
- f. Copy of enclosed Quality Plans –

PART –II (Price Bid)

- a. Price bid with prices to be submitted as part-II of the tender.
- b. Prices should remain firm till the execution of the order.
- c. In case of foreign vendors, prices to be quoted on FOB basis separately. Loading port must be mentioned. Please note that **Ex-Works** price are **not** acceptable & offer shall not be considered. In case of Indigenous vendor, prices must be quoted on FOR- Destination- CPS-HEEP-BHEL basis.
- d. Insurance – Marine in case of foreign vendor & inland in case of Indigenous vendor shall be taken care by BHEL.
- e. **Prices are to be written in both Figures & Words. In case of any difference between the two, the figure written in words shall be considered for evaluation. No over writing in this is acceptable.**

Part-III - Vendor Registration Form (SRF) :(SRF-Foreign Suppliers or SRF-Indian Suppliers)

- a. The SRF (as applicable) duly filled up will be assessed for manufacturing capability quality systems being followed, organizational soundness and financial worthiness. The same shall be submitted with Part-I (Techno-Commercial Bid) by un-registered vendor only with BHEL, HEEP, Haridwar.

MARKING OF ENVELOPE:

- Each envelop is to be super scribed as “TENDER FOR (ITEM NAME) AGAINST TENDER NO.----- DUE ON -----
- Drafts for Tender Fee & EMD to be kept in one envelop – Envelop –A. On the Top of the envelope, please write Draft No., Issuing Bank Details & Amount. Those vendors who are quoting for more than one tender must submit a statement in the envelopes of all those tenders giving details of all the tenders being quoted. However, the draft of each tender should be kept in individual tender envelop.
- Techno-Commercial - Part-I to be kept in another envelop – Envelop-B & to be marked as Techno-Commercial Offer.
- Vendor Registration Form - Part –III to be kept in another envelop – Envelop – C & to be marked as Vendor Registration Form.
- Price Bid – Part-II to be kept in another envelop – Envelop-D & to be marked as Price Bid.
- Envelop-A, Envelop-B, Envelop-C & Envelop-D are to be kept in one envelop super scribed as above

Envelopes not marked as above are liable to be ignored and will not be opened.



TERMS AND CONDITIONS OF REVERSE AUCTIONING

Against this enquiry for the subject item /system with detailed scope of supply as per enquiry specifications, BHEL may resort to "REVERSE AUCTION PROCEDURE" i.e., ON LINE BIDDING ON INTERNET.

- For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
- BHEL will engage the services of a service provider who will provide all necessary training and assistance before commencement of on line bidding on internet.
- BHEL will inform the vendor in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
- Business rules like event date, time, start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
- Vendors have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
- BHEL will provide the calculation sheet (e.g., EXCEL sheet) which will help to arrive at "Total Cost to BHEL" like Packing & forwarding charges, Taxes and Duties, Freight charges, Insurance, Service Tax for Services and loading factors (for non-compliance to BHEL standard Commercial terms & conditions) for each of the vendor to enable them to fill-in the price and keep it ready for keying in during the Auction.
- Reverse auction will be conducted on scheduled date & time.
- At the end of Reverse Auction event, the lowest bidder value will be known on the network.
- The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
- Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of vendor to conduct business with BHEL as per prevailing procedure.
- In case BHEL decides not to go for Reverse Auction procedure for this tender enquiry, the Price bids and price impacts, if any, already submitted and available with BHEL shall be opened as per BHEL's standard practice.

Terms & Conditions for Two Part Tender enquiry

COMPLIANCE SHEET FOR TECHNICAL/COMMERCIAL TERMS AND CONDITIONS

Enquiry No. NIT/E/4100/2014/4629Y1

Due date: 21.02.2015

BHEL Standard Terms	Vendor's Acceptance
<p>1. Payment terms: 80% through “Cash against Document (CAD)”. And balance 20% on issue of Erection and Commissioning Certificate and submission of PBG of 20% of total PO value in BHEL prescribed format from any consortium bank of BHEL and valid for 30 days beyond guarantee period. E&C certificate shall be issued on satisfactory completion of erection, commissioning, job proving, performance tests, and training to operators etc. as envisaged in PO.</p> <p>All bank charges outside India will be to the Beneficiary's account.</p> <p><u>As a policy BHEL doesn't accept advance payment.</u></p>	
<p>2. Delivery Terms: Goods shall be dispatched on FCA basis. In case of FCA contract, vendor have to make the shipment through BHEL's authorized freight forwarder, unless agreed otherwise.</p> <p>Bidders shall indicate in the Technical bid the Air freight considered over the FCA rates for delivery to- International Air Port, New Delhi.</p> <p>Note:- BHEL reserves the right to place the order either on FCA basis or CIF basis. Port congestion charges and /or terminal handling charges enroute till the cargo is delivered at Destination port shall be borne by the Seller only.</p>	
<p>3. Delivery period: Deliveries shall be within 30 month from placement of order and acceptable with mutual consent between buyer and seller.</p> <p>Delivery period for the purpose of contractual delivery shall be taken as the date of Mill Test certificate/Bill of lading.</p>	
<p>4. Taxes and Duties: All taxes and duties levy-able outside India for overseas supplier shall be to the bidder's account and the same will not be borne by BHEL under any circumstances.</p>	
<p>5. Transit insurance will be arranged by BHEL for which immediate intimation of dispatch is required as indicated in purchase order.</p>	
<p>6. Inspection and Test Certificates:</p> <p>a. BHEL reserves the right to get the material source inspected through it's own Engineers / Customer / Third party inspection agency.</p> <p>b. Vendor should ensure that the Test certificates (TC) issued by them must include Purchase Order no., Customer name i.e., M/s BHEL, Haridwar. Test certificates should cover results of tests for Mechanical/ Electrical/Chemical properties as per specification.</p>	
<p>7. Levy of penalty for delayed deliveries :-</p> <p>In case of delay in supply of material, with respect to the deliveries stipulated in purchase order , unconditional penalty shall be imposed on the vendors at the rate of half percent per week or part thereof, of the value of the material delayed, subject to maximum of 10% of the value of goods delayed. BHEL also reserves the right to</p>	

Annexure-A (For Foreign Suppliers)

<p>cancel order in event of unreasonable delay and procure the same from other vendors at the risk and the cost of the original vendor.</p> <p>Bids shall be loaded @ ½ % per week with maximum of 10%, for the purpose of bid evaluation in the event of bidder not accepting the penalty clause (partly or fully).</p>	
<p>8. Import Supply:</p> <p>a) As per the Indian Law, all consignments being imported into India by air/sea require a phytosanitary certificate from the country of origin-if articles have been packed with packaging materials. This is mandatory.</p> <p>Packaging material means any kind of material of plant origin used for packing which include hay, straw wood shavings, wood chips, saw dust, wood waste, wooden pallets, dunnage mats, wooden packages, coir pith, peat or sphagnum moss etc.</p> <p>Please confirm in your offer/dispatch documents that the required phytosanitary certificate will be submitted.</p> <p>b) Country or origin certificate: Vendor to furnish the country of origin certificate from Chamber of Commerce with dispatch documents.</p>	
<p>9. Documentation:</p> <p>a. Seller shall send one copy of non-negotiable documents consisting of Invoice, Packing list, Certificate of Country of Origin and Bill of Lading (B/L) by e-mail addressed at neel@bhelhwr.co.in and also at mssea@bhelrmb.co.in.</p> <p>b. One set of above mentioned documents including Original Test Certificate and preferably 1st Original B/L shall be sent by Courier addressed to AGM (Purchase) of relevant BHEL Unit for the dispatch of goods.</p> <p>c. 2nd and 3rd Original of B/L shall be negotiated for payment through bank</p>	
<p>10. Foreign Suppliers:</p> <p>a). Dispatching port & Country to be mentioned essentially</p> <p>b). Specifically confirm your agreement to air freight the material at your cost in case the delivery is delayed beyond 4 weeks. It is in addition to the penalty for delayed delivery.</p>	
<p>11. While submitting your bids please clearly indicate:</p> <p>(a) Expected Weight of goods net and gross in Kg (lots wise)</p> <p>(b) The size of packed goods (if not exact then approximate.)</p>	
<p>12. The vendor shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement.</p>	
<p>13. ORDER ACCEPTANCE: Order acceptance (ink-signed) must be submitted within 20 days from the date of PO.</p>	
<p>14. Please note no revision in the prices or submission of supplementary price bid will be allowed during the validity of the offer. However if there is any change by BHEL w.r.t. original specifications/ requirement/ scope/terms and conditions, the bidders may be asked by BHEL to submit only the price impact bid for such changes only</p>	
<p>15. All envelopes to be marked with whether “Priced Bid” (Part – 2) or “Un-Priced Bid Cum Techno-Commercial Bid” (Part – 1). The replica of Priced Bid (without prices)</p>	

Annexure-A (For Foreign Suppliers)

would be necessarily submitted along with Part-1 of the offer.	
16. Pl. Confirm that the prices will remain firm during the entire validity and execution of the Project	
17. Test Certificate/calibration certificate of the instrument traceable to national/international standard shall be provided along with dispatch documents.	
18. Guarantee certificate as per BHEL Specification shall be provided along with dispatch documents.	
19. Pre Inspection shall be done by BHEL	
20. Operation and service manuals shall be provided along with consignment.	
21. Commissioning shall be done at our works free of cost	
22. Acceptance for finalization of price through REVERSE AUCTION (E bidding) instead of opening of sealed price bid i.e. Part II	
<p>Note: Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the tender enquiry and offer of bidder.</p> <p>Vendors are requested to comment on each applicable clause and write as “NA” if not applicable. Please attach this sheet with your techno-commercial offer.</p> <p>Signature with stamp</p>	

Terms & Conditions for Two Part Tender enquiry

COMPLIANCE SHEET FOR TECHNICAL/COMMERCIAL TERMS AND

CONDITIONS Enquiry No. NIT/E/4100/2014/4629Y1

Due date: 21.02.2015

BHEL Standard Terms	Vendor's Acceptance
<p>1. Payment terms: Payment to all the vendors shall be made as per BHEL standard payment terms i.e., "80% of Supply value + 100 % Taxes & Duties to be paid against dispatch documents through bank and balance 20% of supply value + E&C charges (all the services provided at BHEL) will be paid after satisfactory erection & Commissioning and submission of PBG of 20% of total PO value in BHEL prescribed format from any consortium bank of BHEL and valid for 30 days beyond guarantee period.</p> <p><u>As a policy BHEL doesn't accept advance payment.</u></p>	
<p>2. Delivery Terms: Please submit your offer on F.O.R. BHEL Hardwar basis with transit insurance to BHEL's account only.</p>	
<p>3. Delivery period: Deliveries shall be within 3 month from placement of order and acceptable with mutual consent between buyer and seller.</p> <p>Delivery period for the purpose of contractual delivery shall be taken as the date of GR/Pre-inspection.</p>	
<p>4. Taxes and Duties: All taxes and duties shall be payable extra as applicable.</p>	
<p>5. Transit insurance will be arranged by BHEL for which immediate intimation of dispatch is required as indicated in purchase order.</p>	
<p>6. Inspection and Test Certificates:</p> <p>a) BHEL reserves the right to get the material source inspected through it's own Engineers / Customer / Third party inspection agency.</p> <p>b) Vendor should ensure that the Test certificates (TC) issued by them must include Purchase Order no., Customer name i.e., M/s BHEL, Haridwar. Test certificates should cover results of tests for Mechanical/Electrical/Chemical properties as per specification.</p>	
<p>7. Levy of penalty for delayed deliveries :-</p> <p>In case of delay in supply of material, with respect to the deliveries stipulated in purchase order / LC, unconditional penalty shall be imposed on the vendors at the rate of half percent per week or part thereof, of the value of the material delayed, subject to maximum of 10% of the value of goods delayed. BHEL also reserves the right to cancel order in event of unreasonable delay and procure the same from other vendors at the risk and the cost of the original vendor.</p> <p>Bids shall be loaded @ ½ % per week with maximum of 10%, for the purpose of bid evaluation in the event of bidder not accepting the penalty clause (partly or fully).</p>	
<p>8. Documentation: One set of Original ink signed Test Certificates shall be sent by Courier addressed to AGM (Purchase) – BHEL, after the dispatch of goods to purchasing Units.</p>	

Annexure-B(For Indigenous Suppliers)

9. While submitting your bids please clearly indicate: (a) Expected Weight of goods net and gross in Kg (lots wise) (b) The size of packed goods (if not exact then approximate.)	
10. The vendor shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement.	
11. ORDER ACCEPTANCE: Order acceptance (ink-signed) must be submitted within 20 days from the date of PO.	
12. Please note no revision in the prices or submission of supplementary price bid will be allowed during the validity of the offer. However if there is any change by BHEL w.r.t. original specifications/ requirement/ scope/terms and conditions, the bidders may be asked by BHEL to submit only the price impact bid for such changes only	
13. All envelopes to be marked with whether "Priced Bid" (Part – 2) or "Un-Priced Bid Cum Techno-Commercial Bid" (Part – 1). The replica of Priced Bid (without prices) would be necessarily submitted along with Part-1 of the offer.	
14. Pl. Confirm that the prices will remain firm during the entire validity and execution of the Project	
15. Test Certificate/calibration certificate of the instrument traceable to national/international standard shall be provided along with dispatch documents.	
16. Guarantee certificate as per BHEL Specification shall be provided along with dispatch documents.	
17. Pre Inspection shall be done by BHEL	
18. Operation and service manuals shall be provided along with consignment.	
19. Commissioning shall be done at our works free of cost	
20. Acceptance for finalization of price through REVERSE AUCTION (E bidding) instead of opening of sealed price bid i.e. Part II	
<p>Note: Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the tender enquiry and offer of bidder.</p> <p>Vendors are requested to comment on each applicable clause and write as "NA" if not applicable. Please attach this sheet with your techno-commercial offer.</p> <p>Signature with stamp</p>	

SPECIFICATION NO. : GRI/27/04/2014-15

SPEFICATION FOR INTEGRATED TEST EQUIPMENT INCLUDING CONTOL PANEL & DATA ACQUISITION SYSTEM FOR IR/PI MEASUREMENT/ANALYSIS WITH DISTILLATE FLOWING IN THE WINDING

This equipment is required for measurement/analysis of IR/PI and charging and discharging DC current in 660 MW and higher rating water cooled generator stator windings with distillate flowing in it. This equipment shall provide interface for HV circuit, measuring circuit, sequential logic and switching circuit along with timer provision. The equipment shall also include data acquisition system/computer and software for acquiring, plotting and analysis of charging and discharging DC current that is generated during IR/PI measurement at 1 kV applied voltage. The equipment panel will also house HVDC source and Nano / Pico Ammeter including data acquisition computer.

TECHNICAL SPECIFICATION: -

Basic circuit is as indicated in schematic-1. This panel should have rear/front panel connections on one distribution board as indicated in schematic-2. This distribution board should have provision of terminals for earthing, low voltage point connection and high voltage points to water header and winding. There should be provision of a switch/ link to connect LV end to earth or float it. There should be a very high degree of ohmic isolation (of the order of $10^{10} \Omega$) between any two terminals.

There should be provision of switch SW1 and SW2 such that initially while HV is being applied switch SW1 in series with ammeter remains open and SW2 in parallel to ammeter is closed. On reaching the HV to its full voltage timer after preset time should initiate action to close the switch SW1 first and after 5 seconds open the switch SW2. There should be a provision of interlock to avoid opening of SW2 unless SW1 is closed.

It may please be noted that the circuit schematic is such that Ammeter has to be connected at HV end of the machine/ generator winding. As such all the timer and switching circuits will have to be floating at high voltage.

ANALOGUE OUTPUT: -

When making measurements with object floating there should be provision to insert resistors in series with the object to earth. This is for providing of analog output with range switch (10 steps) for recording of charging / discharging current. Series resistor should be in the form of bank of resistors on a PCB. Resistor values to be incorporated are 330 Ω , 1k, 3.3k, 10k, 33k, 100k, 330k, 1M, 3.3M and 10M. Resistors should be carbon film resistors with 2% tolerance.

Connector: BNC

ANALOG OUTPUT PROTECTION: -

1. Differential Voltage : ≤ 50 V (peak)
2. Output be protected against short circuiting/ voltage overload even when instrument is switched off.

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HVDC source and Nano Ammeter:

HVDC source should have more than 3.0 kV regulated output with current capability of at least 40 mA at full voltage output. Output voltage of HVDC source should have very low ripple content in it.

Specification of HVDC Source:

- 1. Current Capability: better than 0-40 mA
- 2. Load Regulation: <150 mV (From 10-90% load variation)
- 3. Line Regulation: <100 mV ($\pm 10\%$ of 230 Volt Line variation)
- 4. Ripple/Noise Content: <5 mV pk-pk (upto 10 MHz)
- 5. Display for voltage / current: 4½ digit
- 6. Linearity of display: better than 0.5 throughout range
- 7. Short Circuit Protected
- 8. HV Test: Input to Body (Minimum 2.3 KV DC)
Output to Body (Minimum 8 KV DC)
- 9. Electrical Safety: As per Standard EN61010

Nano ammeter should have capability to measure current from 100 microampere to 1 nanoampere in different selectable ranges.

Both HVDC source and Nano Ammeter should have PC interface for data acquisition and control.

DATA ACQUISITION PC AND ANALYSIS SOFTWARE:

Data acquisition PC should be equipped with all the data acquisition cards/interfaces, driver software and end user analysis software. This system should be capable of automatic data acquisition during IR/PI measurement of applied DC Voltage, charging and discharging current for duration of measurement; and plotting of these currents v/s time for calculation of IR/PI measurement and estimation time constants etc. as a part of post processing of acquired data.

HOUSING CABINET:

All this arrangement should be in 19" rack be suitably housed in the control panel cabinet.

This standalone control panel cabinet should be suitable also for housing of HVDC source and nanoammeter to be supplied by you and data acquisition computer whose tentative and minimum dimensions are indicated in sketch 1.

Preferably control panel should be modular in design and easily dismantalleable/disassemblable and assemblable at site. This is for ease during transportation.

Overall view of control panel is given in sketch 1. Apart from this it should have following provisions

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- Front and back doors. Front door should have top half transparent with good quality perspex /Acrylic sheet or glass.
- earthing bolt or suitable provision
- Terminal boards
- Provision for lifting it with the help of over head cranes.
- Strip type Five Socket mains power supply board with in-built filter/spike suppressor
- Circular Cable inlets/outlets at bottom and at sides of ø 25 mm and with provisions to blank them when not in use

- A lockable compartment for storing accessories like HV cables, connectors, power supply leads, tools etc.
- Ventilating holes/slots at top and bottom of rear door along with mesh
- Colour (will be indicated later at the time of placement of order)
- A Proper Sealing arrangement in the doors to prevent vibration when closed.
- Conforming to NEMA 4 standards requirements.
- Industrial type finish with corrosion free and anti scratch , thermally cured paint

OPERATING CONDITIONS: The system should be able to perform satisfactorily under following operating environmental conditions.

- a) Ambient Temp. -10 to 45 ° C
- b) Humidity 0 to 95 %

POWER SUPPLY: i) It should be operable from Mains of 220 V ± 20 % at 50 ± 5 % Hz
 ii) Data Acquisition System should have 1 KVA rating UPS.

Accessories: Accessories like earthing cables and Screened HV cables suitable for HV applications upto 3.5 KV rating and with compatible ohmic isolation as indicated above be supplied. Current rating of the cable should be 100mA min. Cables should have suitable connectors terminated at each end. (Preferably good quality hook type connectors at instrument end and insulated crocodile clips at field/object end.

- i) Earthing Cables (20 meter length) 02 nos.
- ii) LV/HV cables (20 meter length) 03 nos.

TEST/CALIBRATION CERTIFICATES: The party will provide test certificate for this system.

SPECIAL TESTS: You may please indicate various tests carried out to ensure its reliability like Burn in test at max. ambient temperatures and humidity conditions indicated in operating conditions above. Tests certificates in support of these tests will also be required.

PREDISPATCH INSPECTION: Party shall offer the system for pre-dispatch inspection and performance testing.

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COMMISSIONING: Party will carry out commissioning of the system at our works.

GUARANTEE/WARRANTEE: The system be guaranteed/warranted for the onsite performance of at least 1 year period from the date of commissioning.

PRE-QUALIFICATION REQUIREMENT (PQR) :

Supplier should have experience of developing & supplying similar or one time engineered PC based products involving hardware & software interface with in last 5 years as on the date of enquiry.

The following information should be submitted by supplier about the companies where similar facility have been supplied. This is required from all the supplier for qualification of their offer.

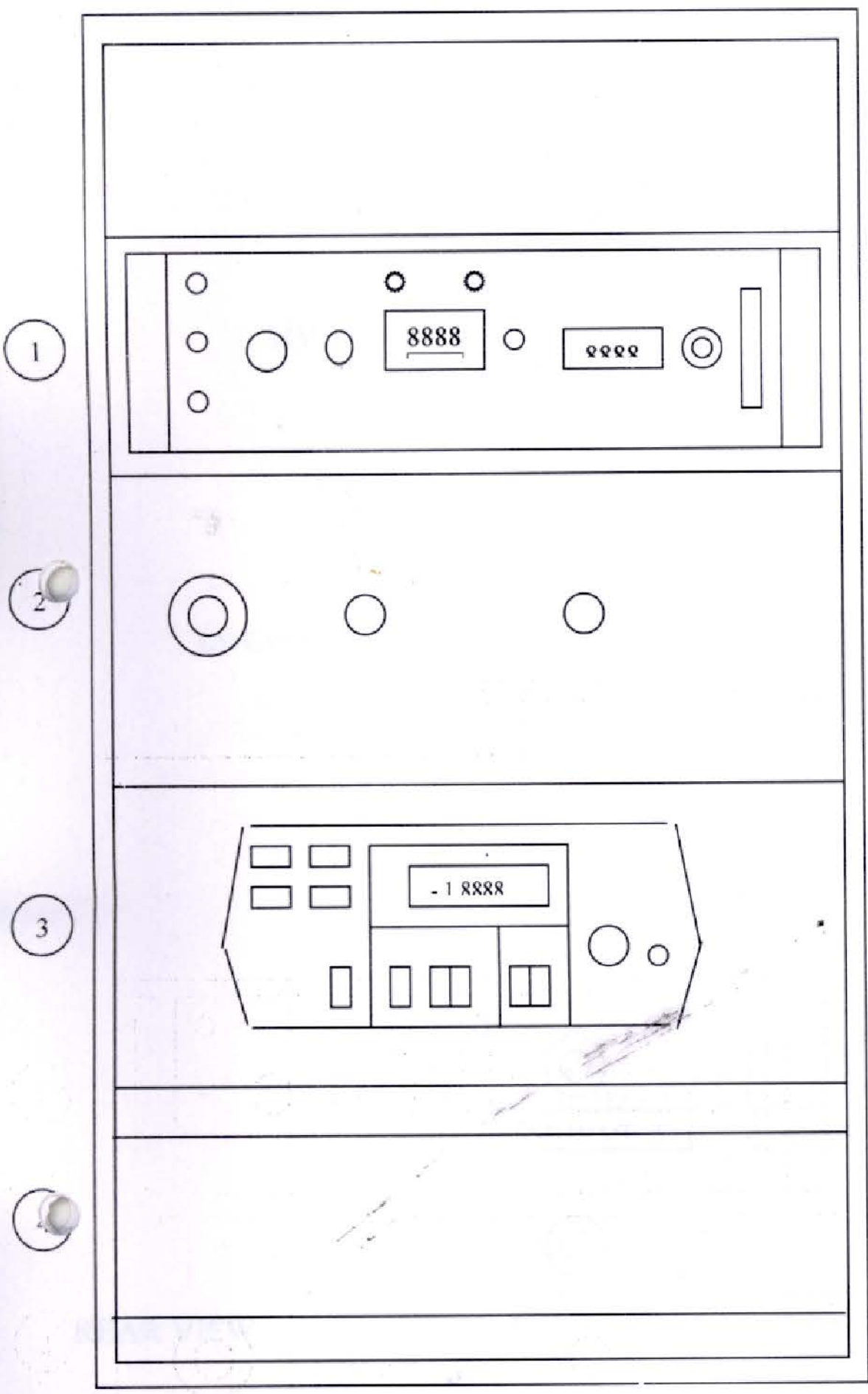
- Name of the customer/company where similar facility have been supplied.
- Complete postal address of the customer.
- P.O.No., date, scope of supply and Month & year of installation.
- Name and designation of contact person of the customer.
- Phone, Fax no. and e-mail address of the contact person of the customer.
- Ink signed Performance certificate from the customers regarding satisfactory performance of facility supplied to them (Original Certificate or Through E-mail directly from customer). The original performance certificate may be returned after verification by BHEL, if required.

GENERAL:

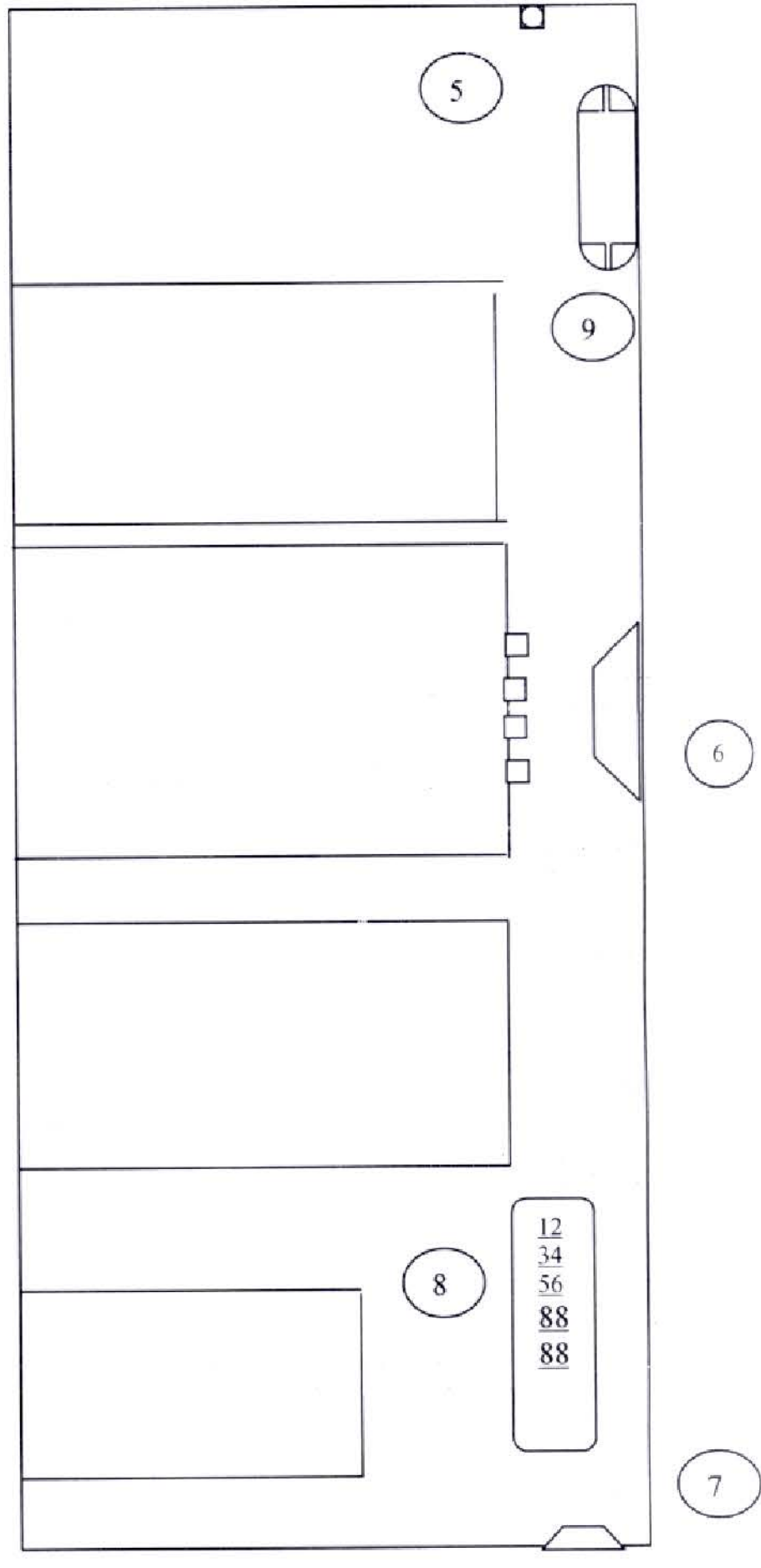
- Prices should be quoted for individual items separately to the extent possible. In case of PC industrial type of PC shall be considered.
- Different types of connector alongwith cables/ ribbon cables and adapters combinations may be quoted which are useful for increasing versatility of equipment and also field-testing as and when required.
- HVDC source and Nano / Pico Ammeter will be in the scope of supply of this system.
- Party should quote for set of spares for trouble-free operation of the system for a minimum period of five years.
- Party should indicate any other operating/ environmental requirement for safe and trouble-free operation of the system and also any specific requirements of the system for continuous operation over prolonged periods as may be required in process monitoring/control applications.
- Two sets of detailed operation and maintenance manual including circuit diagrams be supplied.

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SKETCH - 1 OF CONTROL PANEL / HOUSING CABINET



FRONT VIEW

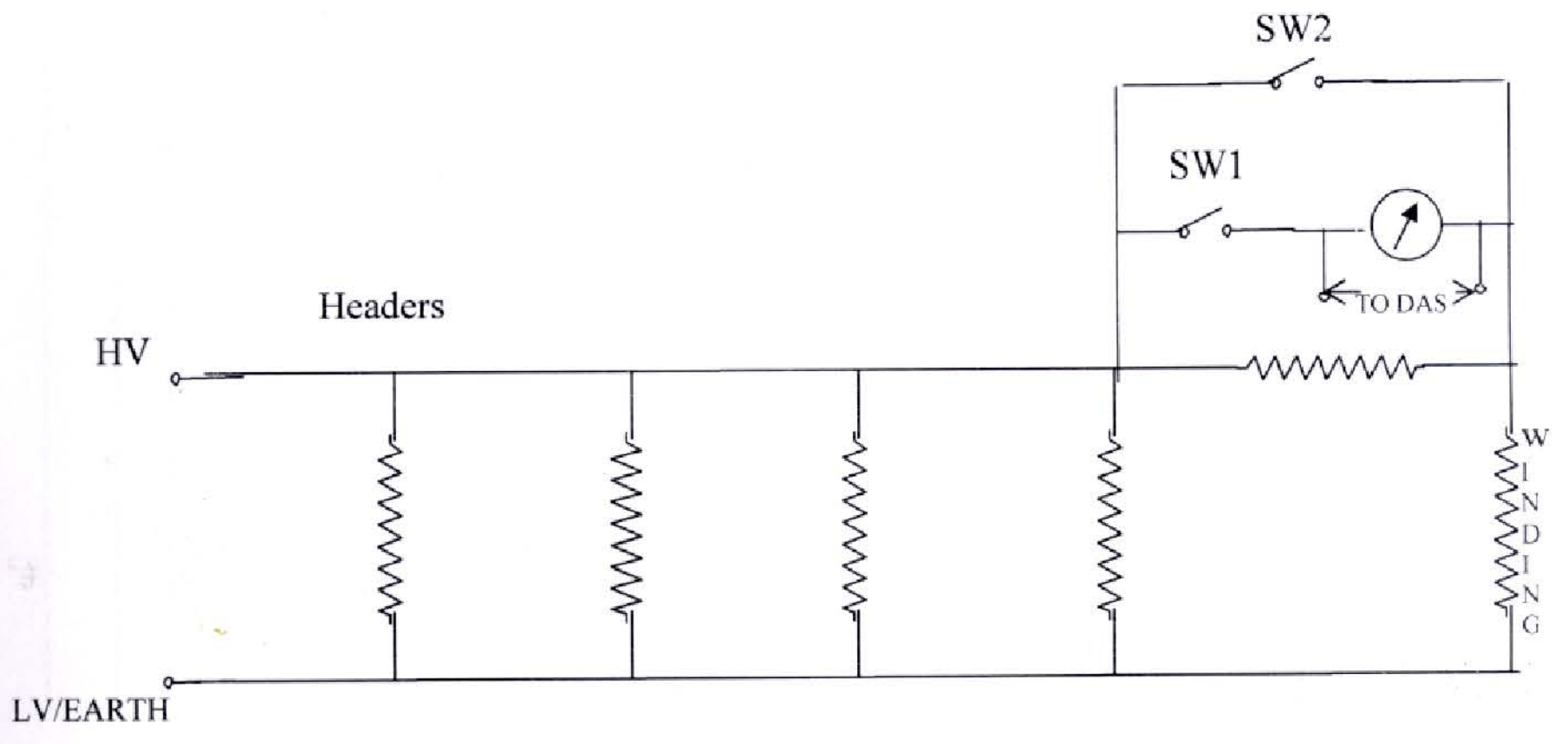


SIDE VIEW

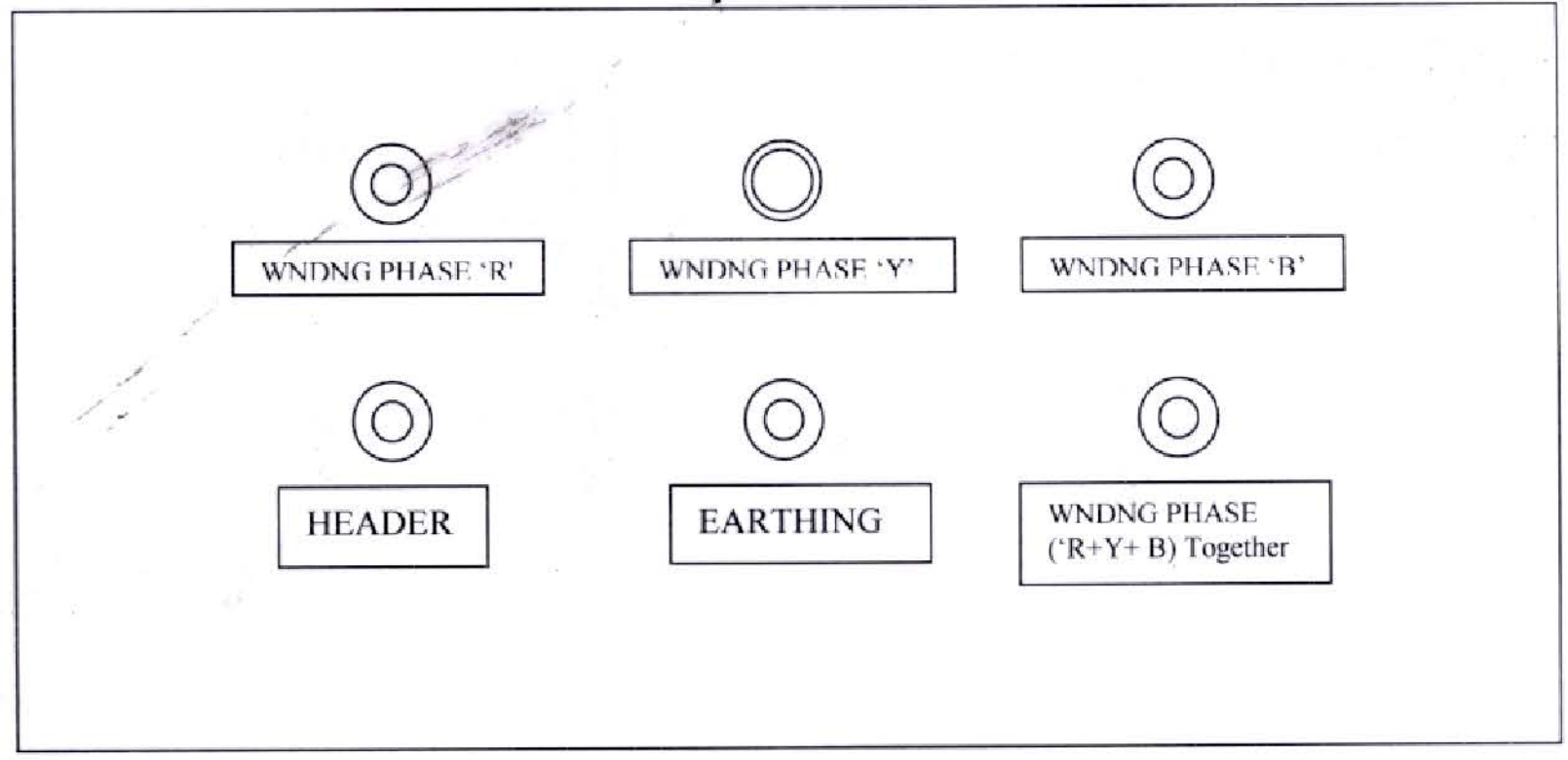
- Note: 1. HVDC Source 2. Timer & Switching Control 3. Picometer/ Nanometer
 4. Storage drawer 5. Panel Lighting Provision 6. LV&HV Cable Outlet
 7. Mains Cable Inlet 8. Terminal Board 9. Cooling Fan

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SCHEMATIC 1 - BASIC CIRCUIT



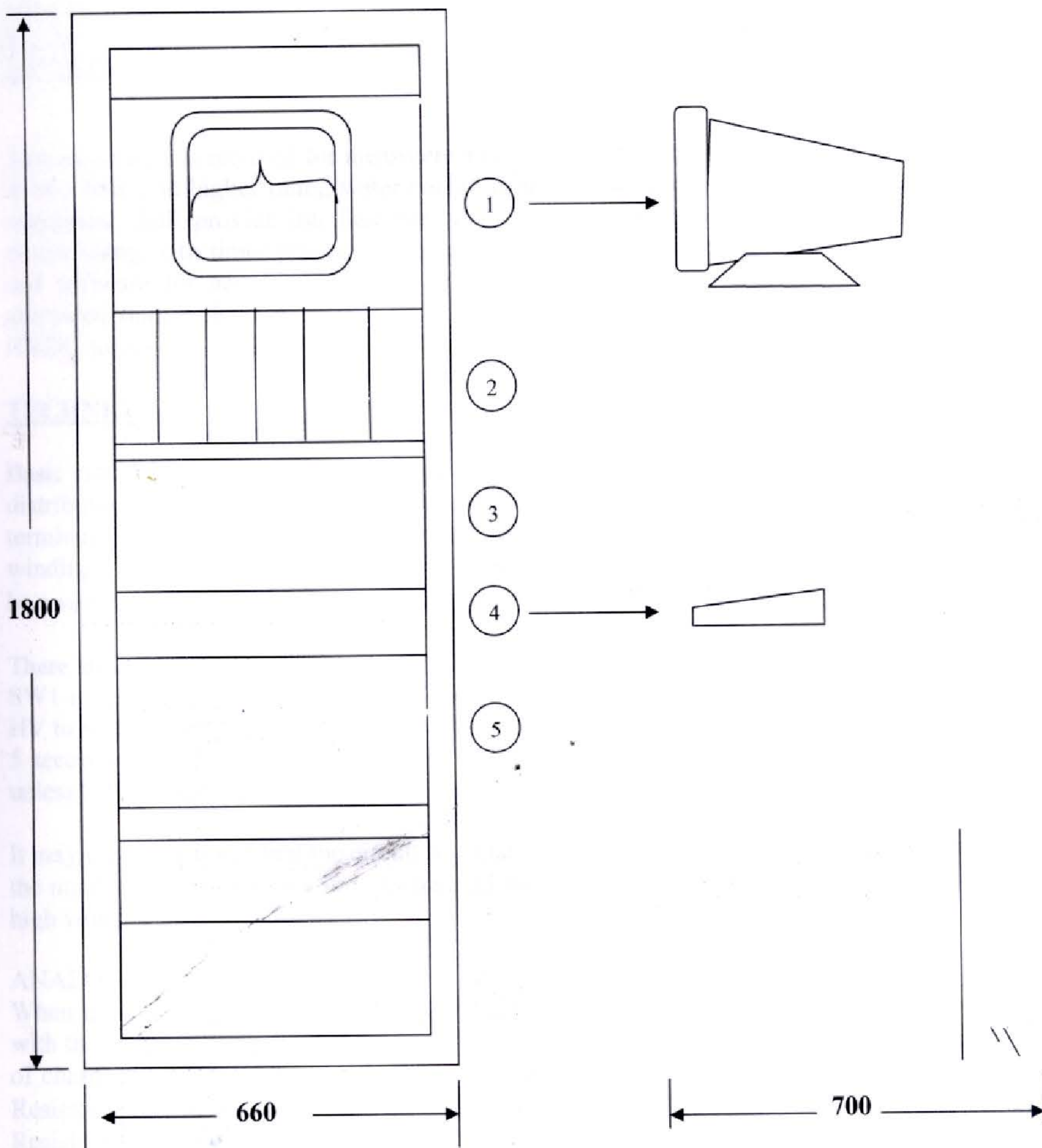
SCHEMATIC 2



REAR VIEW

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SKETCH OF CABINET



LEGENDS: 1.DISPLAY SCREEN 2.HVDC SOURCE & NANOMETER 3. PRINTER
 4. KEYBOARD 5. COMPUTER 6. DRAWER 7. CABLE INLET
 8. TERMINAL BOARD 9. COOLING FAN 10. LIGHT

Note: 1. Sketch is not to the scale
 2. All dimensions are in mm

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