



RD:DP:MPX:F-04

Ref: 291700621

BHARAT HEAVY ELECTRICALS LIMITED
CORPORATE RESEARCH & DEVELOPMENT DIVISION
VIKASNAGAR, HYDERABAD - 500 093, INDIA

PHONES:23774494 (EXT:9804)

FAX : 91 40 23770698

ENQUIRY

Date 08-07-2017

Enquiry for **Establishment of "150kW Traction Motor Test Rig"**

Enquiry No:291700621

Enquiry Date : 08-07-2017

Due Date: 08-08-2017

Indicative Delivery Date : 10-10-2017

Sl.No	Item Description	Unit	Qty
1	Design and Engineering of sub systems/Components	SET	1
2	Manufacture and Supply of Components/Material	LOT	1
3	Integration and Programming of 150kW Traction motor Test Rig	LOT	1
4	Erection and Commissioning, Demonstration and Training at site of installation	LOT	1

Please submit your quotation for the above material in sealed cover superscribed with enquiry no, enquiry date and due date subject to our enclosed terms and conditions. The quotations shall reach us on or before the due date by 12 noon. The tenders can also be dropped in the tender box kept at the security gate,BHEL R&D. In case you are not in position to submit the offer,please send reply suitably specifying the reasons.

Sl.No	Description	Document Ref.
01	Enquiry, General Terms & Conditions, Commercial Terms & Conditions etc.	Volume - 1
02	Technical specifications, Scope of Supply etc.	Volume - 2

Virendra Dixit
Sr Dy General Manager
virendra@bhelrnd.co.in

	ENQUIRY & QUALIFYING CRITERIA	Volume - 1 Enquiry No 291700621
Establishment of “150kW Traction Motor Test Rig”		

1	Tendor inviting officer / Authority, Designation and Address	Additional General Manager(MM) BHEL R & D, Vikas Nagar (Near Balanagar), Hyderabad -500093
2	Item Description - Qty	1) Design and Engineering of sub systems/Components - 1 SET 2) Manufacture and Supply of Components/Material - 1 LOT 3) Integration and Programming of 150kW Traction motor Test Rig - 1 LOT 4) Erection and Commissioning, Demonstration and Training at site of installation - 1 LOT
3	Enquiry Reference no.	291700621
4	Indicative Delivery Date	10-10-2017
5	Due date, Time and place for submission of tender	08-08-2017 upto 12 noon. Sealed Quotations shall be addressed to Additional General Manager(MM), BHEL R & D Division, Vikas Nagar (Near Balanagar), Hyderabad AP,India Pin - 500 093 Quotations can also be deposited in the Tender box located at Security Gate of BHEL R & D BHEL shall not be responsible for any postal/courier delay.
6	Place, Date and time of Tech.Bid opening	Tender Opening Cell (Sangam) BHEL R & D Office. 08-08-2017, 2 PM
7	Mode of Submission of Tender	Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below. 1) First Cover shall contain: - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid) as per annexure 2) Second cover shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. If the price bid was found later to be different from the unpriced pricebid format in any way, the offer will be rejected summarily. The rates shall be quoted both in figures and in words. The offers can also be submitted through e-mail and have to be sent in PDF format (files with PDF extension only). Files having extensions other than PDF like RAR, EXE, JPEG etc. and with external links will not be considered. They have to be sent to e-mail id: 'eoffers@bhelrnd.co.in' only. Copies should not be marked to anyone. If the offers are marked to anyone other than to eoffers, their offer will not be considered. The e-mail offers should have two attachments. 1) One attachment shall contain - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid), as per annexure 2) Second attachment shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.

	GENERAL TERMS & CONDITIONS (GTC)	Volume - 1 Enquiry No 291700621
Establishment of “150kW Traction Motor Test Rig”		

SL.No.	Clause	BHEL REQUIREMENT
1	Late Tenders	Tenders received after due date/time(12:00hrs) will not be considered
2	Discrepancy in words and figures	(a) If, in the price structure quoted for the required goods/ Services/ works, there is discrepancy between the unit price and the total price (which is obtained by multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly, unless in the opinion of the purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price corrected accordingly. (b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and (c). If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic error, in which case the amount in figures shall prevail subject of (a) and (b) above. (d) If there is such discrepancy in an offer, the same shall be conveyed to the bidder with target date upto which the bidder has to send his acceptance on the above lines and if the bidder does not agree to the decision of the purchaser, the bid is liable to be ignored.
3	Two Part bid clarifications	In the case of Two-part bid, the vendor should furnish technical and commercial clarifications, if any, within stipulated time mentioned, failing which, it will be construed that the vendor is not interested in the tender and BHEL shall not consider the offer for further evaluation.
4	Price Impacts	In the event of any bidder, after finalizing the technical specifications and scope of supply, opting to revise their original bid, they have to submit the Price-Impact only. The Original price bid along with Price-Impact bid shall be opened during price bid opening. Unsolicited price impacts will not be considered.
5	Price bid evaluation	All offers in price bid opening or reverse auction shall be evaluated in Indian currency based on unit price, packing & forwarding, taxes/duties, freight charges if any, exchange rate. Loading due to non-acceptance of our standard commercial terms will be evaluated as per the LOADING FACTORS form as enclosed along with the enquiry. The exchange rate declared by State Bank of India under TT Selling rate on the technical bid open date shall be adopted for evaluating foreign currency bids.
6	Packing	The supplier shall be responsible for the goods being properly and adequately packed so as to prevent any loss, damage or deterioration during transit.
7	Withdrawal	In case the supplier withdraws their offer before placement of order, BHEL reserves the right not to send next enquiry(ies). In case the supplier withdraws the quotation after its acceptance by BHEL or fails to supply the goods as per the terms and conditions of contract, or at any time repudiated the contract wholly or in part, BHEL shall be at liberty to cancel the Purchase Order and to recover from the supplier the extra cost and other loss, incidentals due to the breach of contract on the part of the supplier through risk purchase.
8	Risk Purchase	In case of default/late delivery, BHEL reserves the right to make alternate arrangement for procurement at suppliers risk and cost.
9	Banned List	The offers of the bidders who are in the banned list and the offers of the bidders who engage the services of the banned firms, shall be rejected. The list of banned firms is available on BHEL website www.bhel.com. Guidelines for suspension of business dealings with suppliers/contractors are available on www.bhel.com under supplier registration page
10	Over All L1	Order will be placed on overall L1 basis. Vendors should quote for all items, otherwise the offer will be rejected.
11	Additional Information	Suppliers are requested to visit our web site regularly for any updates and additional information, "All corrigenda, addenda, amendments, time extensions clarifications, etc. to the tender will be hosted on BHEL website only". The corrigendum will not be published in news paper.
12	Destination	Indian Vendors: Destination shall be Stores, BHEL R&D, Vikasnagar, Hyderabad-500093. Foreign Vendors: 1) BHEL R.O.D Office, Mumbai, India for sea consignments and 2) BHEL R&D, Hyderabad, India for air consignments.
13	Arbitration	Subject to the jurisdiction of Hyderabad/Secunderabad, Andhra Pradesh, India in respect of any suit or other legal proceedings relating this contract.
		CEBG shall be required for all POs where value (Supply +E&C) of each P.O. is estimated to be more than Rupees 20,00,000/- (INR). The successful vendor shall have to furnish a Contract Execution Bank Guarantee (CEBG) for 10% of the Total PO value in the prescribed format within 30 days from the date of P.O. but before L/C opening. CEBG shall be from one of the Consortium Banks of BHEL or from a reputed Bank and confirmed by any Consortium Bank of BHEL. All bank charges on account of issuance and

14	Contract execution Bank Guarantee(CEBG)-Capital	conformation of CEBG whether incurred in India or outside India will have to be borne by the vendor. CEBG shall be kept valid unit 30 days after the date of E&C Certificate, which will be issued on completion of Erection & Commissioning of equipment which includes erection, commissioning, job proving, performance test, training to operators etc. as prescribed in PO. If the supplier fails to submit the CEBG even with in 60 days from the date of PO, BHEL reserves the right to cancel PO & forfeit the EMD given by the supplier. In addition, in such case, action will be initiated in line with extant guidelines for Suspension of Business dealings with Suppliers.
15	Foreign Vendors	BHEL will deal directly with foreign vendors, where ever required, for procurement of goods.However, if the foreign principal desires to avail of services of an Indian agent,then foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of agency agreement (as per *). * The Agency Agreement shall specify 1) Agency commission, 2) Responsibilities of the agent, 3) Territory, 4) Agreement Period
16	Inspection	On receipt, the goods shall be subjected to inspection and our decision regarding the acceptability of the goods shall be final and binding on the suppliers.
17	Fraud Prevention Policy	The Bidder along with its associate/collaborators/sub-contractors/sub-vendors/consultants/service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website http://www.bhel.com and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.
18	Signing & Stamping	Documents of BHEL's all Terms and conditions submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder

Documents submitted with the offer shall be signed and stamped in each page of authorized representative of the bidder

Read and agreed for all the above general terms and conditions

Signature of the bidder with Seal & Date

	COMMERCIAL TERMS & CONDITIONS (CTC)	Volume - 1 Enquiry No 291700621
Establishment of “150kW Traction Motor Test Rig”		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Reverse Auction	BHEL reserves the right to go for Reverse Auction (RA) (Guidelines as available on www.bhel.com) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. Bidders to give their acceptance with the offer for participation in RA. Non-acceptance to participate in RA may result in non-consideration of their bids, in case BHEL decides to go for RA. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit 'Process compliance form' (to the designated service provider) as well as 'Online sealed bid' in the Reverse Auction. Non-submission of 'Process compliance form' or 'Online sealed bid' by the agreed bidder(s) will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com). The bidders have to necessarily submit online sealed bid less than or equal to their envelope sealed price bid already submitted to BHEL along with the offer. The envelope sealed price bid of successful L1 bidder in RA, if conducted, shall also be opened after RA and the order will be placed on lower of the two bids (RA closing price & envelope sealed price) thus obtained. The bidder having submitted this offer specifically agrees to this condition and undertakes to execute the contract on thus awarded rates. If it is found that L1 bidder has quoted higher in online sealed bid in comparison to envelope sealed bid for any item(s), the bidder will be issued a warning letter to this effect. However, if the same bidder again defaults on this count in any subsequent tender in the unit, it will be considered as fraud and will invite action by BHEL as per extant guidelines for suspension of business dealings with suppliers/ contractors (as available on www.bhel.com).	
2	Two part	Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below. 1) First Cover shall contain: - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid) as per annexure 2) Second cover shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. If the price bid was found later to be different from the unpriced pricebid format in any way, the offer will be rejected summarily. The rates shall be quoted both in figures and in words. The offers can also be submitted through e-mail and have to be sent in PDF format (files with PDF extension only). Files having extensions other than PDF like RAR, EXE, JPEG etc. and with external links will not be considered. They have to be sent to e-mail id: 'eoffers@bhelnrd.co.in' only. Copies should not be marked to anyone. If the offers are marked to anyone other than to eoffers, their offer will not be considered. The e-mail offers should have two attachments. 1) One attachment shall contain - Signed General Terms & Conditions (GTC) - Filled and Signed Commercial Terms & Conditions (CTC) - Filled and Signed Vendor Specifications against BHEL Specifications (Item wise) - Signed commercial bid - Copy of Price-bid with price(s) cells blank (un-priced price bid), as per annexure 2) Second attachment shall contain Price Bid Containing Price quotes, applicable taxes, installation and/or commissioning charges shall be spelt out clearly taking into account total charges rather than quoting vaguely such as charges per man-day or charges per engineer per day etc as per annexure. The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.	
		Payment 1) Through L/C: Please note Payment through Letter of Credit (L/C) is for foreign currency payments only. Where the payments are through L/C (L/C opening charges shall be loaded for landed cost evaluation), payment of Supply value shall be 80% on dispatch and 20% on issue of E&C Certificate. Payment of E&C Value shall be made against E&C certificate issued by BHEL. E&C certificate shall be issued on satisfactory completion of erection, commissioning, job proving, performance test, training to operators etc, and Submission of Performance Bank Guarantee (PBG). The L/C shall be opened by BHEL as per following: (i) With in 30 days of receipt of acceptable CEBG, an irrevocable unconfirmed L/C will be opened for 30% of the payment towards supply, due on shipment i.e. 24% of the Supply value of PO (30% of 80%) Not earlier than 60 days before the shipment date, the value of this irrevocable unconfirmed L/C would be enhanced from 24% to 80% of the Supply value of PO	

3	Payment terms - Capital	The above L/C can be negotiated after the Shipment against submission of B/L or AWB and such other documents as mentioned in the in the PO. The above L/C will be valid for a period extending 21 days beyond the shipment date for negotiation of documents. (ii) 15 days prior to the scheduled & confirmed arrival of the technicians of supplier with their names, an irrevocable unconfirmed L/C will be opened for a value equal to 20% of the Supply value of PO plus 100% of the E&C value of PO. The validity of L/C would be sufficient to cover the period required for the completion of E&C plus 21 days as negotiation period. This L/C can be negotiated after: (a) Completion of E&C of the equipment in BHEL and against E&C certificate issued by BHEL and (b) Submission of Performance Bank Guarantee (PBG) by Supplier in the prescribed Format valid for 30 days beyond the warranty period with an additional claim period of 2 months by Supplier from any of the Consortium Banks of BHEL for 10% of total PO Value in the prescribed Format. The PBG confirmation charges shall be borne by vendor. Under all circumstances, CEBG shall be kept valid till PBG becomes operational. 2 Direct Payment (foreign and Indian Suppliers): In case of direct payment , 80% payment of Supply value shall be made with in 45 days form the date of receipt of material at BHEL. Balance 20% of supply value plus 100% of the E&C portion of PO Value will be paid against E&C certificate issued by BHEL and Submission of Performance Bank Guarantee (PBG) by Supplier in the prescribed Format valid for 30 days beyond the warranty period with an additional claim period of 2 months by Supplier from any of the Consortium Banks of BHEL for 10% of total PO Value in the prescribed Format.. The PBG confirmation charges shall be borne by vendor. 3. Bank Guarantee and Loading against non acceptance of BHEL,s Payment Terms: If payment terms as mentioned by BHEL are not agreed by bidder, such bidder have to submit Bank Guarantee at the time of payment/opening of LC in the prescribed Format of the amount, exceeding 80% of the PO value, valid till issue of E&C Certificate for the equipment. However, in no case, payment against dispatch shall exceed 90% of the PO Value. Additionally, for any deviation sought including as mentioned above, in Payment Terms by bidder w.r.t. tender conditions, following loading shall be followed: (A) Base rate of SBI as applicable on the date of tender opening + 6%, for the amount & period of relaxation sought by bidder. (B) On account of payment through LC if insisted by bidder , bank charges shall also be loaded for the deviation in (i) opening of LC by BHEL and (ii) period and amount of LC as per prevailing bank rates.	
4	Validity of Offer	90 days from date of techno-commercial bid opening.	
5	LD Clause	Failure to supply the goods and/or Failure to carryout the services within the stipulated delivery date will attract a penalty of 0.5% per week or part thereof for the value of the undelivered portion of the purchase order subject to a maximum of 10% of the total order value. In case of non acceptance to this LD Clause, 10% of basic material cost will be loaded on the quoted prices while cost comparison.(Please refer the enclosed 'Loading Factors' sheet).	
6	PBG	PBG of 10% of total order value is to be submitted by the successful vendor and shall be kept valid upto guarantee period with additional claim period of 2 months there after. The offers of the suppliers not accepting to this clause will be rejected.	
7	Agency Agreement	Guidelines regarding dealing with Indian agents of foreign suppliers 1. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of services of an Indian agent, then the foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of agency agreement. 2. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of government of India, issued from time to time. 3. The agency agreement should specify the precise relationship between the foreign OEM and services to be rendered by Indian agent / associate, whether general in nature or in relation to the particular contract, must clearly be stated by the foreign supplier / Indian Agent. Any payment, which the Indian agent / associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee shall be brought out in record in the agreement and be made explicit in order to ensure compliance to the laws of the country. 4. Any agency commission to be paid by BHEL to the Indian agent shall be Indian currency. 5. When ever Indian agents are representing on behalf of their principals, the relevant authorization letter and agreement copy to be enclosed along with technical bid to consider the offer.	
		<u>FOR INDIAN SUPPLIES :</u> Suppliers are requested to quote within the delivery date mentioned in the enquiry. They shall also mention one of the following delivery periods compulsorily. 1) Delivery Period from date of Purchase order ===== 2) Delivery Period from receipt of material / input data / drawings etc. from BHEL===== (if applicable) 3) Delivery Period from receipt of approval of design documents / drawings etc. by BHEL===== (if applicable) However BHEL shall inform the vendor about rejection of the offer before price bid opening in case of not	

8	Delivery Period	meeting the delivery requirements of BHEL. FOR FOREIGN SUPPLIES : Suppliers are requested to quote within the delivery date mentioned in the enquiry. They shall also mention one of the following delivery periods compulsorily. 1. Delivery Period from date of Purchase order :===== 2. Delivery Period from receipt of input data / drawings etc. from BHEL ===== (if applicable) 3. Delivery Period from receipt of approval of design documents / drawings etc. by BHEL ===== (if applicable) 4. Delivery Period from date of LC Opening ===== (if applicable) 5. Delivery Period from date of PO acceptance ===== However BHEL shall inform the vendor about rejection of the offer before price bid opening in case of not meeting the delivery requirements of BHEL. Pl. mention any other issues/constraints like export clearance etc. explicitly, if any =====	
9	Nature of Vendor submitting the Offer	OEM / Agent / Representative / Dealer / Distributor / Stockist / Trader / Reseller / Channel Partner/ System Integrator / Any Other (Pl. Specify)	
10	Foreign Suppliers without Indian Agent	To be quoted in Foreign Currency. Purchase Order will be placed on Foreign Supplier.	
11	Foreign Principal availing services of an Indian Agent	Foreign principal should ensure compliance to regulatory guidelines which require mandatory submission of Agency agreement. (as per *) To be quoted in Foreign Currency. Purchase order will be placed on Foreign Supplier. Agency Commission will be paid to Indian Agent in Indian rupees. * The Agency Agreement shall specify 1) Agency commission, 2) Responsibilities of the Agent, 3) Territory, 4) Agreement Period	

Note : All the clauses of the above format should be filled and submitted with the Techno Commercial Bid (Part-1). The filled in BHEL Commercial terms & Conditions format submitted with technical bid, responding to all the clauses duly signed with seal **only shall be considered**. Any other Commercial terms & conditions of bidders entered else where in their offer shall not be considered and are liable for rejection.

Read and understood the above commercial terms and conditions

Signature of the bidder with Seal & Date

	OTHER TERMS & CONDITIONS	Volume - 1 Enquiry No 291700621
Establishment of “150kW Traction Motor Test Rig”		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Micro & Small Enterprises (MSEs)	MSE suppliers can avail the intended benefits only if they submit along with offer, UAN Udyog Aadhaar no. Non submission of such documents will lead to consideration of their bids at par with other bidders and MSE status of such suppliers shall be shifted to Non MSE supplier till the supplier submits these documents.	
2	Regarding concessional duties	Concessional duties/taxes, if any, available to BHEL at price bid opening shall be taken into account for evaluating landed cost calculation. Hence suppliers are requested to submit their bids clearly stating applicable taxes/duties. However, all suppliers have to accept Concessional duties in case if the same is available to BHEL at dispatch.	
3	Details require	IT Permanent Account No. (PAN): GSTIN Registration SCstatus: Tax type:- GST/SGST/IGST/UGST GSTIN No: GSTIN No. Issuance Date : Provisional/ Final Registration : Name of the Contact Person : Contact Phone / Mobile : Email id for correspondence : Address with PIN code and State:	
4	Force Majeure clause	If at any time during the continuance of the contract the performance in whole or in part by either party of any obligations under the contract is prevented or delayed by reason, of any war, hostilities, acts of the public enemy, civil commotion, sabotage, fires, explosions, epidemics, quarantine, restrictions or acts of GOD (hereinafter referred to as events) and notice of happening of any such events is given by either party to other within twenty one days from the date of occurrence thereof then neither party shall by reason of such events be entitled to terminate the contract. If the performance in whole or part of any obligation under this contract is prevented or delayed by reason of occurrence of such events, then claims for extension of time shall be granted for period considered reasonable by the purchaser subject to prompt notification by the seller to the purchaser the particulars of the events, if required with supporting evidence. Any waiver of time in respect of partial instalment shall not be deemed to be a waiver of time in respect of remaining deliveries	
5	PBG	Submission of Performance Bank Guarantee (PBG) by Supplier in the prescribed Format valid for 30 days beyond the warranty period with an additional claim period of 2 months by Supplier from any of the Consortium Banks of BHEL for 10% of total PO Value in the prescribed Format. The PBG confirmation charges shall be borne by vendor.	
6	Erection & Commissioning Charges	Erection & Commissioning Charges value as per clause no. 2.0 - E&C Activities will include services to be rendered at BHEL Integration and Programming, Erection and Commissioning, Demonstration at site of installation , Post-installation training etc. The estimated percentage value of these charges as per BHEL is 19% of basic equipment price. The Supplier should quote these charges as % of basic equipment price in point no. 2.5 of unpriced bid format of technical bid. Only in case where quoted value is less than the value (in %) specified above or separate value is not mentioned in the offer, value for E&C portion shall be deemed to be considered as the value indicated above & accordingly supply value will be adjusted from that quoted value and balance will be released as E&C payment as per Payment terms of enquiry.	

Signature of the bidder with Seal & Date

		ITEM SPECIFICATIONS		Volume - 2 Enquiry NO 291700621
Establishment of “150kW Traction Motor Test Rig”				
SL.No.	Item			
1	Design and Engineering of sub systems/Components			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	Design and Engineering of sub systems/Components	Design and Engineering of sub systems/Components required for converting the existing Synchronous Generator test facility into a Traction motor test facility. Specification as per document , Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017	
2	Manufacture and Supply of Components/Material			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	Manufacture & supply of components/Materials	Manufacture & supply of components/Materials required for converting the existing Synchronous Generator test facility into a Traction motor test facility. Specification as per document , Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017	
		Manufactures Test Certificate	Manufacturer's Test Certificate required and shall be provided before dispatch.	
		E&C and Warranty	E&C Charges Shall be quoted separately if the scope of supply/enquiry requires erection and commissioning. All supplied items to be provided with warranty for 12 months from the date of receipt at our stores if scope of enquiry is supply only. In case of items involving erection and commissioning, supplier shall provide warranty for 18 months from date of receipt at our stores or 12 months from the date of completion of erection and commissioning whichever is earlier.	
		Accessories	Offer shall include all the accessories required for normal operation of equipment.	
3	Integration and Programming of 150kW Traction motor Test Rig			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	Integration & Programming of components/sub-systems	Integration and Programming of components/sub-systems required for converting the existing Synchronous Generator test facility to Traction Motor Test Rig. Specification as per document , Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017	
4	Erection and Commissioning, Demonstration and Training at site of installation			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
			E&C, Demonstration & Training at	

1	Erection and Commissioning, Demonstration and Training at site of installation	site of installation. Specification as per document , Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017	
	Manufactures Test Certificate	Manufacturer's Test Certificate required and shall be provided before dispatch.	
	E&C and Warranty	E&C Charges Shall be quoted separately if the scope of supply/enquiry requires erection and commissioning. All supplied items to be provided with warranty for 12 months from the date of receipt at our stores if scope of enquiry is supply only. In case of items involving erection and commissioning, supplier shall provide warranty for 18 months from date of receipt at our stores or 12 months from the date of completion of erection and commissioning whichever is earlier.	
	Accessories	Offer shall include all the accessories required for normal operation of equipment.	
	Training	Shall be quoted separately as optional.	

* Vendors are advised to write specifications in detail and not to write like 'Complied/ Yes / No ' etc. in specifications.

Signature of the bidder with Seal & Date

LOADING FACTORS



NOTE : IN CASE OF DEVIATION TO BHEL TENDER SPECIFIED TERMS, LOADING FACTOR INDICATED IN FOLLOWING TABLE WILL BE APPLIED TO QUOTED PRICE WHILE EVALUATING THE LOWEST QUOTE

A. FOR INDIGENOUS PURCHASES					
SLNO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
A.1	SUPPLY OF EQUIPMENT	PAYMENT TERMS	100% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AT BHEL R&D	SAME	NIL
				PAYMENT AGAINST PROFORMA INVOICE / DESPATCH DOCUMENTS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE TOTAL PO VALUE FOR ONE MONTH
				FULL ADVANCE PAYMENT WITH BANK GUARANTEE	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE TOTAL PO VALUE FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE PAYMENT WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT FOR ONE MONTH
A.2	SUPPLY OF EQUIPMENT INCLUDING ERECTION AND COMMISSIONING (E&C)	PAYMENT TERMS	90% PAYMENT, WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AND BALANCE 10% WITH IN 30 DAYS OF COMPLETION OF E&C.	SAME	NIL
				100% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF SUPPLIES AND E&C	NIL
				90% PAYMENT AGAINST PROFORMA INVOICE/ DESPATCH DOCUMENT AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C.	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF THE VALUE OF PO FOR ONE MONTH
				90% PAYMENT AGAINST PROFORMA / DESPATCH DOCUMENT AND BALANCE 10% AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON TOTAL VALUE OF THE PO FOR ONE MONTH
				90% ADVANCE PAYMENT WITH BANK GUARANTEE AND BALANCE 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF THE PO VALUE FOR DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND (90 - X) % PAYMENT ON RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE (90-X)% AMOUNT FOR ONE MONTH
				PART ADVANCE (X%) PAYMENT WITH BANK GUARANTEE AND BALANCE (90 - X) % PAYMENT AFTER RECEIPT AND ACCEPTANCE OF THE MATERIAL AND 10% PAYMENT AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (ROUNDED OFF TO THE NEAREST MONTH) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT (100-X)% FOR ONE MONTH

B. FOR FOREIGN PURCHASES (IMPORTED)					
SL.NO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
B.1	SUPPLY OF EQUIPMENT	PAYMENT TERMS	100% PAYMENT BY WIRE TRANSFER WITHIN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF MATERIAL AT BHEL R&D. (DESPATCH DOCUMENTS WILL BE SENT TO BHEL R&D DIRECTLY ALONG WITH BANK DETAILS)	SAME	NIL
				SIGHT DRAFT ON PRESENTATION OF DESPATCH DOCUMENTS VIZ INVOICE AND ETC TO OUR BANKERS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR ONE MONTH PLUS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL
				LC PAYMENT AGAINST DESPATCH DOCUMENTS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				FULL ADVANCE PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR DELIVERY PERIOD(Rounded off to nearest month) + 1 MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER/LC WITH BANK GUARANTEE AND BALANCE PAYMENT WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
B.2	SUPPLY OF EQUIPMENT INCLUDING ERECTION AND COMMISSIONING (E&C)	PAYMENT TERMS	90% PAYMENT BY WIRE TRANSFER WITH IN 30 DAYS FROM THE DATE OF RECEIPT AND ACCEPTANCE OF THE MATERIAL AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER/LC WITH BANK GUARANTEE AND BALANCE PAYMENT ON RECEIPT AND ACCEPTANCE OF MATERIAL	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE PART ADVANCE AMOUNT (X%) FOR THE DELIVERY PERIOD (Rounded off to nearest month) + 1 MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON BALANCE AMOUNT FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				SIGHT DRAFT ON PRESENTATION OF DESPATCH DOCUMENTS VIZ INVOICE, AWB ETC TO OUR BANKERS	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) FOR ONE MONTH PLUS PAYMENT RELATED BANK CHARGES INCURRED BY BHEL
				90% PAYMENT BY WIRE TRANSFER /LC AGAINST DESPATCH DOCUMENTS, BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				90% PAYMENT BY WIRE TRANSFER /LC AGAINST DESPATCH DOCUMENTS, BALANCE 10% AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON THE BASIC VALUE FOR ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
				90% OF BASIC VALUE AS ADVANCE PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE 10% WITH IN 30 DAYS AFTER COMPLETION OF E&C	LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+ 6%) ON 90% OF THE BASIC VALUE FOR DELIVERY PERIOD (Rounded off to nearest month) + ONE MONTH PLUS LC RELATED BANK CHARGES INCURRED BY BHEL
C. PENALTY FOR DELAYED DELIVERY (COMMON FOR INDIGENOUS AND IMPORTS)					
SL.NO	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS	
C	LD CLAUSE	IN THE EVENT OF DELAY IN AGREED CONTRACTUAL DELIVERY, PENALTY OF 0.5% (HALF PERCENT) PER WEEK BUT LIMITED TO A MAX OF 10% OF TOTAL ORDER VALUE WILL BE APPLICABLE	AGREED	NIL	
			IF NOT AGREED	LOADING @ 10% OF THE BASIC MATERIAL COST	
			IF AGREED FOR X%	LOADING @ (10-X)% OF THE BASIC MATERIAL COST	
D. GUARANTEE/WARRANTY PERIOD (COMMON FOR INDIGENOUS AND IMPORTS)					
SL.NO	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS	
D	GUARANTEE/WARRANTY PERIOD	STIPULATED OR REQUIRED GUARANTEE/ WARRANTY PERIOD(X)	AGREED	NIL	
		MINIMUM ACCEPTABLE GUARANTEE / WARRANTY PERIOD(Y)	NOT AGREED FOR STIPULATED BUT AGREED FOR MINIMUM GUARANTEE/WARRANTY(Y)	LOADING @ 10 % OF THE ORDER VALUE PER ANNUM FOR THE REDUCED GUARANTEE PERIOD (X-Y)	

BHEL R&D

Terms & Conditions of Reverse Auction



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 (THROUGH A SERVICE PROVIDER). The philosophy followed for reverse auction shall be English Reverse (No ties).

1. For the proposed reverse auction, technically and commercially acceptable bidders only shall be eligible to participate.
2. Those bidders who have given their acceptance for Reverse Auction (quoted against this tender enquiry) will have to necessarily submit online sealed bid in the Reverse Auction. Non-submission of online sealed bid by the bidder for any of the eligible items for which techno-commercially qualified, will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.
3. 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.
4. In case of reverse auction, BHEL will inform the bidders the details of Service Provider to enable them to contact & get trained.
5. Business rules like event date, time, bid decrement, extension etc. also will be communicated through service provider for compliance.
6. Bidders have to fax the Compliance form (annexure IV) before start of Reverse auction. Without this, the bidder will not be eligible to participate in the event.
7. In line with the NIT terms, 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 bidder to enable them to fill-in the price and keep it ready for keying in during the Auction.
8. Reverse auction will be conducted on scheduled date & time.
9. At the end of Reverse Auction event, the lowest bidder value will be known on auction portal.
10. The lowest bidder has to fax/e-mail the duly signed and filled-in prescribed format for price breakup including that of line items, if required, (Annexure VII) as provided on case-to-case basis to Service provider within two working days of Auction without fail.
11. 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 standard practice.
12. Bidders shall be required to read the “Terms and Conditions” section of the auctions site of Service provider, using the Login IDs and passwords given to them by the service provider before reverse auction event. Bidders should acquaint themselves of the „Business Rules of Reverse Auction?, which will be communicated before the Reverse Auction.
13. If the Bidder or any of his representatives are found to be involved in Price manipulation/ cartel formation of any kind, directly or indirectly by communicating with other bidders, action as per extant BHEL guidelines, shall be initiated by BHEL and the results of the RA scrapped/ aborted.
14. The Bidder shall not divulge either his Bids or any other exclusive details of BHEL to any other party.
15. In case BHEL decides to go for reverse auction, the H1 bidder (whose quote is highest in online sealed bid) may not be allowed to participate in further RA process.

AUTHORISATION LETTER FOR E-PAYMENT/ NEFT / RTGS
(PLEASE FILL UP THE FORM COMPLETELY IN CAPITAL LETTERS ON YOUR COMPANY LETTERHEAD ONLY)

Vendor Code (to be filled by BHEL)	
------------------------------------	--

Type of Request (Tick one)	NEW	CHANGE
1 Company Name		
2 Address		
3 City with PIN Code		
4 State		
5 PAN Number		
6 TIN/ VAT No.		
7 CST No.		
8 Service Tax No.		
9 Name of Contact Person		
10 Mobile number		
11 Ph. no. with STD Code		
12 Fax No. with STD Code		
13 Email ID		
14 Website (URL)		

BANK DETAILS FOR EFT / RTGS

1	Bank Name	
2	Branch	
3	Branch Code	
4	Branch Address	
5	Branch Phone No	
6	Account No.	
7	Account Type: SB/ Current/ other (Specify)	
8	MICR Code	
9	IFSC Code	

I, as an authorized representative / owner of the above named company, hereby state as under:

1. Enclosed here with a cancelled cheque in support of our company's bank details.
2. Authorize BHEL R&D Hyderabad, to electronically make payments to the designated bank account with bank charges, if any, to our account.
3. If the transaction is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL / transferring Bank responsible.
4. I hereby certify that the particulars given above are true, complete and correct.
5. This authority remains in full force until BHEL receives and acknowledge written notification requesting change or cancellation.

Date :
Company
Seal

Authorised Signatory
Designation :



RD:MPX:F-13

Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

VENDOR REGISTRATION FORM

(Indigenous supplier)

[FORM TO BE SUBMITTED* BY THE BIDDER ALONG WITH TECHNICAL-BID]

Before filling, please refer to instructions on page-4

1.0 VENDOR PROFILE:

1.1 Name and address of the vendor:

Phone Nos.:

Fax No.:

Email: 1. 2.

1.2 Local representative name & address in Hyderabad/Secundrabad :

Phone Nos.:

Fax No.:

Email:

Contact Person:

Mobile No:

2.0 TYPE OF ORGANISATION:

PROPRIETORSHIP	Company:	Sister Concern (mention vendor registration number of main organization)	
Partnership	CORPORATION	Small Scale Industry	ANY OTHER(Please specify)

In case of SSI unit, copy of registration to be enclosed. It is requested that MSME registration certificate to be enclosed and tick the following:

Type of Major Activity: Manufacturing / Service

Category of Enterprise: Micro / Small / Medium

Social Category : GENERAL / SC / ST / OBC

Udyog Adhaar Number (UAN): _____

3.0 ANNUAL TURN OVER:

#	Year	Turn-Over, Rs.
1	Current Year(budgeted)	
2	Previous year (200 - 0)	
3	Prior Year (200 - 0)	

4.0 NAME AND ADDRESS OF THE BANKER:

4.1 Bank Name

4.2 Branch name

4.3 Account number

4.4 Account Type

4.5 MICR Code:

4.6 IFSC Code(RTGS/NEFT):

4.7 Bank Phone number(s),

Blank cheque, duly cancelled, to be enclosed.

Please note that all payments shall be made through Electronic clearance services to your above account against the orders executed, if any.

5.0 REGISTRATION PARTICULARS(relevant copies to be enclosed)

5.1 IT Permanent Account No.(PAN):

5.2 State Sales Tax/VAT Registration No:

5.3 Central Sales Tax Registration No:

5.4 ED Registration No:

5.5 Service Tax Registration No:

5.6 PF Account No:

5.7 Labour Licence No:

5.8 ESI Account No:

6.0 CONTACT PERSON: S/Sri:

Designation:

Phone / Mobile No:

7.0 TOTAL NUMBER OF EMPLOYEES:

Graduates(Engr/Scientists/Mgmt/Fin.)	Consultants	Workers		
		Sup./Skilled	Semiskilled	Unskilled

8.0 LIST OF PRODUCTS/ SERVICES OFFERED:

#	Products/ Services	Capacity
1		
2		
3		
4		
5		

9.0 REFERENCE LIST :

(Only recognized public and private sector companies, attach if printed copy available)

#	Customer	Volume / Year
1		
2		
3		
4		
5		

10.0 INFRASTRUCTURE / FACILITIES:

#	Facility (with specifications)	Age/ Year procured
1		
2		
3		
4		
5		

11.0 REGISTRATION WITH OTHER BHEL UNIT/UNITS:

#	Unit	Registration No	Year
1			
2			
3			
4			

12.0 ANY OTHER INFORMATION :

DECLARATION:

The information furnished above is true and authentic.

(CEO / PROPRIETOR)

SEAL:

DATE:

Note:

-
1. Registered bidders, having BHEL (R&D) registration no. or have submitted this format for registration, need not furnish this information again.
 2. The competent authority reserves the right to accept or reject the registration.
 3. Vendors approved for registration will be informed by mail / email, as convenient. A separate communication will be sent in case of non-registration also, citing reasons thereof.
 4. BHEL reserves the right to take penal action as deemed fit if any of the information provided by the vendor(s) is found to be incorrect.
 5. AGM, Head (MM) may be contacted for clarification/additional information on registration.

Instructions

1. Fill all items. Please mention "N.A." for items/ clauses not applicable.
2. Use A4 sheets for this document and the enclosures. Use of additional sheets is permitted if space provided is not adequate.
3. Attach copies of latest documents in respect of items 5.0 (Registration no.s)
4. Photographs of registered office and the chief executive/proprietor shall be furnished.



RD:MPX:F-14

Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

ALL COLUMNS SHOULD BE PROPERLY FILLED IN THE SPACE PROVIDED FOR.WHEREVER IT IS NOT APPLICABLE PLEASE WRITE "NOT APPLICABLE".INCOMPLETE OR INCORRECT FORMS MAY NOT BE CONSIDERED.

1.0 GENERAL INFORMATION:

1.1 NAME OF COMPANY

1.2 DETAILS OF HEAD OFFICE:

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.3 DETAILS OF FACTORY/WORKS:

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.4 DETAILS OF MARKETING AGENT

ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :
 WEB SITE :

1.5 CHIEF EXECUTIVE

1.6 CONTACT PERSON(S)

FOR PRODUCT OFFERED

NAME(S) :
 OFFICIAL CPACITY :
 ADDRESS :
 TELEPHONE :
 FAX :
 EMAIL :

1.7 YEAR OF ESTABLISHMENT

1.8 PRODUCTION CAPACITY PER ANNUM

1.9 PARTICULARS OF PRODUCT INCLUDING SPECIFICATION AND RANGE OFFERED FOR REGISTRTRION (Attach brouchers and catalogues)

1.10 NAME(S) OF BANKERS

1.11 BANKER'S CERTIFICATE

1.12 PORT OF LOADING

1.13 NEAREST AIRPORT

1.14 NAME OF THE INDIAN AGENT, IF ANY
WITH AUTHORIZATION LETTER

2.0 FINANCIAL INFORMATION:

2.1 TOTAL CAPACITY

2.2 ANNUAL TURN OVER FOR LAST 3 YEARS

2.3 WHEHER CREDIT LICENSE ACCEPTABLE YES/NO

3.0 QUALITY MANAGEMENT SYSTEMS

ENCLOSED FORMAT PART-B

3.1 EXPERIENCE LIST FOR SAME/ SIMILAR ITEMS
TO BE ENCLOSED

4.0 FUTURE EXPANSION PLANS:

(Give details)

5.0 LIST OF ENCLOSURES:

(Including brouchers, catalogues, technical literature etc)

6.0 ANY OTHER INFORMATION:

SIGNATURE OF SUPPIER (Authorized signatory)

NAME :
DESIGNATION :
DATE :
OFFICIAL SEAL

Note:

1. BHEL Reserves the right to take penal action as deemed fit if any of the information provided by the vendor is found to be incorrect.
2. Please attach separate sheets, if space found is inadequate



RD:MPX:F-13

Bharat Heavy Electricals Limited

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

Ph: 040 – 23772704, Fax: 040 – 23770698, email: mpx@bhelrnd.co.in

GUIDE LINES REGARDING DEALINGS WITH INDIAN AGENTS OF FOREIGN SUPPLIERS

- i. BHEL shall deal directly with foreign vendors, wherever required, for procurement of goods. However, if the foreign principal desires to avail of the services of an indian agent, then the foreign principal should ensure compliance to regulatory guidelines - which require mandatory submission of an Agency Agreement.
- ii. It shall be incumbent on the Indian agent and the foreign principal to adhere to the relevant guidelines of Government of India, issued from time to time.
- iii. The Agency Agreement should specify the precise relationship between the foreign OEM / foreign principal and their Indian agent and their mutual interest in the business. All services to be rendered by agent/ associate, whether of general nature or in relation to the particular contract, must be clearly stated by the foreign supplier/ Indian agent. Any payment, which the agent or associate receives in India or abroad from the OEM, whether as commission or as a general retainer fee should be brought on record in the Agreement and be made explicit in order to ensure compliance to laws of the country.
- iv. Any agency commission to be paid by BHEL to the Indian agent shall be in indian currency only.
- v. Whenever Indian agents are representing on behalf of their principals the relevent authorisation letter and agreement copy to be enclosed along with Technical bid to consider the offer.



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

TECHNICAL SPECIFICATIONS

FOR

Establishment of “150kW Traction Motor Test Rig” through adopting the existing 158kW Synchronous Generator test set up

at

BHEL Corporate R&D, Vikasnagar, Hyderabad

INDEX

Sl No	Description	Page No.
1	Application	1
2	Motor Under Test (MUT)	1
3	Scope of work	1
4	MUT DETAILS	5
5	Site Conditions	8
6	BROAD TESTS to be conducted on MUTs	10
7	Control, Monitoring with Local Control Unit and Remote Control Unit for AUTO/Manual modes in proposed system	10
8	Indications to be provided on control panel door	10
9	Protections	11
10	Cables	11
11	Documentation	11
12	Integration, Programming, Erection & Commissioning	11
13	Demonstration and Training	11
14	Pre-Qualification Criteria	11
15	Issuing BHEL Components (Excluding MUTs) to vendor	12
16	Information required with offer	12
17	Non-Comprehensive Annual Maintenance Contract (AMC)	12
18	Cost break up details in unpriced and priced bid formats	12
19	Project Milestones	13
20	BoM and scope	13



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

1. **Application:** To conduct Functional, Torque-Speed and Endurance tests on BHEL developed Traction motors (Motor Under Test) in regenerative mode through adopting the existing 158kW Synchronous Generator Test setup.
2. **Motor Under Test (MUT):** MUT is BHEL developed 3-phase squirrel cage Induction Motor of 70kW, 150kW and 3-phase Permanent Magnet Synchronous Motor (PMSM) of 150kW.
3. **Scope of work:**
 - 3.1 Vendor shall modify the **existing Synchronous Generator test setup** available in BHEL R&D into a traction motor test setup. If required vendor can visit BHEL R&D with prior approval. Existing test rig is used to test **synchronous generators of capacity up to 158kW in regeneration mode**. Synchronous generator is driven through an induction motor of suitable capacity with a drive for speed control and another drive to regenerate the generator power in closed loop. A suitable gear box (for speed matching) and torque transducer (to measure shaft torque) are connected in line.
 - 3.2 In proposed scheme two similar rating BHEL make machines / MUTs shall be mechanically coupled in Back to Back mode. Vendor shall use available ACS850 drive (ABB make ACS 850 Drive: Frame size – G2, Type designation as ACS850-04-710A-5), instrumentation, Beckoff control and data acquisition module (please refer Fig.2a and Fig.2b) and make in to a 150 kW/(0 – 11,200) rpm **Traction motor test bench** by supplying **additional hardware/software, Switchgear, couplings, controls and instrumentation to meet the new requirement** including adjustable mounting base structures for MUT & Regenerative Dynamometer (Regen. Dyno). **This shall be worked out and details to be furnished in technical bid** as per new scheme (refer Fig.3).Alignment of machines at high speeds during actual testing will be done by BHEL. However necessary supporting stools/structure for three directional alignment are to be supplied by vendor.
 - 3.3 The additional drive for driving the MUT/Regen.Dyno is in vendor scope of supply and shall be capable of operating up to 599Hz or above to obtain Torque-Speed characteristics as shown in Fig.4 & Fig.6.

S No.	Motor Under test (MUT)	Regenerative Dynamometer (Regen. Dyno)
1	70kW Induction Motor	70kW Induction Motor
2	150kW Induction Motor	150kW Induction Motor
3	150kW PMSM	

MUT rating details are given in below section of this document

- 3.4 The existing torque sensor shall be redeployed with modified shaft, couplings to match with the highest center height of MUTs. Torque sensor shall be made as a stand-alone assembly supported at both ends with suitable high speed bearing units, couplings. This arrangement is common for all MUTs under test. Centre height of MUT shaft will be adjusted to suit Torque sensor assembly, required MUT mounting adapter blocks have to be designed suitably and supplied for all operating conditions. Detailed mechanical analysis shall be done on entire test setup for all dynamic load operating conditions. Complete system shall be fitted on a skid (may modify the existing skid – please refer Fig.8. or a new skid) with levelling and anti-vibration mounts.
- 3.5 The existing inverter rated 710 amps of ABB origin model ACS 850 shall be redeployed in this new setup.
- 3.6 The newly supplied drive (with latest IGBT technology converter/inverter) shall connect to existing ACS850 DC link through DC fuses as per standard engineering practices. Voltage and



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

Current THD at MUT& Regen.Dyno shall be less than 5% at rated conditions. Existing Active Harmonic Filter (Make:Consul neowatt & Model:IORA 3000, Rating: 600Amps/ 400VAC/3-Phase/50Hz)can be used at supply mains to maintain Power Factor close to unity (0.8 to 1.0). Any other components required to meet unity (0.8 to 1.0) power Factor at input are included in vendor's scope. THD at input supply mains voltage & current shall be less than 5% as per regular practice.

- 3.7 System shall be configured to test MUT in all operating regions viz. Motoring, Braking and Regeneration in entire operational speed range from motoring to regeneration at any speed, defined as per Torque-Speed characteristics of MUTs.
- 3.8 System shall be configured with dynamic braking facility through suitable chopper circuit & Dynamic Braking Resistor (DBR) to facilitate the system deceleration control.
- 3.9 Provision for feeding loading profile / torque-speed data set shall be allowed through user interface for Motoring, Braking and Regeneration characteristics.
- 3.10 Existing Beckhoff Data Acquisition (DAQ) System may be reprogrammed as Traction Motor Test rig Data Acquisition System as per new requirement.
- 3.11 The Operator control GUI shall be made from existing system as per new requirement and any additional hardware/software required for control and data acquisition are included in vendor's scope. Data logging shall be done in existing industrial grade PC from local and remote nodes in all operating modes. Data log interval shall be selectable and variable based on type of Machine and Test conducted.
- 3.12 Suitable Design, Engineering, Supply of required mounting stools (for MUT, Regen. Dyno) and Couplings to match center height of complete test rig are included in vendor scope of supply. Engineering analysis shall be done by considering dynamic operating conditions of the system.
- 3.13 After establishing and testing MUT with the proposed loading configuration, a provision shall be made to integrate the BHEL developed drive for performing similar testing. The interfacing Input and Output signals shall be mentioned for proper integration of BHEL developed drive with Control & DAQ system and test loading configuration. If required BHEL will provide details of BHEL make drive.
- 3.14 Modified test bench shall be engineered with suitable safety guards for all high speed rotating elements as per standard engineering practices.
- 3.15 The loading system control panel screen shall have built in monitoring of following parameters as minimum on its digital operator interface:
 - AC GRID Voltage
 - AC GRID Current
 - AC GRID frequency
 - AC GRID Power factor
 - AC GRID Power
 - MUT Input Voltage
 - MUT Input Frequency
 - MUT Input Current
 - MUT Input Power
 - MUT Input Power Factor
 - MUT speed
 - MUT torque
 - MUT efficiency
 - Regn. Dyno. Voltage
 - Regn. Dyno. Current

Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

- Regn. Dyno. Power
 - Regn. Dyno. Power Factor
 - Regn. Dyno. efficiency
 - DC Link Voltage
 - DC Link Current
 - Regenerative loading system efficiency.
 - MUT winding temperature with RTDs –4 No.'s.
 - Regn. Dyno. winding temperature with RTDs –4 No.'s.
- 3.16 At a time one MUT will be tested as per table mentioned in point no. 3) above.
- 3.17 **Additional hardware/software, if required to meet the new requirement shall be worked out and details to be furnished in technical bid.**
- 3.18 GUI as per BHEL R&D requirement shall be made with all Auto and Manual operational features. All Test sequences as per new requirement shall be elaborated during design review stage. Provision of external Input signals (4-digital and 4-Analog) interface from MUT/ Regen. Dyno. has to be made with control & DAQ system. Based on these I/Ps during start and operation the trip condition logics have to be built. These I/P signal status/values have to be displayed in DAQ system.
- 3.19 Scheme for implementation shall be elaborated in technical bid clearly.
- 3.20 **Main parameters for control and operation shall be provided with user access at Local and remote control panels.**
- 3.21 Delivery: Stores - BHEL Corporate R&D, VIKASNAGAR, Hyderabad.

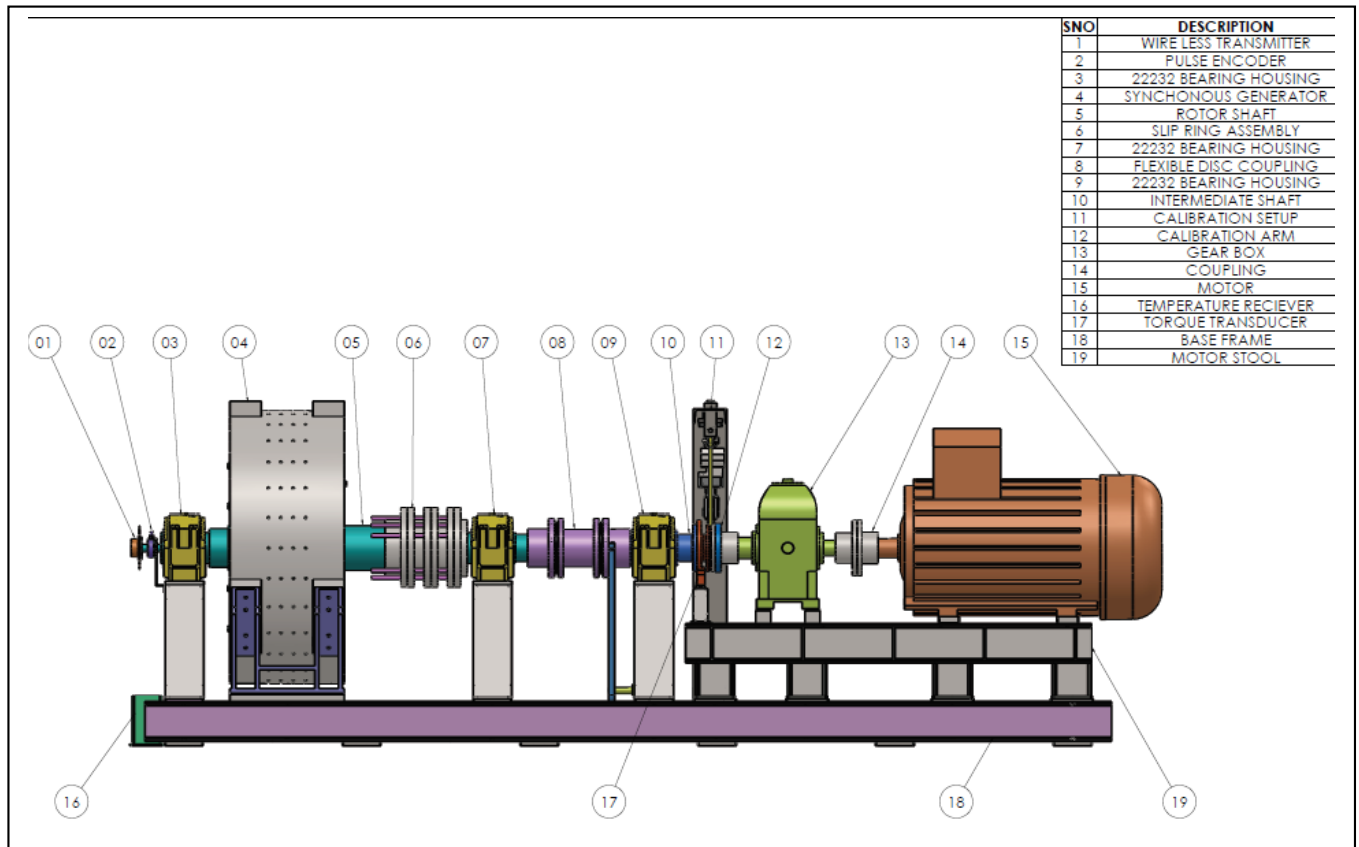


Fig.1. Existing Synchronous Generator Test rig at BHEL R&D

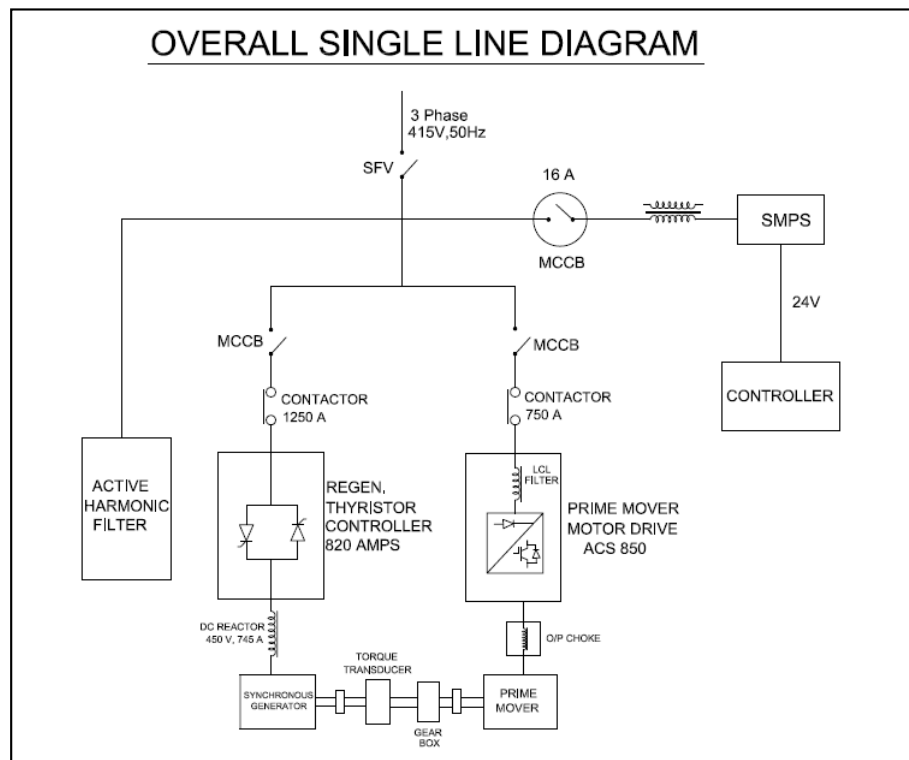


Fig.2a. Line Diagram of existing Synchronous Generator Test rig at BHEL R&D, Hyderabad

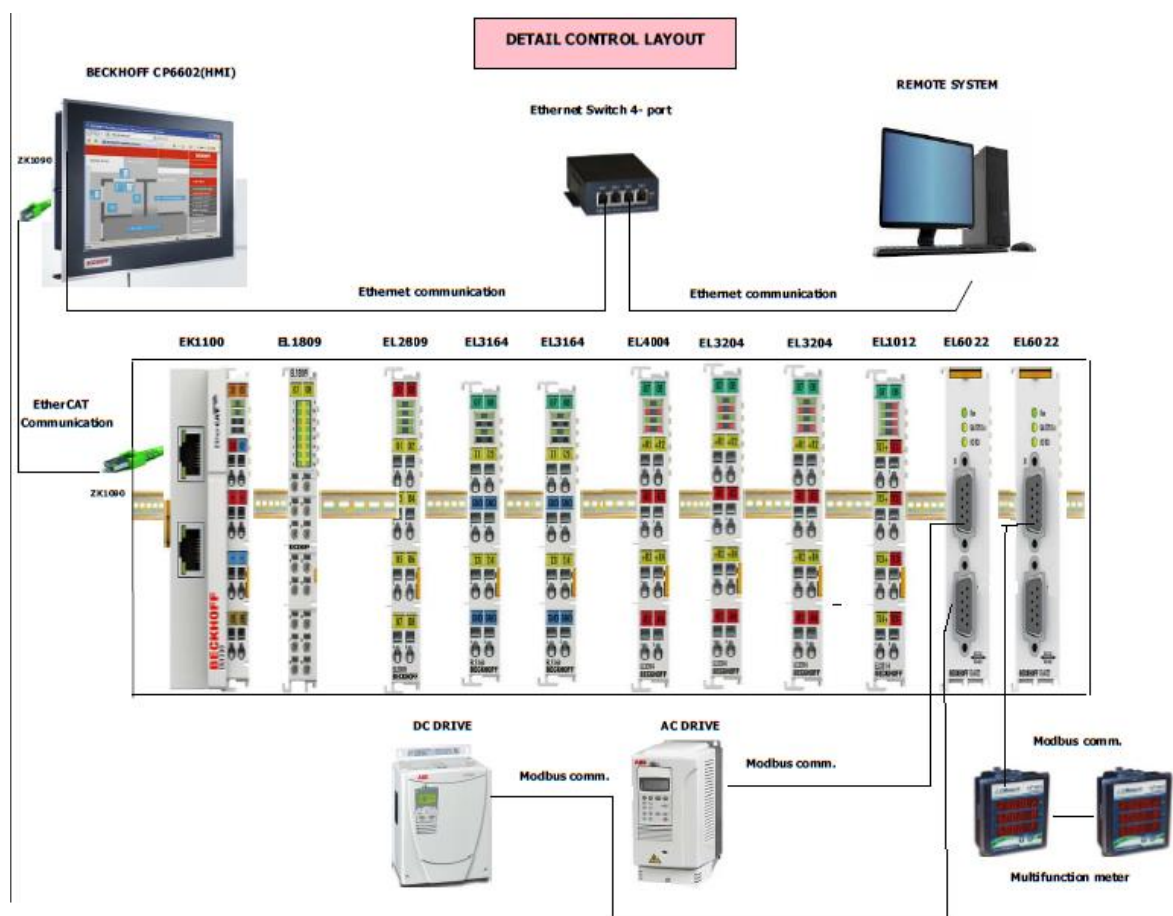


Fig.2b. Control layout of existing Synchronous Generator Test rig at BHEL R&D, Hyderabad

Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

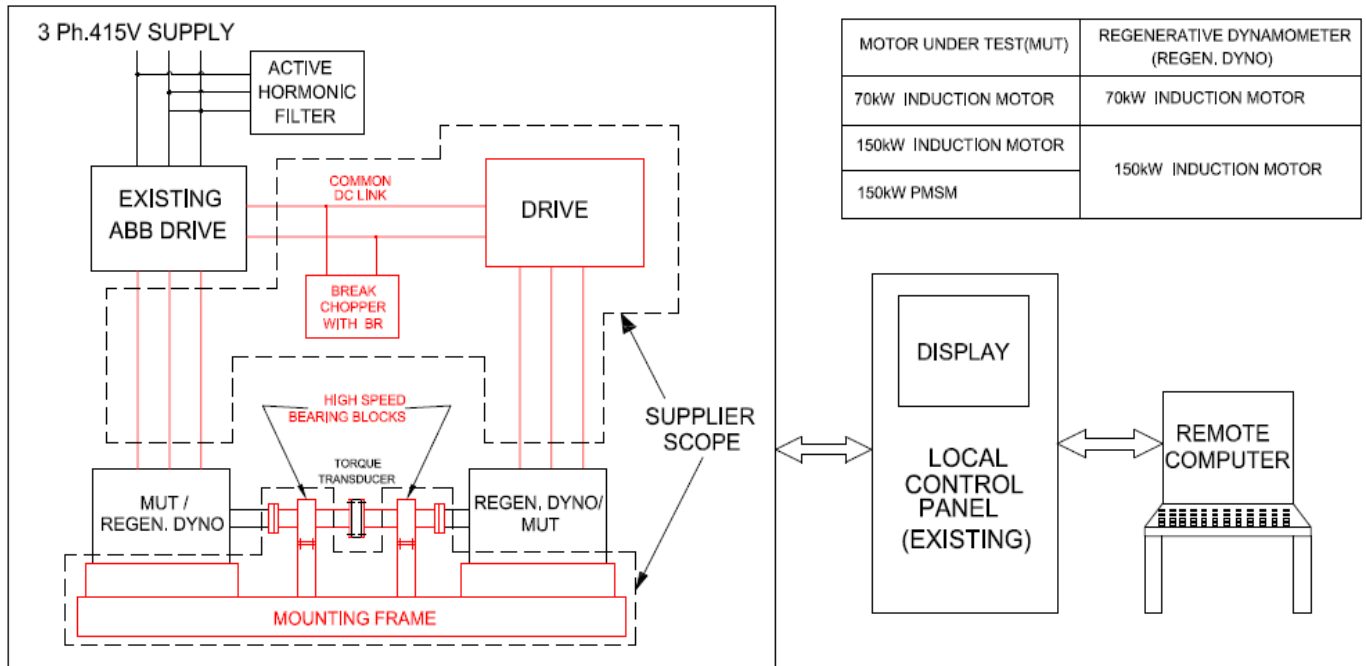


Fig.3. Block diagram of TRACTION MOTOR test setup to be made

4. MUT DETAILS:

4.1 MUT Type 1: 70kW Induction motor

- Rated voltage: 415V
- Rated power: 70kW
- Rated torque: 167Nm
- Rated speed: 4000rpm
- Rated current: 135A
- Max. Torque: 450Nm @ 365A approximately @60 sec for every 10 minutes.
- Peak output power: 125 kW
- Max. Speed: 10,000rpm
- Motor winding Insulation is capable of withstanding 1200 V DC.
- Dimension details: 565x 260 x 350mm (shaft extension-extra: DE-107.1mm) approx.
- Weight: 120 Kgs approximately.
- Mounting details: Type - DE Cover Flange mounting. Details of the flange for mounting are shown in Fig.5.
- Centre height: 155 mm.
- Moment of Inertia: 0.0817 kg-m²

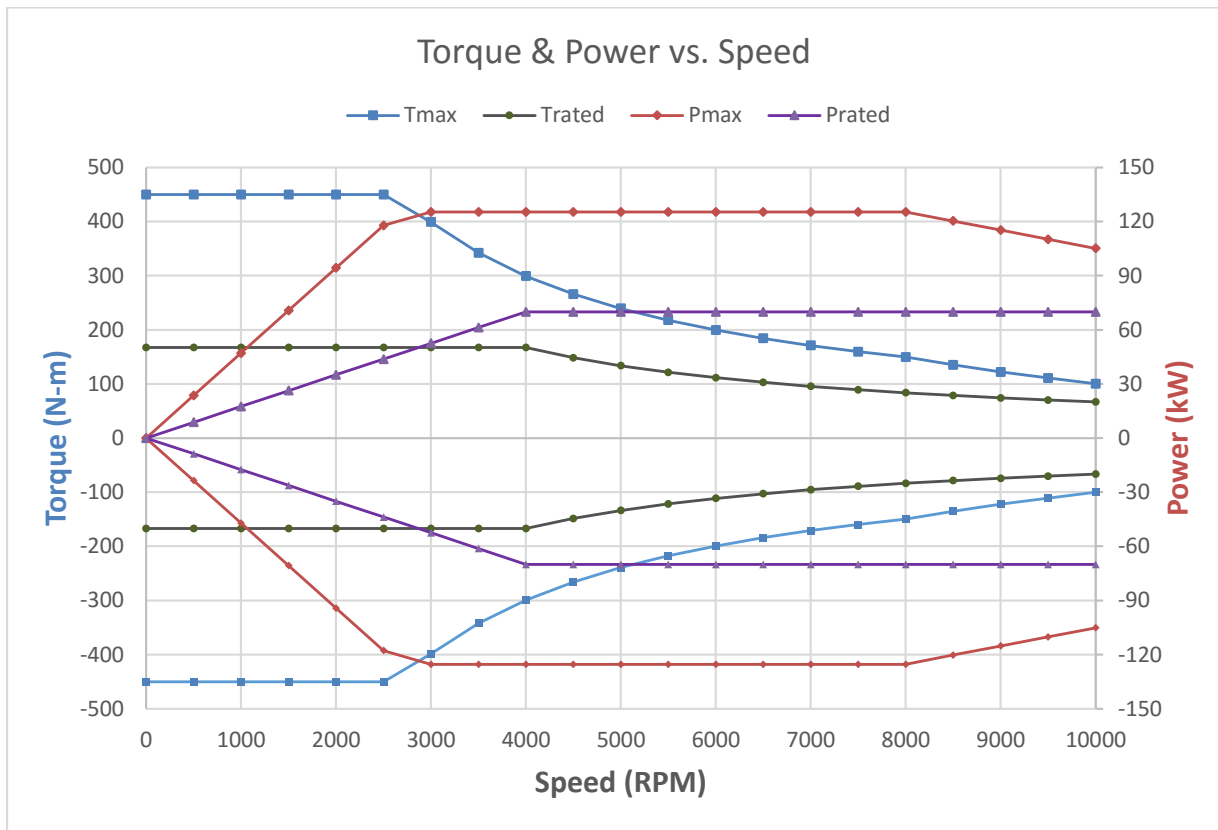


Fig.4: 70kW MUT Torque-Speed characteristics

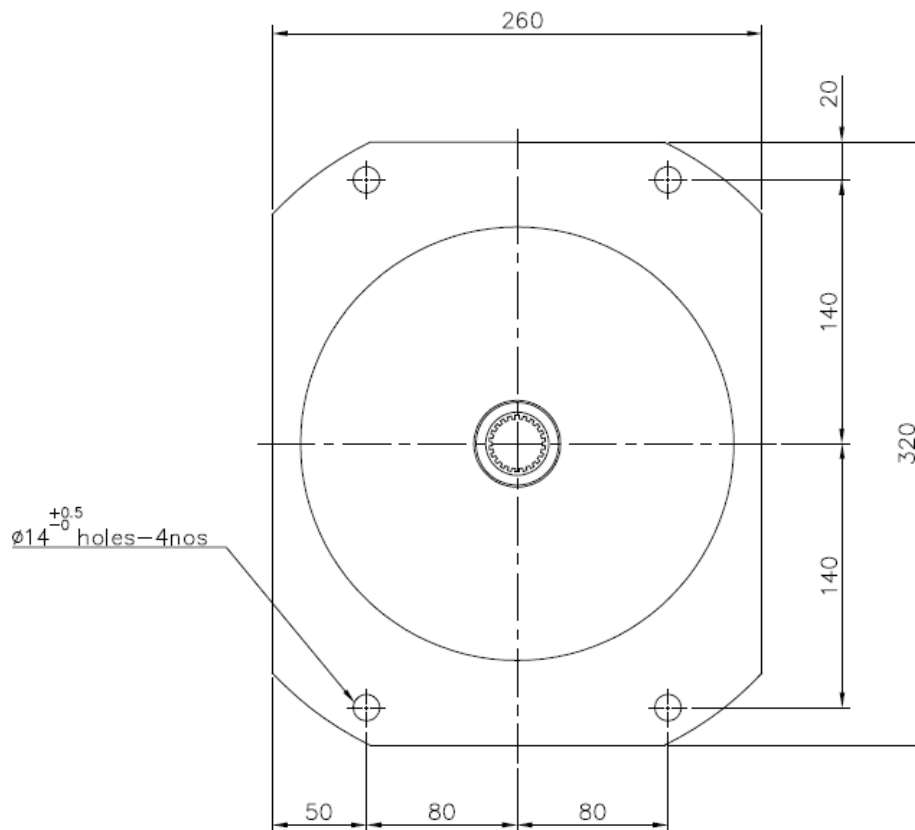


Fig.5. END COVER Flange Mounting details of 70kW Induction Motor

4.2 MUT Type 2: 150kW Induction motor

- Rated voltage: 415V
- Rated output power: 150kW
- Rated Torque: 358Nm
- Max. Torque: 1157Nm@850A approximately @60 sec for every 10 minutes.
- Rated speed: 4000rpm
- Rated current: 290A
- Peak output power: 194kW
- Max. Speed: 11,200rpm
- Motor winding Insulation is capable of withstanding 1200 V DC.
- Dimension details: 675 x 480 x 400mm (shaft extension-extra: NDE -70mm, DE-110mm) approx.
- Weight:310Kgs approximately.
- Mounting details: Bottom surface of End covers are provided with holes for fixing Induction Motor to the base structure. Details of the base for mounting is shown in Fig.7.
- Centre height: 200 mm.
- Moment of Inertia: 0.8359 kg-m²

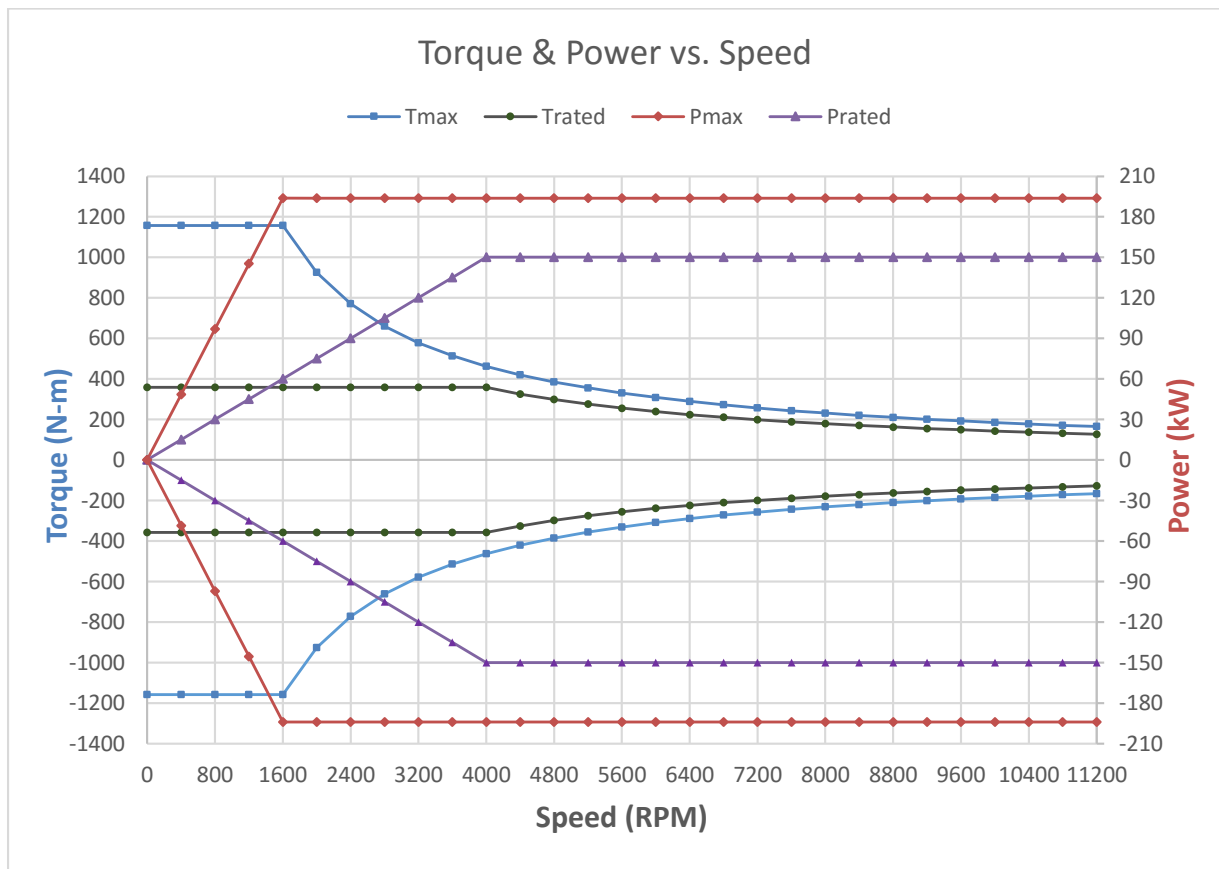


Fig.6: 150kW MUT Torque-Speed characteristics

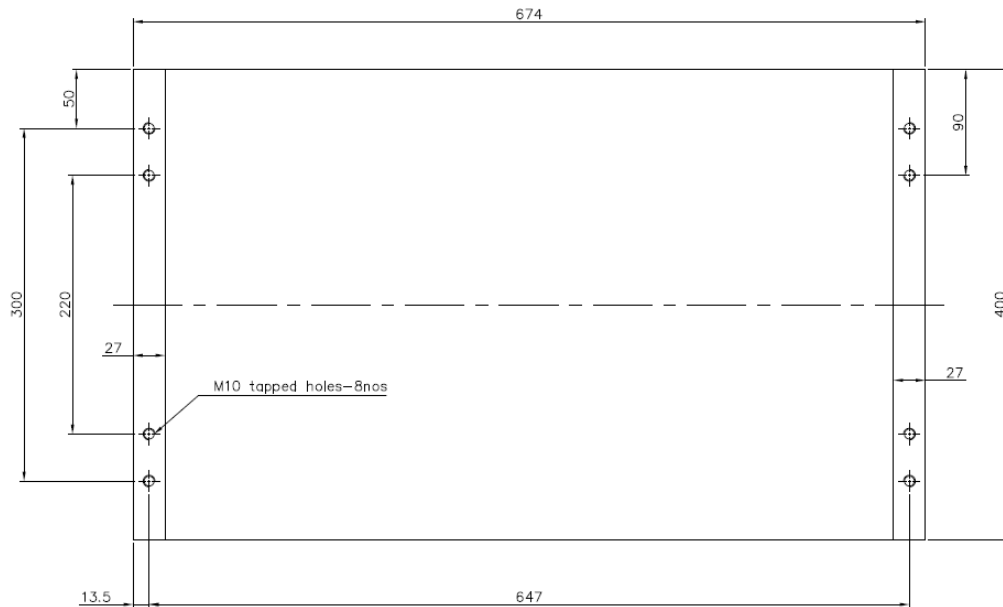


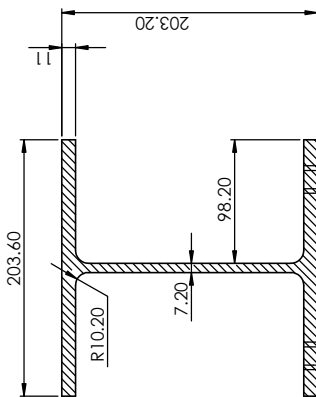
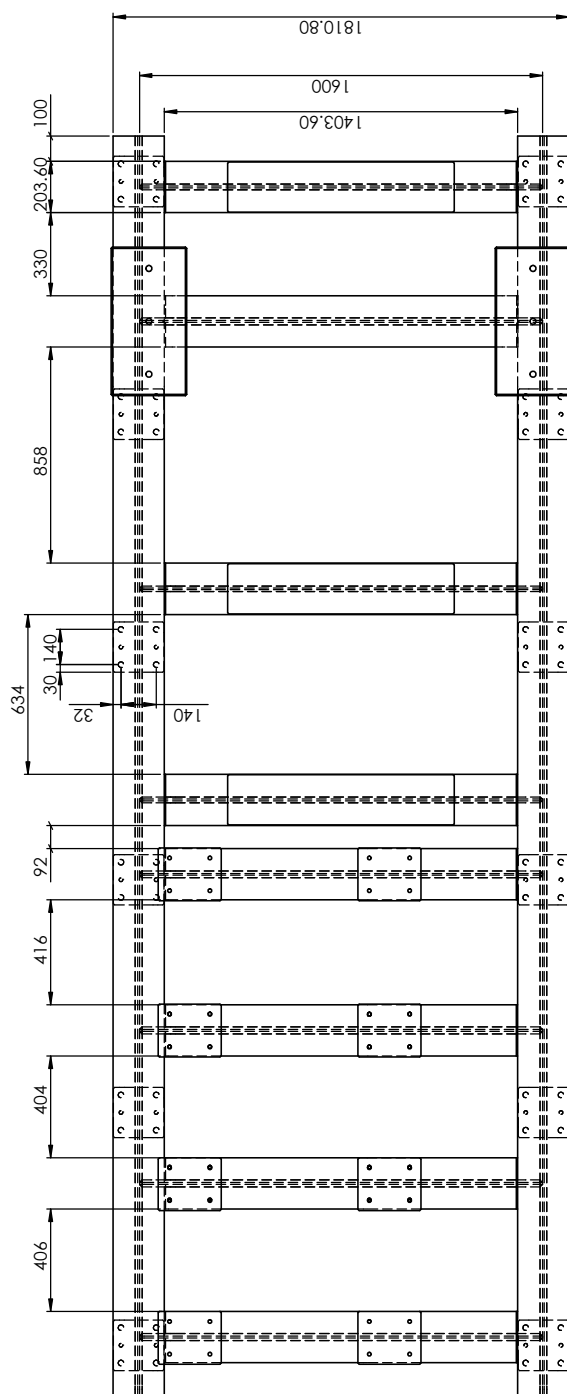
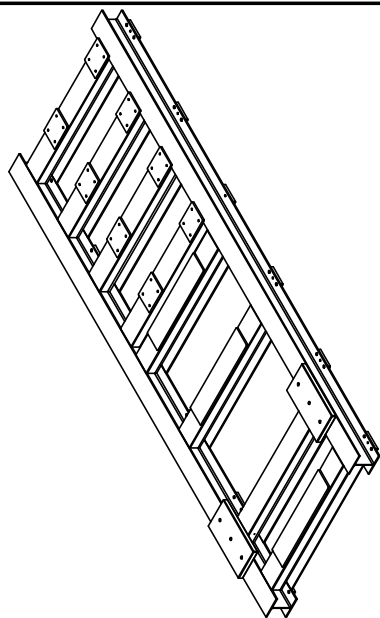
Fig.7. Base foot mounting details of 150 kW Induction Motor/PMSM

4.3 MUT Type 3: 150kW Permanent Magnet Synchronous motor *(Torque-Speed Characteristics same as MUT Type -2, Please refer Fig.6)*

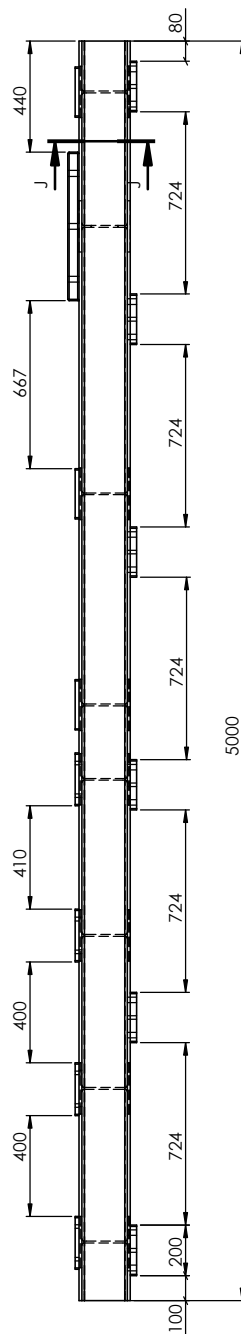
- Rated voltage: 415V
- Rated output power: 150kW
- Rated Torque: 358Nm
- Max. Torque: 1157Nm@850A approximately @60 sec for every 10 minutes.
- Rated speed: 4000rpm
- Rated current: 290A
- Peak output power: 194kW
- Max. Speed: 11,200rpm
- Motor winding Insulation is capable of withstanding 1200 V DC.
- Dimension details: 675 x 480 x 400mm (shaft extension-extra: NDE -70mm, DE-110mm) approx.
- Weight: 310 Kgs approximately.
- Mounting details: Bottom surface of End covers are provided with holes for fixing PM Motor to the base structure. Details of the base for mounting is shown in Fig.7.
- Centre height: 200 mm.
- Moment of Inertia: 0.8359kg-m²

5. Site Conditions:

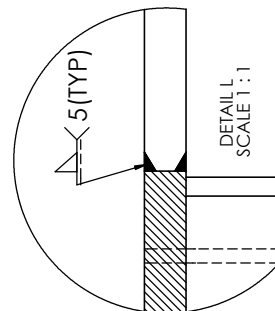
	UNIT	RANGE
Temperature of ambient air	°C	5 to 50
Relative humidity	%	10 to 75
Plant Elevation above MSL (assumed)	m	550
Seismic Zone		2



DETAIL K
SCALE 1 : 3



SECTION J-J
SCALE 1 : 15



DETAIL L
SCALE 1 : 1

NOTE: 1) All internal joints to be weld
2) Debur all sharp edges.

Fig.8. Existing Skid/BaseFrame drawing details

6. **BROAD TESTS to be conducted on MUTs:** As per relevant IEEE – 112/ IEC 60034
 - 1) No load Test
 - 2) User Programmable Load Test – Constant Torque/ Constant Power/ Variable Torque & Power (both in motoring and regeneration mode)
 - 3) Blocked rotor test
 - 4) Temperature rise Test
 - 5) Efficiency Test
 - 6) Over Load Test
 - 7) Speed reversal test
 - 8) Load throw test
 - 9) Other relevant tests as per latest IEC 60034 standard
7. **Control, Monitoring with Local Control Unit and Remote Control Unit for AUTO/Manual modes in proposed system:**

Total control, operation and access to the system shall be provided at two nodes (1.Local control, which is on control panel – touch screen, 2.Remote, which is industrial grade PC) with only one node being active at any point of time. Auto/Manual control shall be accessible from both nodes. Provision for switching from one node to another shall be provided at both nodes and through HMI (Human Machine Interface). Provision to be made to operate either at local node through hardwired switches or through HMI. If one node is enabled for control operation other shall become passive w.r.to control but data monitoring shall be available at both the nodes. Operator shall be able to monitor real time parameter values and system component status at both nodes irrespective of mode of operation, load profile and control. The operator interface shall be capable of displaying a specific important parameters to the operator such as Loading system speed and Loading on power-up.

HMI: Windows based user friendly customized GUI with real time Data (parameter values and system component status) viewing, logging and saving with respect to real time shall be provided in any standard file format (.xls or .csv) for further analysis.

Auto Operation: In AUTO operation required speed-torque curve parameter shall be fed/set by the user with required security authentication using appropriate program developed as per MUT. Rise or lowering the parameters shall be ramp in nature and ramp rate will be decided during detailed engineering as per the scheme. Control flow during auto operation shall be smooth with all protections enabled.

Manual Operation: In manual operation mode full control shall commanded by operator at each and every stage of system by soft or hard switches. Envisaged tests are to be carried in both modes (AUTO/MANUAL) of operation. Changeover from one mode to other shall be done by closing controls in current operating mode sequentially. Required software and hardware interlocks shall be in operation under all modes of control.
8. **Indications to be provided on control panel door**
 - 1) Input power ON/OFF
 - 2) Loading system Healthy, Ready, Faulty
 - 3) MUT Drive ON/OFF
 - 4) MUT Rotation and direction
 - 5) Regen. Dyno drive ON/OFF
 - 6) MUT operating mode: Motoring /Braking/Regeneration mode
 - 7) Emergency stop activated
 - 8) External signal status: HEALTHY/FAULTY



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

9. Protections: With the below as minimum

- 1) Loss of grid supply, Line input over-voltage and under-voltage
- 2) Drive motor Input over current protection for pre-set limit (Limit shall be fed from operator interface as per MUT& Regn. Dyno.)
- 3) Power module over-temperature
- 4) Drive output short circuit protection
- 5) MUT & Regn.Dyno winding over temperature
- 6) Pre- check conditions/logics
- 7) **Earthing:** Proper earthing as per system requirement which includes earthing strip along the cable tray and safety items as required.

10. Cables:

All **instrumentation** and **power cables** shall be suitably selected and supplied with the system.

- 1) VFD suitable Cable(Shielded cables),from drive to MUT(Motor) – 20metres long
- 2) VFD suitable Cable (Shielded cables),from Regn.Dyno to drive – 20metres long
- 3) Other required power cables
- 4) All instrumentation cables with proper shielding to comply EMI/EMC

11. Documentation:

- 1) Design, Engineering and analysis reports – 2 Copies and a CD with approved design documents.
- 2) Single line, Schematic, Wiring diagrams and Drawings – 2 Copies
- 3) Control logic flow, Flow charts – 2 Copies
- 4) Operation and Maintenance Manuals (Including test sequences) – 2 Copies

12. Integration, Programming, Erection & Commissioning

a. Integration & Programming: Integration & Programming of the complete Loading System is included in vendor's scope. Integration shall be done as per system requirement. Programming of sub-systems/components for BHEL MUTs/drive testing shall be done as per each requirement under type of test conducted.

b. Erection & Commissioning: Final acceptance will be based on successful completion of the Test rig E&C with desired Torque-Speed characteristics demonstration on BHEL MUTs. Any other required equipment and material for Erection, commissioning with Material handling & shifting are included in vendor scope.

Tools: Any special tools required for integration and troubleshooting shall be brought by Vendor.

13. Demonstration and Training:

Demonstration shall be done with BHEL MUTs/Similar Machine/Drive. Training is required for two persons from BHEL for a minimum period of 2 days at place of commissioning.

14. Pre-Qualification Criteria

- a.** The bidder shall have proven expertise in the supply and commissioning of inverter drives and its associated equipment for test bed applications. To this Bidder shall submit the PO details, Customer details and Functional details of the Test Bed systems supplied in last 5 years, out of which Technical evaluation and selection will be done by a Technical Committee at BHEL and the decision of BHEL regarding this will be binding.



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

- b. BHEL reserves the right to contact the referred parties to carry out independent Verification/confirmation of the satisfactory performance of the equipment.
PROSPECTIVE BIDDERS SHALL GIVE THOSE REFERENCE ONLY WHO ARE WILLING TO EXTEND INDEPENDENT CONFIRMATION WHEN APPROACHED BY BHEL CONFIRMATIONS AND NOT ABSTAIN FROM THE SAME ON THE GROUNDS OF CONFIDENTIALITY.

15. Issuing BHEL Components (Excluding MUTs) to vendor:

Equivalent bank guarantee shall be submitted for all components taken by vendor from BHEL's existing system for modification. Vendor holds complete responsibility for these components taken from BHEL.

16. Information required along with offer:

- a. Loading system design methodology and Bill of material for complete system with all components and parts included.
- b. Catalogues of the all components offered.
- c. Completely filled and duly signed Technical compliance sheet

Note:

Point-wise confirmation to this to be given along with the technical offer. Deviations if any shall be indicated separately. If there are no deviations to the specifications, supplier shall mention the same explicitly. A reply from vendor stating that "Equipment will generally meet the specifications" will not be accepted by BHEL Corp R&D.

17. Non-Comprehensive Annual Maintenance Contract (AMC):

Non-Comprehensive AMC charges for a period of three years after completion of warranty period on per annum basis in the Format IV needs to be submitted along with the Bid in % of basic equipment cost i.e % of SI, no. 1.0b of Annexure III. AMC charges to be quoted based on quarterly one visit for preventive maintenance and with unlimited breakdown visits covered under AMC. During preventive visits under AMC, vendor shall ensure all the software upgrades are in place. Quoted Non-Comprehensive AMC charges will be taken towards cost comparison. However, BHEL reserves the right to release a separate order/orders for AMC after completion of warranty.

18. Offer shall have below cost break up details as per unpriced & price bid formats:

- 1) Design and Engineering of sub systems/components required for Traction motor test rig. (approved copies to be delivered in CD)
- 2) Manufacture & Supply of components/material required for Traction motor test rig.
- 3) Integration, Programming.
- 4) Erection and Commissioning, Demonstration and training at BHEL.
- 5) Packing & forwarding charges.
- 6) Freight & Insurance charges.
- 7) Taxes& duties, as applicable shall be mentioned for applicable items.
- 8) **Warranty:** Minimum 1 Year from date of acceptance at BHEL R&D after successful Erection &Commissioning.
- 9) Non-Comprehensive Annual Maintenance Contract (AMC) after completion of warranty.

Vendor shall submit breakup cost of above, clearly in relevant formats available in Annexure-II & III.

Note: 1) Vendor compliance on Mile stone activity schedule shall be submitted with technical bid.

2) Vendor shall submit their technical compliance sheet with technical bid as per specifications mentioned in this document.

Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

19. Project Milestones:

Sl. No.	Description	Vendor compliance for Schedule
1	Submission of Critical Design Review documents for approval & acceptance	Within ____ Weeks from Placement of PO
2	Supply of equipment/sub-system/components & acceptance	Within Milestone1 + ____ Weeks
3	Integration & Programming	Within Milestone2 + ____ Weeks
4	Erection & Commissioning	Within Milestone3 + ____ Weeks
5	Demonstration & Training	Within Milestone3 + ____ Weeks

20. BoM and scope

BoM and scope							
Sl. No.	Component	Make/Model	Qty	Unit	Scope		#Covered under Unpriced bid point No.
					BHEL	Vendor	
1	Existing Drive(Drive1)	Make:ABB, Model:ACS850-04-710A-5	1	No.	✓		
2	Torque transducer	Make:HBM, Model:T40B	1	No.	✓		
3	Controller and Data Acquisition module	BECKOFF - CP6606-0001-0020 BECKOFF - EK1100	1	Set	✓		
4	Remote Computer	MAKE - ADVANTECH Industrial PC Configuration Intel i7 3.4Ghz processor 4 GB RAM, 1 TB HDD 2 x RS 232 ports 2 x USB ports Windows 7 Professional 19" LED Monitor	1	No.	✓		
5	Active harmonic filter	Make:Consul Neowatt, Model:IORA 2999	1	No.	✓		
6	BHEL developed drive with necessary cooling arrangement for future integration	BHEL	1	No.	✓		
7	Local control Panel with touch screen display	BECKOFF - CP6606-0001-0020	1	No.	✓		
8	Torque transducer calibration arrangement	Digital weighing scale arrangement	1	No.	✓		



Specifications for 150kW Traction Motor Test Rig

Doc No: TEST SETUP/DC814/E1-01 Rev: 01 Dt. 19-05-2017

Sl. No.	Component	Make/Model	Qty	Unit	Scope.		#Covered under Unpriced bid point No
					BHEL	Vendor	
9	Available grid supply	Voltage: 415V $\pm$ 10% Frequency : 50Hz + 6% Phase: 3 Phase, 4 wire.	1	No.	✓		
Deliverables (Items completely included in vendors scope)							
10	Drive to be supplied (Drive2)		1	No.		✓	
11	Torque Transducer mounting (high speed) Bearings, Bearing Blocks		1	Set		✓	
12	Torque Transducer shaft and Couplings		2	Sets		✓	
13	MUT Couplings		2	Sets			
14	Break Chopper unit		1	No.		✓	
15	Modified Base		1	No.		✓	
16	MUT Mounting blocks		1	Set		✓	
17	Power Cable (Shielded)		40	mtrs		✓	
18	Safeguards		As req.	Sets		✓	
19	Voltage & Current sensors		As req.	No's		✓	
20	Anti-vibration mounts		As req.	No's		✓	
21	Earthing materials		As req.	No's		✓	
22	Supply of components required for traction motor test setup		As req.	LOT		✓	
23	Modification, Programming of existing system to Traction Motor test setup		As req.	LOT		✓	
24	Other Supporting miscellaneous items as required to complete the above scope of supply		As req.	LOT		✓	
25	Additional components/Sub systems with list and details.		As req.	LOT		✓	
Integration, Programming, Erection & Commissioning, Demo. and Training							
26	Integration, Programming		As req.	LOT		✓	
27	Erection & Commissioning		As req.	LOT		✓	
28	Demonstration & Training to BHEL personnel at BHEL R&D		As req.	LOT	✓	✓	

As req. - As required.

This BoM list is not exhaustive, vendor may add additional data as per applicability.

ANNEXURE-II

Un Priced Bid Format for Establishment of 150 kW Traction Motor Test Rig

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

1.0 Supply

S. No.	Item Description	Units	Qty.	Unit Rate (INR)	Total C=(A*B)	HSN/SAC Code
COL. No 1	2	3	4	5	6	7
			(A)	(B)	C=A*B	
	Deliverable Item**					
1.0a.	Design and Engineering of sub systems/components required for converting the existing Synchronous Generator test facility into a traction motor test facility.	Set	1	Quoted	Quoted	
1.0b.	Manufacture & Supply of components for converting the existing Synchronous Generator test facility into a traction motor facility as per BoM	Lot	1	Quoted	Quoted	
1.1	Other (Misc.) charges	_____ %				
1.2	Packing and Forwarding charges	_____ %		Quoted	Quoted	
1.3	Subtotal A(EXW Price)				Quoted	
1.4a	CGST	_____ %		Quoted	Quoted	
1.4b	SGST	_____ %		Quoted	Quoted	
1.4c	IGST	_____ %		Quoted	Quoted	
1.4d	Cess	_____ %		Quoted	Quoted	
1.5	Subtotal B			Quoted	Quoted	
1.6 a	Freight to BHEL R&D Hyderabad Stores,	_____ %		Quoted	Quoted	
1.6 b	Insurance to BHEL R&D Hyderabad Stores,	_____ %		Quoted	Quoted	
1.6c	GST including Cess on 1.6a & 1.6b if any	_____ %				
1.7	Total Price (Delivery to BHEL Stores) (1.5 + 1.6 a+1.6b +1.6c)					
2.0 E&C Activities						
2.1	Integration and Programming	Lot	1	Quoted	Quoted	

SIGNATURE OF THE BIDDER WITH SEAL

2.2	Erection and Commissioning	Lot	1	Quoted	Quoted	
2.3	Demonstration at site of installation	Lot	1	Quoted	Quoted	
2.4	Post-installation training	Lot	1	Quoted	Quoted	
2.5	Sub Total C=2.1+2.2+2.3+2.4	_____ %				
2.6a	CGST	_____ %		Quoted	Quoted	
2.6b	SGST	_____ %		Quoted	Quoted	
2.6c	IGST	_____ %		Quoted	Quoted	
2.6d	Cess	_____ %		Quoted	Quoted	
2.7	Subtotal B			Quoted	Quoted	
	Grand total=1.7+2.5+2.7					

** Items may be quoted in same format only as per actual nomenclature and part numbers with quantity and unit price at appropriate location. All columns to be filled. If any item does not carry any value it must be mentioned as zero (0).

#Actual taxes/ rates as applicable at the time of placement of Purchase Order

Note:

1. Submission of GST Registration details along with the Un-priced bid is required for consideration of the Offer.
2. Kindly provide the HSN/SAC code and the breakup of the tariff/taxes (CGST/SGST/IGST/UGST) based on from and to locations with individual components.
3. Concessional taxes/duties, if any, available to BHEL as on date of price bid opening shall be taken into account for evaluating landed cost.
4. Hence all offers shall be evaluated at available concessional rates of, if any, on or before opening of price bid date or otherwise it shall be evaluated with quoted/prevaling rates as on date of price bid opening for landed cost comparison. However, all suppliers have to accept Concessional taxes/duties in case if the same is available to BHEL as on date of dispatch.

Suppliers are requested to quote on FOR BHEL R&D Stores, Vikasnagar, Hyderabad (INDIA)

5. This Un-Price bid format should be submitted along with Techno-Commercial Bid.
6. Rates to be quoted in figures with corresponding words.
7. All taxes and Duties to be submitted in Unpriced Bid also
8. Vendor's undertaking: I/We have read and understood the NIT terms and conditions.

SIGNATURE OF THE BIDDER WITH SEAL

ANNEXURE-III

Price Bid Format for Establishment of 150 kW Traction Motor Test Rig

Enquiry Description	Enquiry No	Enquiry Date	Vendor's Name and Address	

1.0 Supply

S. No.	Item Description	Units	Qty.	Unit Rate (INR)	Total C=(A*B)	HSN/SAC Code
COL. No 1	2	3	4	5	6	7
			(A)	(B)	C=A*B	
	Deliverable Item**					
1.0a.	Design and Engineering of sub systems required for converting the existing Synchronous Generator test facility into a traction motor test facility.	Set	1			
1.0b.	Manufacture & Supply of components for converting the existing Synchronous Generator test facility into a traction motor facility as per BoM	Lot	1			
1.1	Other (Misc.) charges	_____ %				
1.2	Packing and Forwarding charges	_____ %				
1.3	Subtotal A(EXW Price)					
1.4a	CGST	_____ %				
1.4b	SGST	_____ %				
1.4c	IGST	_____ %				
1.4d	Cess	_____ %				
1.5	Subtotal B					
1.6 a	Freight to BHEL R&D Hyderabad Stores,	_____ %				
1.6 b	Insurance to BHEL R&D Hyderabad Stores,	_____ %				
1.6c	GST including Cess on 1.6a & 1.6b if any	_____ %				
1.7	Total Price (Delivery to BHEL Stores) (1.5 + 1.6 a+1.6b +1.6c)					

SIGNATURE OF THE BIDDER WITH SEAL

Establishment of 150kW Traction Motor Test Rig- Bid Formats

2.0	E&C Activities					
2.1	Integration and Programming	Lot	1			
2.2	Erection and Commissioning	Lot	1			
2.3	Demonstration at site of installation	Lot	1			
2.4	Post-installation training	Lot	1			
2.5	Sub Total C=2.1+2.2+2.3+2.4	_____ %				
2.6a	CGST	_____ %				
2.6b	SGST	_____ %				
2.6c	IGST	_____ %				
2.6d	Cess	_____ %				
2.7	Subtotal B					
	Grand total=1.7+2.5+2.7					

1. Rates to be quoted in figures with corresponding words.
2. All taxes and Duties to be submitted in Unpriced Bid also
3. Vendor's undertaking: I/We have read and understood the NIT terms and conditions.

SIGNATURE OF THE BIDDER WITH SEAL

ANNEXURE-IV

Non-Comprehensive Annual Maintenance Charges:

Sl No	Year wise after completion of warranty	Applicable charges
1	1 st Year	____%
2	2 nd Year	____%
3	3 rd Year	____%

SIGNATURE OF THE BIDDER WITH SEAL