



RD:DP:MPX:F-04

Ref: 501453861

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

PHONES:23774494 (EXT:9804)

FAX : 91 40 23770698

ENQUIRY

Date 13-12-2014

Enquiry for **Supply, testing, commissioning of 315KW VFD into the existing panel.**

Enquiry No:501453861

Enquiry Date : 13-12-2014

Due Date: 03-01-2015

Indicative Delivery Date : 14-03-2015

Sl.No	Item Description	Unit	Qty
1	Supply, installation and commissioning of latest model of 315 KW VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel as per the enclosed technical specifications ANNEXURE - I&II	SET	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

MKVH Sarma
Addl GM (MPX)
sarma_mkvh@bhelmd.co.in

	ENQUIRY & QUALIFYING CRITERIA	Volume - 1 Enquiry No 501453861
Supply, testing, commissioning of 315KW VFD into the existing panel.		

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) Supply, installation and commissioning of latest model of 315 KW VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel as per the enclosed technical specifications ANNEXURE - I&II - 1 SET
3	Enquiry Reference no.	501453861
4	Indicative Delivery Date	14-03-2015
5	Due date, Time and place for submission of tender	03-01-2015 upto 12 noon. Sealed Quotations shall be addressed to AGM(MM), BHEL R & D Division, Vikas Nagar (Near Balanagar), Hyderabad Telangana,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. 03-01-2015, 2 PM
7	Mode of Submission of Tender	<p>Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below.</p> <ol style="list-style-type: none"> 1. First Cover shall contain: <ol style="list-style-type: none"> a. Technical & Commercial bid. b. Filled in commercial compliance statement(mandatory) c. Copy of Price-bid with price(s) cells blank (un-priced price bid) 2. Second cover shall contain Price Bid. Price Bid Containing Price quotes, 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. <p>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.</p> <p>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.</p> <p>The e-mail offers should have two attachments. One attachment shall contain a) Technical & Commercial bid b) Filled in Commercial Compliance Statement (mandatory) and c) Copy of price bid with price(s) cells blank (un-priced price bid). The second attachment shall contain price bid.</p> <p>The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.</p>

	GENERAL TERMS & CONDITIONS (GTC)	Volume - 1 Enquiry No 501453861
Supply, testing, commissioning of 315KW VFD into the existing panel.		

SL.No.	Clause	BHEL REQUIREMENT
1	General	<p>a. All offers must include name of the contact person, phone no/mobile no, Fax no, email-id. Unsigned offers are liable for rejection.</p> <p>b. We, BHEL R&D, is registered with Department of Scientific and Industrial Research (DSIR) for the purpose of availing Customs Duty exemption in terms of Government Notification no.24/2007-Customs dated 01-Mar-2007 & Central Excise Duty Exemption in terms of Government Notification No. 16/2007-Central Excise dated 01-Mar-2007 as amended from time to time. Hence suppliers are requested to submit their bids clearly stating applicable taxes/duties. All foreign quotes will be evaluated with custom duty @ 5.15% for cost comparison.</p> <p>c. Taxes & Duties quoted will be taken for evaluation of landed cost & order placement and no change will be entertained later except in the case of changes made by the government. However please note that we are availing cenvat credit for service tax and hence service tax will be excluded in calculation of landed cost to BHEL. In case any Taxes/ Duties exempted, a self declaration for the same may be attached to the offer. Changes in taxes and duties because of the changes in turn over etc will be to supplier's account.</p> <p>d. Where ever vendor registration form and EFT details have been submitted earlier, the same need not be submitted again unless there is a change.</p> <p>e. BHEL R&D do not issue 'C' form .</p> <p>f. L1 status shall be decided on Cost to BHEL Basis.</p>
2	Foreign Suppliers	<p>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 containing agency commission.</p> <p>Any supplier (Agents/distributors/representatives) desirous of quoting imported goods/services, they should submit the quote in foreign currency along with agency agreement copy, failing which their offer is liable for rejection.In case of non submission of agency agreement copy,the principal should submit the quotation to BHEL directly. Foreign supplier will also indicate in their offer Indian agent's name, if any, address and percentage of agency commission out of the quoted price.</p> <p>Fully owned Indian Subsidiaries/distributors of Foreign Companies shall quote in Foreign Currency on FOB basis only.</p>
3	Late Tenders	Tenders received after due date/time(12:00hrs) will not be considered
4	Discrepancy in words and figures	<p>(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.</p> <p>(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</p> <p>(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.</p> <p>(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.</p>
5	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.
6	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.
		All offers in price bid opening or reverse auction shall be evaluated in Indian

7	Price bid evaluation	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.
8	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.
9	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.
10	Risk Purchase	In case of default/late delivery, BHEL reserves the right to make alternate arrangement for procurement at suppliers risk and cost.
11	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.
12	Over All L1	Order will be placed on overall L1 basis. Vendors should quote for all items, otherwise the offer will be rejected.
13	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.
14	Arbitration	Subject to the jurisdiction of Hyderabad/Secunderabad, Andhra Pradesh, India in respect of any suit or other legal proceedings relating this contract.
15	Micro Small Enterprises (MSEs)	<p>In case the supplier belongs to MSEs (Micro Small Enterprises), Registration copy in this respect shall be submitted along with the offer. Further if MSEs are owned by the Scheduled Caste or the Scheduled Tribe entrepreneurs the same may be intimated. The following are the benefits for the MSEs.</p> <ol style="list-style-type: none"> 1. MSEs are given tender documents free of cost and are exempted from payment of earnest money (EMD). 2. In tender, participating MSEs quoting price within price band of L1+15% shall also be allowed to supply a portion of requirement by bringing down their price to L1 price in a situation where L1 price is from someone other than a MSE and such MSE shall be allowed to supply up to 20% of total tendered value. In case of more than one such MSE, the supply shall be shared proportionately. <p>MSE suppliers can avail the intended benefits only if they submit along with offer, attested copies of either EM II certificate having deemed validity (Two years from the date of issue of acknowledgement in EM-II) or valid NSIC certificate or EM II certificate along with CA certificate (Format as below) applicable for the year, certifying quantum of investment in plant and machinery within the permissible limit as per the act for relevant status (Micro or small) Where the deemed validity of EM II is over. Date to be reckoned for determining the deemed validity will be the last date of technical bid submission. 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.</p> <p style="text-align: center;">Certificate by chartered Accountant on letter head</p> <p>This is to certify that M/s, (hereinafter referred to as 'company') having its registered office at is registered under MSMED Act 2006, (Entrepreneur Memorandum No(Part-II) dtd:....., Category:.....(Micro/Small). (Copy enclosed). Further verified from the Books of Accounts that the investment of the company as on date..... as per MSMED Act 2006 is as follows :</p> <ol style="list-style-type: none"> 1. For manufacturing Enterprises : Investment in plant and machinery (i.e. Original cost excluding land and building and the items specified by the ministry of small Scale Industries vide its notification No.S.O.1722(E) dated October 5, 2006. 2. For Service Enterprises : Investment in equipment (Original cost excluding land and building and furniture, fittings and other items not directly related to the service rendered or as may be notified under the MSMED Act, 2006: <p>Rs..... Lacs The above investment of Rs..... Lacs is within permissible limit of Rs..... Lacs forMicro/Small (Strike off</p>

		<p>which is not applicable) Category under MSMED Act 2006.</p> <p>Date:</p> <p>(Signature)</p> <p>Name-</p> <p>Membership number –</p> <p>Seal of Chartered Accountant</p>
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.

Signature of the bidder with Seal & Date

	COMMERCIAL TERMS & CONDITIONS (CTC)	Volume - 1 Enquiry No 501453861
Supply, testing, commissioning of 315KW VFD into the existing panel.		

SL.No.	Clause	BHEL REQUIREMENT	SUPPLIERS ACCEPTANCE / REMARKS
1	Reverse Auction	<p>BHEL reserves the right to go for Reverse Auction (RA) instead of opening the sealed envelope price bid, submitted by the bidder. This will be decided after techno-commercial evaluation. All bidders to give their acceptance 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.</p> <p>In case BHEL decides to go for Reverse Auction, only those bidders who have given their acceptance to participate in RA will be allowed to participate in the Reverse Auction. Those bidders who have given their acceptance to participate in Reverse Auction will have to necessarily submit „online sealed bid“ in the Reverse Auction.</p> <p>Non-submission of „online sealed bid“ by the bidder will be considered as tampering of the tender process and will invite action by BHEL as per extant guidelines in vogue.</p>	
2	Two part	<p>Please submit your offer in one common sealed cover containing two parts in separate sealed covers as detailed below.</p> <p>1. First Cover shall contain:</p> <ol style="list-style-type: none"> Technical & Commercial bid. Filled in commercial compliance statement(mandatory) Copy of Price-bid with price(s) cells blank (un-priced price bid) <p>2. Second cover shall contain Price Bid. Price Bid Containing Price quotes, 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.</p> <p>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.</p> <p>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.</p> <p>The e-mail offers should have two attachments. One attachment shall contain a) Technical & Commercial bid b) Filled in Commercial Compliance Statement (mandatory) and c) Copy of price bid with price(s) cells blank (un-priced price bid). The second attachment shall contain price bid.</p> <p>The subject of the e-mail should contain Enquiry No, Enquiry Date and Due date.</p>	
3	Weight and Packing Dimensions.	The Supplier shall indicate the shipping weight (Kgs) and dimensions(L x W x H in cms) clearly along with offer.	
4	Validity of Offer	90 days from date of techno-commercial bid opening.	
5	Price basis	<p>The prices shall be firm for entire period of contract.</p> <p>The suppliers shall indicate packing and forwarding charges,if any, separately.</p> <p>All foreign suppliers shall quote the lowest prices on 'FOB-Nearest International Airport/Sea port' basis. An amount of 3% on basic value towards freight and insurance will be added for cost comparison.</p> <p>All Indian suppliers shall quote the lowest prices on 'free delivery at BHEL R&D Stores or F.O.R destination' basis only.</p>	
6	LD Clause	Failure to supply the goods and/or 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).	
		a) For Indian Offers : BHEL standard payment term is "100% payment along with taxes by EFT/RTGS within 30 days of receipt and acceptance of material at BHEL	

7	Payment Terms	R&D Stores,Hyderabad". For other payment terms there will be a loading on the offer as mentioned in our "Loading Factors" sheet which is enclosed to this enquiry. b) For Foreign Offers : BHEL standard payment term is "100% Invoice value by wire transfer within 30 days of receipt and acceptance of material at BHEL R&D Stores,Hyderabad". For other payment terms there will be a loading on the offer as mentioned in our "Loading Factors" sheet which is enclosed to this enquiry.All bank charges inside India shall be to BHEL account and outside India shall be to supplier's account.	
8	Freight & Insurance	Insurance will be arranged by BHEL in case of FCA / FOB basis supplies.In such cases ,an amount of 3% towards freight and insurance will be added for cost comparison.	
9	Agency Agreement	<p>Guidelines regarding dealing with Indian agents of foreign suppliers</p> <ol style="list-style-type: none"> 1. BHEL shall 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 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 agent / associate, whether general in nature or in relation to the particular contract, must clearly stated by the foreign supplier / Indian agent. Any payment, which the 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. 	
10	Delivery Period	<p><u>FOR INDIAN SUPPLIES :</u></p> <p>Suppliers are requested to quote for the delivery mentioned in the enquiry. However, in case it is not possible to meet the delivery requirement of BHEL, they shall mention in the right column the best possible delivery period</p> <ol style="list-style-type: none"> 1) From date of Purchase order =====> 2) From receipt of material / input data / drawings etc. from BHEL=====> (if applicable) 3) From receipt of approval of design documents / drawings etc. by BHEL=====> (if applicable) 4) Time from PDI to despatch =====> (if applicable) <p>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.</p> <hr/> <p><u>FOR FOREIGN SUPPLIES :</u></p> <p>Suppliers are requested to quote for the delivery mentioned in the enquiry. However, in case it is not possible to meet the delivery requirement of BHEL, they shall mention in the right column the best possible delivery period</p> <ol style="list-style-type: none"> 1. From date of Purchase order :=====> 2. From receipt of input data / drawings etc. from BHEL=====> (if applicable) 3. From receipt of approval of design documents / drawings etc. by BHEL=====> (if applicable) 4. From date of LC Opening=====> 	

		(if applicable) 5. From date of PO acceptance =====> (wherever issues like export clearance etc. are involved, mentioning the reasons) 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.	
11	Taxes and duties	All Indian suppliers shall clearly mention current sales tax/VAT,Excise duty and Service Tax etc, if any,payable in addition to the quoted price and indicate applicable rates/percentage,item-wise clearly.The vendors should mention applicable Registration Number(s) specifically in their quotation.The suppliers are requested to submit their bids clearly stating applicable taxes and duties.The quoted taxes/duties will be taken for cost evaluation and order placement and no change will be entertained later except in the case of changes made by the government. Please note that we are availing cenvat credit for service tax and hence service tax will be excluded in calculation of landed cost to BHEL. However Proof of payment of service tax is required to be submitted for reimbursement of the same.	
12	E&C	Supplier to quote Supply and E&C portion with relevant taxes and time requirement separately. BHEL reserves the right to issue two separate orders.	

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.

Signature of the bidder with Seal & Date

	ITEM SPECIFICATIONS	Volume - 2 Enquiry NO 501453861
Supply, testing, commissioning of 315KW VFD into the existing panel.		

SL.No.	Item			
1	Supply, installation and commissioning of latest model of 315 KW VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel as per the enclosed technical specifications ANNEXURE - I&II			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	Supply, installation and commissioning of latest model of 315 KW VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel as per the enclosed technical specifications ANNEXURE - I	Supply, installation and commissioning of latest model of 315 KW VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel as per the enclosed technical specifications ANNEXURE - I&II	
G	General Specifications			
	sl no	Descriptions	BHEL Specifications	Vendor Specifications/ Deviations
	1	IMPORTANT NOTE:	Vendor should furnish TECHNICAL COMPLIANCE STATEMENT in the enclosed format as per ANNEXURE-III along with Technical bid FOR EACH OF THE ITEMS OFFERD SEPERATLY. The Vendor should not say Complied, should explicitly specify the specification of the items offered. The deviations if any may clearly be indicated, in case of it either being better or worse than the indicated requirements. BHEL reserves the option to disqualify the tender if the statement as per ANNEXURE-III is not submitted and relevant information is not indicated in the compliance statement.	
	2	Warranty	All supplied items to be provided with warranty for 36 months from the date of commissioning.	
	3	E&C Charges	should be quoted separately	
	4	Manufactures Test Certificate	Manufacturer's Test Certificate required and shall be provided before dispatch.	
	5	Spares	Offer shall include all the spares required for normal operation of equipment.	
	6	Minimum Acceptable Warranty	Supplier shall comply to the minimum acceptable warranty period.The offers of the suppliers not complying to the minimum warranty period will be rejected. The minimum acceptable warranty period is 36 months.	

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

BHEL R&D
RD:DP:MPX:F-22

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)					
SLNO	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, AWB 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
				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
B. FOR FOREIGN PURCHASES (IMPORTED)					
SLNO	SCOPE	COMMERCIAL TERMS	BHEL STANDARD TERM	AS OFFERED	LOADING FACTOR FOR NON COMPLIANCE TO BHEL STANDARD TERMS
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	SAME	NIL
				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
				PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE (90-X)% PAYMENT BY WIRE TRANSFER /LC AFTER 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 nearest month) + ONE MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON BALANCE (90-X)% FOR ONE MONTH
PART ADVANCE (X%) PAYMENT BY WIRE TRANSFER /LC WITH BANK GUARANTEE AND BALANCE (90-X)% PAYMENT BY WIRE TRANSFER /LC 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 nearest month) + ONE MONTH AND LOADING @ (SBI BASE RATE ON TENDER OPENING DATE+6%) ON BALANCE AMOUNT (100-X)% FOR ONE MONTH				

C. PENALTY FOR DELAYED DELIVERY (COMMON FOR INDIGENOUS AND IMPORTS)				
SLNO	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)				
SLNO	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 (X)	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?s 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
 Vikasnagar
 HYDERABAD- 500 093 (INDIA)
 Ph: 040 - 23772704, Fax: 040 - 23770698, email: mpx@bhelrnd.co.in

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

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		
6		

9.0 REFERENCE LIST :

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

#	Customer	Volume / Year
1		
2		
3		
4		
5		
6		
7		

10.0 INFRASTRUCTURE / FACILITIES:

#	Facility (with specifications)	Age/ Year procured

1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

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 REGISTRTION

(Attach brochures 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 brochures, 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 relevant authorisation letter and agreement copy to be enclosed along with Technical bid to consider the offer.

TECHNICAL SPECIFICATIONSSCOPE OF SUPPLY:

Supply, installation and commissioning of latest model of VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel to suit 315 KW. The details existing external force cooled induction motor and VFD control panel at BHEL R&D are given below:

A) Existing Motor Details

Make: A B B

Model: M2BA 355NL02

Type: Squirrel Cage External force cooled Induction Motor.

Direction of rotation: Bi – directional

Operating Voltage: 3 Phase 415 Volts

Rating: 315 KW

Current Rating: 510 Amps

Efficiency: 96%

Frequency: 50 Hz

Speed: 2982 RPM

B) Existing VFD Control panel Details

- VFD Panel Construction and cooling: Totally enclosed construction with ventilation and External forced cooled with air as medium.
- VFD Modules: ABB ACS 600 - 2 Nos. with control card DRIVE CONTROL UNI NDCU- 12CK - 1 No., Main Circuit INTE NINT - 43C - 2 Nos, and PPCS BRANCHING UN NPBU-42C - 1 No.
- Indication LED lamps: For **DRIVE RUN / READY, DRIVE FAULT**, etc. on Front Door of the Control panel
- Provision for selection of direction of Rotation of the Motor (FWD/REV) on Front Door of the Control panel.
- Potentiometer for variation of motors speed on Front Door of the Control panel
- Push buttons for **DRIVE START, DRIVE STOP**, and **EMERGENCY STOP** on Front Door of the Control panel.
- Three Phase mains Input power indicating LED lamps for R, Y, B phases.
- Analog type panel meters on Front Door of the Control panel for indication of Input Voltage & Input current.
- TPN SFU in control panel with operating Handle on the Front Door of the Control panel.
- VFD control key pad on Front Door of the Control panel.
- In put & out put power cables.

1.0 VENDOR's SCOPE OF WORK

1.01 Supply, installation & commissioning of VFD module suitable for above 315 KW rating motor as per the specification attached (ANNEXURE - II) in the existing control panel with provision to run the VFD through software on PC from control room (Approx control cable length required: 25 Mtrs.) and also to run the motor Bi-directionally (Forward & Reverse).

Accepted make for VFD: Yaskawa / Mitsubishi / Emerson / ABB / Hitachi Hi-Rel / Siemens only.

1.02 Preparation of the modified Circuit drawings of the VFD panel.

1.03 Removal of Existing VFD modules.

1.04 Modification of existing panel Bus Bars & circuit wiring by integrating the new VFD module.

- 1.05 Supply of required Power & control cables, PVC cable trays and Re-wiring of panel to suit new VFD module. All the consumables required for re-wiring like cable lugs, ferrules, terminals, LEDs etc are in the scope of the Vendor.
- 1.06 Re-wiring of the VFD panel as per the modified circuit design.
- 1.07 Re-wiring is to be carried out by using the existing hardware. In case of any replacement of existing hardware is required; the same should be in the scope of Vendor.
- 1.08 Digital panel meters with an accuracy of 0.5% of full scale \pm 1 digit on Front Door of the Control panel for indication of the following parameters:
 - a) Input Voltage.
 - b) Input current.
 - c) RPM Indication
- 1.09 All the indications & other features as given in the above Control Panel details are to be provided after modification of control panel circuit.

2.0 DELIVERIBLES

- 2.01 Supply of VFD module with Modified Panel and commissioning of the VFD system.
- 2.02 Modified Circuit design drawings.
- 2.03 3 Sets of O&M manuals for the new VFD module & modified Circuit drawings of control panel.
- 2.04 P.C Inter face Software with necessary control cables for remote operation.

3.00 General Requirements

- 3.01 All tools and tackles required for carrying out the modification work are in the scope of the supplier.
- 3.02 The vendor shall visit the site and assess the scope of work before submitting the offer.
- 3.03 **The new VFD module is to be supplied with 3 Years warranty.**
- 3.04 The vendor shall guarantee 36 months trouble free service/operation of the new VFD module & modified VFD Panel after completion of modification of the equipment.
- 3.05 The Vendor shall quote separately as an option for AMC charges for trouble free service / operation of the modified VFD Panel for a period of 2 years with yearly price break up, after expiry of 3 years guarantee period.
- 3.06 The vendors shall visit TML lab in BHEL R&D, for inspecting the existing control panel and components mounted inside the panel for suitability of these components for quoted VFD module with controller.
- 3.07 The Vendor shall submit the tentative layout of the VFD panel & all the relevant technical brochures of new VFD module offered along with the Technical bid for evaluation.
- 3.08 Any other requirements not set forth in these specifications, but necessary for the safe and reliable operation of the equipment shall be included. Quantities other than specified shall be supplied for satisfactory commissioning of the equipment. Variations due to site requirement shall be incorporated.
- 3.09 The vendor should have supplied similar / higher rating VF Drive to any BHEL units with trouble free operation for at least one year. Details of such supply shall be indicated in the Technical bid.
- 3.10 **Vendor should furnish TECHNICAL COMPLIANCE STATEMENT in the enclosed format as per ANNEXURE-III along with Technical bid FOR EACH OF THE ITEMS OFFERED SEPERATLY.** The Vendor should not say Complied, should explicitly specify the specification of the items offered. The deviations if any with reference to BHEL specifications may clearly be indicated. BHEL reserves the right to disqualify the tender if the statement as per ANNEXURE-III is not submitted and relevant information is not indicated in the compliance statement.

- 3.11 Vendor must submit complete information against clause No. 3.09 & 3.10 The offer meeting this clause would only be processed. BHEL reserve the option to disqualify the tender in case of non-conformity of the above conditions (4.15 & 4.16).
- 3.12 All technical conditions being same, vendors with servicing facilities in Hyderabad shall be given preference taking the logistics into consideration for the maintenance of the system.
- 3.13 The Un-priced price bid shall be enclosed to the Technical bid

Variable frequency Drive (VFD) Module Specifications

The variable frequency drive shall be used for speed control of a 315 KW squirrel cage AC Induction motor as per the specifications given below above coupled to a Compressor Stage running at 300 to 3000 RPM.

Input voltage	415 V, 3-phase, $\pm 10\%$ variation
Input frequency	50 Hz, $\pm 5\%$ variation
kVA rating	Suitable to drive 315 kW Induction motor
Load	Compressor Stage Test Rig (Torque is proportional to square of speed)
Over load capacity	150% for 60 sec
Power	Constant torque from 5 HZ to 60 HZ , Constant power beyond 60 HZ.
Inverter frequency	0 Hz to 300 Hz (upper and lower limit adjustable)
Inverter efficiency	98% or better
Output voltage waveform	Sine weighted PWM or SVPWM
Switching frequency of inverter	Shall not be less than 4 kHz
Acceleration/Deceleration time	1 to 60 seconds (adjustable)
Control Principle	V/f control / Vector/ DTC control
V/f patterns response (user selectable)	For maximum efficiency and good dynamic response
I/O features	Analog/Digital/relay for sequential start/stop, remote operation etc.
Displays	Alpha-numeric display windows for voltage, current, frequency, torque, power factor, input power, over speed, over temperature, type of faults etc.
PC interface	The drive should have inbuilt feature for interface with PC for control, monitor and data logging
VFD Interface Software	Latest Window based software for programming, data display, fault monitoring and measuring various parameters, start up and maintenance, remote monitoring etc.
Protections	<ul style="list-style-type: none"> a. Over voltage (adjustable) b. Under voltage (adjustable) c. Over current (adjustable) d. Short circuit at out put terminals e. Loss of Dc link over voltage. f. Loss of phase (s) g. Reverse Phase sequence h. DC Link over Voltage i. Shoot through j. VFD Cubicle over temperature k. Visual & Audible alarms for the above faults
Atmospheric conditions	Ambient temp 45 ⁰ C
Humidity	90% (Non condensing)

**TECHNICAL SPECIFICATION CUM COMPLIANCE STATEMENT
FOR SUPPLY, INSTALLATION AND COMMISSIONING OF
LATEST MODEL OF 315 KW VFD MODULE**

SCOPE OF SUPPLY:

Supply, installation and commissioning of latest model of VFD module (Spare for replacement) with suitable controller and P.C interface software for remote operation with control cables in the existing Control Panel to suit 315 KW. The details existing external force cooled induction motor and VFD control panel at BHEL R&D are given below:

A) Existing Motor Details

Make: A B B
 Model: M2BA 355NL02
 Type: Squirrel Cage External force cooled Induction
 Motor. Direction of rotation: Bi – directional
 Operating Voltage: 3 Phase 415 Volts
 Rating: 315 KW
 Current Rating: 510
 Amps Efficiency: 96%
 Frequency: 50 Hz
 Speed: 2982 RPM

B) Existing VFD Control panel Details

- VFD Panel Construction and cooling: Totally enclosed construction with ventilation and External forced cooled with air as medium.
- VFD Modules: ABB ACS 600 - 2 Nos. with control card DRIVE CONTROL UNI NDCU- 12CK - 1 No., Main Circuit INTE NINT - 43C - 2 Nos, and PPCS BRANCHING UN NPB-42C - 1 No.
- Indication LED lamps: For DRIVE RUN / READY, DRIVE FAULT, etc. on Front Door of the Control panel
- Provision for selection of direction of Rotation of the Motor (FWD/REV) on Front Door of the Control panel.
- Potentiometer for variation of motors speed on Front Door of the Control panel
- Push buttons for DRIVE START, DRIVE STOP, and EMERGENCY STOP on Front Door of the Control panel.
- Three Phase mains Input power indicating LED lamps for R, Y, B phases.
- Analog type panel meters on Front Door of the Control panel for indication of Input Voltage & Input current.
- TPN SFU in control panel with operating Handle on the Front Door of the Control panel.
- VFD control key pad on Front Door of the Control panel.
- In put & out put power cables.

Technical Specifications:	Suppliers's Compliance
1.0 VENDOR's SCOPE OF WORK	
1.01 Supply, installation & commissioning of VFD module suitable for above 315 KW rating motor as per the specification attached (ANNEXURE - II) in the existing control panel with provision to run the VFD through software on PC from control room (Approx control cable length required: 25 Mtrs.) and also to run the motor Bi-directionally (Forward & Reverse). Accepted make for VFD: Yaskawa / Mitsubishi / Emerson / ABB / Hitachi Hi-REL/ SIEMENS Only	
1.02 Preparation of the modified Circuit drawings of the VFD panel.	
1.03 Removal of Existing VFD modules.	

Technical Specifications:	Suppliers's Compliance
1.04 Modification of existing panel Bus Bars & circuit wiring by integrating the new VFD module.	
1.05 Supply of required Power & control cables, PVC cable trays and Re- wiring of panel to suit new VFD module. All the consumables required for re-wiring like cable lugs, ferrules, terminals, LEDs etc are in the scope of the Vendor.	
1.06 Re-wiring of the VFD panel as per the modified circuit design.	
1.07 Re-wiring is to be carried out by using the existing hardware. Incase of any replacement of existing hardware is required; the same should be in the scope of Vendor.	
1.08 Digital panel meters with an accuracy of 0.5% of full scale + 1 digit on Front Door of the Control panel for indication of the following parameters: a) Input Voltage. b) Input current. c) RPM Indication	
1.09 All the indications & other features as given in the above Control Panel details are to be provided after modification of control panel circuit.	
<u>2.0 DELIVERIBLES</u>	
2.01 Supply of VFD module with Modified Panel and commissioning of the VFD	
2.02 Modified Circuit design drawings.	
2.03 3 Sets of O&M manuals for the new VFD module & modified Circuit drawings of control panel.	
2.04 P.C Inter face Software with necessary control cables for remote operation.	
<u>3.00 GENERAL REQUIREMENTS</u>	
3.01 All tools and tackles required for carrying out the modification work are in the scope of the supplier.	
3.02 The vendor shall visit the site and asses the scope of work before submitting the offer.	
3.03 The new VFD module is to be supplied with 3 Years warranty.	
3.04 The vendor shall guarantee 36 months trouble free service/operation of the new VFD module & modified VFD Panel after completion of modification of the equipment.	
3.05 The Vendor shall quote separately as an option for AMC charges for trouble free service / operation of the modified VFD Panel for a period of 2 years with yearly price break up, after expiry of 3 years guarantee period.	
3.06 The vendors shall visit TML lab in BHEL R&D, for inspecting the existing control panel and components mounted inside the panel for suitability of these components for quoted VFD module with controller	
3.07 The Vendor shall submit the tentative layout of the VFD panel & all the relevant technical brochures of new VFD module offered along with the Technical bid for evaluation.	
3.08 Any other requirements not set forth in these specifications, but necessary for the safe and reliable operation of the equipment shall be included. Quantities other than specified shall be supplied for satisfactory commissioning of the equipment. Variations due to site requirement shall be incorporated.	
3.09 The vendor should have supplied similar rating VF Drive to Corp. R&D or Other BHEL units with such drives in trouble free operation for at least one year. Details of such supply shall be indicated in the Technical bid..	
3.10 Item wise Compliance statement as per ANNEXURE - III is to be enclosed along with the technical bid.	

Technical Specifications:		Suppliers's Compliance
3.11 All technical conditions being same, vendors with servicing facilities in Hyderabad shall be given preference taking the logistics into consideration for the maintenance of the system.		
3.12 The Unpriced price bid shall be enclosed to the Technical bid.		
<u>Variable frequency Drive (VFD) Module Specifications</u>		
The variable frequency drive shall be used for speed control of a 315 KW squirrel cage AC Induction motor as per the specifications given below above coupled to a Compressor Stage running at 300 to 3000 RPM.		
Input voltage	415 V, 3-phase, $\pm 10\%$ variation	
Input frequency	50 Hz, $\pm 5\%$ variation	
kVA rating	Suitable to drive 315 kW Induction motor	
Load	Compressor Stage Test Rig (Torque is proportional to square of speed)	
Over load capacity	150% for 60 sec	
Power	Constant torque from 5 HZ to 60 HZ , Constant power beyond 60 HZ.	
Inverter frequency	0 Hz to 300 Hz (upper and lower limit adjustable)	
Inverter efficiency	98% or better	
Output voltage waveform	Sine weighted PWM or SVPWM	
Switching frequency of inverter	Shall not be less 4 kHz	
Acceleration/Deceleration time	1 to 60 seconds (adjustable)	
Control Principle	V/f control / Vector/ DTC control	
V/f patterns response (user selectable)	For maximum efficiency and good dynamic response	
I/O features	Analog/Digital/relay for sequential start/stop, remote operation etc.	
Displays	Alpha-numeric display windows for voltage, current, frequency, torque, power factor, input power, over speed, over temperature, type of faults etc.	
PC interface	The drive should have inbuilt feature for interface with PC for control, monitor and data logging.	
VFD Interface Software	Latest Window based software for programming, data display, fault monitoring and measuring various parameters, start up and maintenance, remote monitoring etc.	
Protections	Over voltage (adjustable) Under voltage (adjustable) Over current (adjustable) Short circuit at out put terminals Loss of Dc link over voltage. Loss of phase (s) Reverse Phase sequence DC Link over Voltage Shoot through VFD Cubicle over temperature Visual & Audible alarms for the above faults	
Atmospheric conditions	Ambient temp 450C	
Humidity	90% (Non condensing)	

Signature of the Bidder with Seal & Date

Important:

Vendor should furnish **COMPLIANCE STATEMENT FOR EACH OF THE ITEMS OFFERED SEPARATELY**. The Vendor should not say Complied, should explicitly specify the specification of the items offered. The deviations if any may clearly be indicated, in case of it either being better or worse than the indicated requirements. BHEL reserves the option to disqualify the tender if the relevant information is not indicated properly in the compliance statement.