



**NOTICE INVITING TENDER FOR DESIGN, SUPPLY, ERECTION AND COMMISSIONING
OF AUTOMATION OF MANUFACTURING TECHNOLOGY AND MATERIAL HANDLING
SYSTEM FOR MASS PRODUCTION OF DISC INSULATORS IN BHEL/EPD,**

Ref. : EPD/WEX/PROJ/AUTO/STAGE-I/1044

14.2.2011

***“Design & Development of Automation Systems for mass manufacturing of higher rating
porcelain disc insulators” – Stage I : AUTOMATATION SYSTEM FOR PUGGING & JIGGERING
STATION***

Bharat Heavy Electricals Ltd, Electro Porcelains Division, (a Government of India Enterprises) intends to establish Development of manufacturing technology for mass production of high rating (420 kN & above) disc insulators in the manufacturing areas located at IISC post, Bangalore.

Sealed bids are invited under two part bid system from the interested suppliers with sound technical and financial capabilities fulfilling the qualifying requirements stated in the bid document. Interested vendors may make visit BHEL works for better understanding before submitting their bids.

Interested and eligible suppliers may study the tender document carefully and offer their bids in English in the form of Part I i.e. Techno Commercial bid without giving any indication of price. Price has to be furnished only in the “Price Bid Format ” . A copy of the duly signed “Price Bid Format” without mentioning the price (Un priced Priced Bid) has to accompany the Techno Commercial Bid. Since finalisation of the tender in “Reverse Auction Basis” may be resorted to, the price has to be quoted in the Price Bid Format only. Furnishing of Price in any other form will not be entertained. Price bid shall be complete in all respects indicating basic price, applicable taxes and duties, Packing & Forwarding charges(if applicable), and freight and insurance charges for a) supply, b) Erection and commissioning c) Documentation, d) Service, e) Testing, f) Training etc at EPD/Bangalore.

The offer should be submitted in sealed covers super scribing tender number & due date addressed to

AGM/MM

Bharat Heavy Electricals Ltd ; Electro Porcelains Division

PB No: 1245, Science Institute Post

Bangalore – 560 012

TENDER NO: : EPD/WEX/PROJ/AUTO/STAGE-I/1044

DESCRIPTION : AUTOMATATION SYSTEM FOR PUGGING & JIGGERING STATION

DUE DATE : 8.3.2011

Please go through the contents carefully and the offer with other details as mentioned in this NIT (Notice inviting tender) needs to be dropped within the due date in to the Tender box earmarked which is kept at the reception of BHEL /EPD, Bangalore.

Techno commercial bid i.e. Part I will be opened on the tender opening day in the presence of tenderers who represent at the time of opening

AGM/MM



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Important General Instructions :

Please read the instructions CAREFULLY.

BHEL **strongly believes** / prefers to **deal directly** with **OEM Vendors**. In the event prospective vendor desires to avail the services of Indian Agent, then the principal should ensure the compliance of regulatory guidelines. Refer annexure: INDIAN AGENT.

As BHEL has entered into an "Integrity Pact" with Transparency International Limited (TIL) and the Central Vigilance Commission (CVC; India's highest regulatory authority) to ensure complete transparency we have adopted open tender through Reverse Auction (RA) as procurement policy. Considering our past experience and positive fallouts to both buyer & bidder, **we encourage our prospective bidders to accept RA.** [NOTE: BHEL reserves the right to either go for Price bid opening or Reverse Auction] For clarification of further doubts on Reverse Auction (RA), we request you to approach our service providers, who will clarify all your genuine concerns.

BHEL encourages prospective vendors to download the tender documents directly from the web as it is simple and time effective.

Please submit your offer well in time without SEEKING time extensions. As this expansion project is in a tight schedule , Extension of due date will not be entertained.

Please accept BHEL commercial terms. In the event they are not acceptable please note that LOADING factors will be included in your price while finalizing tender priorities.

Important Instructions while preparing the techno commercial offer:

Please note that open tender is a two part enquiry and the techno commercial offer will be evaluated first.

Please note that Pre Qualification criteria are the most important clause in the specification cum compliance certification. Ensure that all details as sought in the said clause are given along with documentary proof wherever required. NOTE: BHEL will make independent verification with the information given under this clause.

Please give Page numbers to your offer and the covering letter is duly signed.

Please DO NOT give PRICE DETAILS in the techno commercial offer.

Please ensure that commercial terms are given in the format given by BHEL. Any remarks are to be given as "Deviations" in a separate letter quoting relevant references.

Annexure AGENT:



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BHEL **strongly believes** /prefers to **deal directly** with **OEM Vendors**. In the event prospective vendor desires to avail the services of Indian agent, then the principal should ensure the compliance of regulatory guidelines, which require mandatory submission of Agency Agreement . Enclose a copy of the agreement between principal and agent. (NOTE: In the absence of this agreement Indian Agent status can not be accorded and the foreign vendor has to deal directly with BHEL).

Such agreement SHOULD fulfill the following:

Agreement should be in place well before the enquiry date.

It should clearly stipulate the services that are rendered and commercial consideration between them.

The Commission or payment for the service tendered by the Indian Agent will be paid in INR.

The above listed requirements are only indicative and any other conditions stipulated by regulatory agency will be sought while finalizing the tender. Only after meeting all the above requirement your Indian Agent (**Please refer para 8.2 of General Terms and Conditions**) will be recognized by BHEL. Or else it is not possible to accept any agent as your representative. And Correspondence will be directly held with you as far as this tender is concerned.

DO's & DON'T's (INDICATIVE LIST only)

Dos

Dos	Consequence of non compliance
Sign on the covering letter	Offer will be treated as invalid and rejected
Adopt the format given in the tender document for specification and commercial terms	It will delay evaluation of tender and leads to a lot of avoidable correspondence
Reference details, wherever sought, are to be given	This is very important for pre-qualification clause of the specification
Adopt the format of Technical specification cum Compliance Certificate given in the tender documents	May lead to wrong capture of document details
Enclose Valid agency agreement copies along with the offer in case the foreign vendor wants to avail their services	Invalid agency agreement will violate regulatory guidelines.
Submit the tender well with in the tender	Request for extension will be given at the sole



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due date	discretion of BHEL.
Accept Reverse Auction as it gives the vendor an opportunity to bid competitively	BHEL reserves the right to reject the offer
Accept Standard BHEL commercial terms	Non acceptance will result in invocation of loading factors.
All local vendors have to give statutory levies like ED/CST/VAT / Service tax/ Works contract tax clearly.	In the absence of these details vatable credits, which will have a bearing on tender priorities, will not be considered.
Foreign vendors have to clearly understand the statutory levy clause in the commercial terms and conditions and note that Services rendered in India are subjected to service tax and Tax deduction at source clauses.	If the same is not accepted by vendor, it will be included in the landed cost of the vendor.

Dont's

Dont's	Consequence of doing
Please do not give price in techno-commercial offer when the tender is a two part bid	It will undermine bidders competitive position and also effects transparency.
Don't enter into transient agreements with Indian agents	Such agreements are invalid as per regulatory guidelines.
While healthy comparative evaluation emphasizing the strengths of your product over other products available in market is acceptable, don't evaluate the technical offers of your competitor in an accusatory tone.	Such correspondence will be perceived as litigious in nature and can be perceived as hindering the tender evaluation process.
Don't give price of main equipment under optional items head, except when specifically asked in the specification.	Optional items will not be considered for tender priority evaluation.



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Qualification criterion:

Sl. No	BHEL Standard Terms & Conditions	Supplier's confirmat ion Yes / No	If Yes , Documentary Evidence provided for Compliance
1	The vendor shall be an Original Equipment Manufacturer (OEM) or their authorized channel partner.		
2	The vendor shall have their own adequate manufacturing / integrating and testing facilities for the kind of work required for this project		
3	The vendor shall have proven track record for manufacturing, supply, testing and servicing of custom made automation systems or projects for mass manufacturing; preferably non-metallic products or components, reference of the works executed to be provided.		
4	The vendor shall be in the line of business for at least 3 years in the immediate past.		
5	The vendor shall be financially sound. The annual Turnover of the bidder shall be minimum twice the estimated cost of each package for undertaking the scale and type of work required for the execution of automation system envisaged		
6	The vendor shall submit audited balance sheet or tax returns for the last 3 years along with the offer.		
7	The vendor shall have qualified & experienced manpower and with adequate engineering setup for design, evaluation and validation of the systems envisaged		



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NOTE:

The offer should be accompanied by point wise compliance to Qualifying Criteria.

BHEL reserves the right to **reject the offer** having deviations to BHEL general terms & conditions

The qualification criterion as above is not exclusive of each other and successful bidders shall fulfill the entire criterion.

Bidders to provide documentary evidence for the qualification criterion set in along with the technical bids. BHEL at its discretion may verify the credentials provided for fulfilling the same.

Timely execution of the project is essential to the contract and delays are not acceptable. The bidders to give their acceptance for executing the project with in the mutually agreeable time period. Confirmation in this regard shall be provided in the offer. Non conformation and delivery period not meeting the requirement can be a reason for rejection of the offer.

Format for Techno Commercial Bid Part I

TENDER REFERENCE:

DATE OF ISSUE:

LAST DATE AND TIME FOR RECEIPT OF TENDER: 1

DATE & TIME OF TENDER OPENING (Techno commercial bid): 2

DETAILS OF THE VENDOR:

NAME AND ADDRESS OF THE TENDERING FIRM

PART I : (PRE QUALIFICATION BID)

a) Technical

PRE QUALIFICATION TECHNO COMMERCIAL BID SHOULD COVER ALL TECHNICAL QUALIFICATION DETAILS, EXPERIENCE DETAILS, AND CONTRACTUAL TERMS EXCLUDING PRICE.

b) Commercial

SL NO	DESCRIPTION	BHEL REQUIREMENT	VENDORS' OFFER
1. Terms of quote			
	1 A Indigenous	EX WORKS//FOR BHEL- EPD STORES	
	1 B. Imports	FOR Foreign port/CIF Port of Clearance//FOR BHEL-EPD STORES	
Applicable Taxes and duties			



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2	EXCISE DUTY/SERVICE TAX	%	
3	CESS ON ED/ Ser.Tax	%	
4	CST/VAT	%	
5	CUSTOM DUTY	%	
6	CVD	%	
7	CESS ON CVD	%	
8	SAD ON CD	%	
OTHER CHARGES			
9	PACKING CHARGES	TO MENTION	
10	FORWARDING CHARGES	TO MENTION	
11	FREIGHT	TO MENTION	
12	INSURANCE	TO MENTION	
13	PAYMENT TERMS : IMPORTS (Presuming 30 days for sailing of the materials from the date of dispatch and receipt at EPD Stores)	A) 70 % OF SUPPLY PRICE WITHIN 60 DAYS OF DESPATCH THROUGH LC B) 20 % OF SUPPLY PRICE AND 90 % OF COMMISSIONING CHARGES ON SUCCESSFUL COMPLETION OF TRIAL RUN AFTER COMMISSIONING C) BALANCE 10% OF SUPPLY PRICE AND 10% OF COMMISSIONING CHARGES AFTER WARRANTY PERIOD OR ON SUBMISSION OF PBG AFTER TRIAL RUN.	
14	PAYMENT TERMS INDIGENOUS	A) 70 % OF SUPPLY PRICE PLUS 100% TAXES AND DUTIES WITHIN 30 DAYS ON RECEIPT OF MATERIAL THROUGH NEFT B) 20% OF SUPPLY PRICE AND 90% OF COMMISSIONING CHARGES ON SUCCESSFUL COMPLETION OF TRIAL RUN AFTER COMMISSIONING C) BALANCE 10% OF SUPPLY PRICE AND 10% OF COMMISSIONING CHARGES AFTER WARRANTY PERIOD OR ON SUBMISSION OF PBG AFTER TRIAL RUN.	
15	DELIVERY TERMS	F.O.R BHEL-EPD-STORES	
16	LEAD TIME	MINIMUM LEAD TIME TO BE MENTIONED	
17	LD CLAUSE	0.5% per week up to a maximum of 10% OF THE TOTAL VALUE FOR DELAYED DELIVERY	
18	RISK PURCHASE CLAUSE	AS PER BHEL NORMS	
19	ANY OTHER CLAUSE		



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Format for Price bid - Part II

The Price Bid has to be furnished in the format Annexure I & II for Indigenous vendors and in Format Annexure III & IV for Foreign suppliers .

- 1) In case any import is envisaged in any of the items in the package by the indigenous vendors, the same should be clearly indicated and the element of CVD and SAD should be clearly mentioned in the price bid.
- 2) Whether the vendor will be able to pass on the CVD and SAD suffered in the imports, if any, to BHEL for availing credit should be stated.
- .
- 3) Prices are to be mentioned both in words and figures. In case of any variation between the two, the rate in words will be considered as the valid offer.

• **FOR INDIGENOUS OFFERS / SUPPLIES**
(TYPICAL FORMAT FOR ILLUSTRATION)
FOR BASIC EQUIPMENT

ANNEXURE - I

SL.NO.	DESCRIPTION	PRICE In Rs.
1	COST OF BASIC MACHINE (Name of the Machine : As per Tender)	
2	COST OF ACCESSORIES – IF ANY (DETAILS to be furnished)	
3	TOTAL EX-WORKS COST (1+2+3)	
4	PACKING & FORWARDING CHARGES (If applicable)	
5	EXCISE DUTY @ _____	
6	CESS ON EXERCISE DUTY @ _____	
7	ST / CST / VAT @ _____ :	
8	FREIGHT CHARGES	
9	INSURANCE CHARGES	
10	TOTAL VALUE (3+4+5+6+7+8+9)	



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ANNEXURE-II

FOR SERVICES

SL NO.	DESCRIPTION	PRICE IN Rs.
1	TRAINING CHARGES	
2	ERECTION & COMMISSIONING CHARGES / SUPERVISION CHARGES	
3	COMPONENT PROVE OUT CHARGES	
4	TOTAL SERVICE CHARGES (1+2+3)	
5	SERVICE TAX ON SERVICE CHARGES@	
6	TOTAL SERVICE COST	

- Determination of “Total Cost to BHEL” :
The Total Cost is arrived at by adding totals at Sl No.11 of annexure I and Sl.No 5 of annexure ii and deducting the total credit of E.D. and Service Tax together with 70% of the VAT.

**** FOR FOREIGN OFFERS / SUPPLIES (UNDER MERIT DUTY)**

**(TYPICAL FORMAT FOR ILLUSTRATION)
FOR BASIC EQUIPMENT**

ANNEXURE - III

SL.NO.	DESCRIPTION	PRICE In
1	COST OF BASIC MACHINE (Name of the Machine : As per Tender)	
2	COST OF ACCESSORIES (DETAILS to be furnished)	
3	TOTAL EX-WORKS COST (1+2+3)	
4	Freight to the port of loading and clearing charges	
5	FOB COST OF THE MACHINE	
6	INSURANCE & FREIGHT Charge (Up to Chennai Port)	
7	TOTAL	



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ANNEXURE – IV

FOR SERVICES

SL. NO.	DESCRIPTION	PRICE In
1	TRAINING CHARGES	
2	ERECTION & COMMISSIONING / SUPERVISION CHARGES	
3	COMPONENT PROVE OUT CHARGES	
4	TOTAL SERVICE CHARGES (1+2+3)	
5	SERVICE TAX ON SERVICE CHARGES @ %	
6	TOTAL SERVICE COST(4+5)	

**** Determination of “Total Cost to BHEL” (Imported) The Total Cost is arrived at by adding totals at Sl No.7 of annexure III and Sl.No 6 of annexure IV, duly applying the Exchange Rate prevailing on the date of Tender Opening date (If finalized on closing bids) / prevailing on the date of reverse auction and loading the Customs Duty, Cess on C.D. & local Freight. The incidence of Income Tax / Service Tax to be borne by BHEL will be loaded while arriving at the Landed Cost.**



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GENERAL TERMS AND CONDITIONS

1.0 The sealed tenders super scribing Tender Number, Due Date & Name of the Supplier should be addressed to

Addl General Manager / MM
Bharat Heavy Electricals Ltd
Electro Porcelains Division
Prof., C N R Rao Circle
PB no: 1245, Science Institute Post
Bangalore – 560 012

- 2.0 The sealed tender should contain two separate sealed covers. The first cover containing the technical part, including all commercial terms (except price) and un-priced bid, superscribed as TECHNICAL-CUM-COMMERCIAL and UN-PRICED BID along with Tender Number, Tender Due Date and Name of the Supplier. The second cover containing only the prices super-scribed as PRICE BID along with Tender Number and Name of the Supplier. These two covers should be sealed individually and both the covers should be kept in another sealed cover superscribed with Tender Number, Due Date and Name of the Supplier. The offer should be submitted within 2.00 PM on the due date and the Cover-I consisting of techno-commercial bid, will be opened first at 2.30 PM on the same date in the presence of those vendors or their authorized representatives who wish to be present. The due date may be altered in case of insufficient response from vendors or urgency or any other reasons deemed valid. Refloating may also be resorted to with or without opening the received responses under the aforesaid circumstances.
- 3.0 The Technical-cum-Commercial offer will be discussed, finalised and only then the price bid of the technically acceptable offers will be opened.
- 4.0 If a Supplier submits only one cover containing either techno-commercial bid or price bid or one combined bid i.e. techno-commercial bid & price bid together, the offer is liable be rejected.
- 5.0 BHEL reserves its right to reject / load any offer which is having deviations to BHEL Specifications, Standard Terms & Conditions.
- 6.0 Techno-Commercial conditions shall interalia contain the following:-**
- 6.1 Complete technical offer including detailed specifications, drawings, catalogues, and test reports etc as required together with experience list to be furnished.



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- 6.2 In case of Technical-Cum-Commercial bid, un-priced bid has to be used to indicate relevant commercial implications without indicating price.
- 6.3 BHEL reserves its right to reject / load any offer which is having deviations to BHEL Specifications, Standard Terms & Conditions.
- 6.4 Tenders should be duly signed and stamped and free from Corrections and Erasures. Corrections, if any, must be attested.
- 6.5 Supplier shall bear the L/C confirmation charges in case of confirmed L/C amended on his request.**
- 6.6 Bank charges out side India are to the Supplier's account.
- 6.7 In case of L/C extension caused by delays, attributable to the Supplier, the L/C extension charges are to be borne by the Supplier.
- 6.8 Income tax which is to be deducted at source on E & C Charges / Services Charges / Technical Fees are to be borne by the Supplier / Service Provider. .
- 7.0 COMMERCIAL ASPECTS COVERING :**
- SCOPE OF SUPPLY :
 - SCOPE OF WORK IF E&C ARE INVOLVED :
 - STATUTORY LEVIES :
 - TERMS OF PAYMENT :
 - MODE OF PAYMENT :
 - DELIVERY TERMS :
 - GUARANTEE / WARRANTY OF THE EQUIPMENT INCLUDING BOUGHT OUT ITEMS
 - TERMS FOR ERECTION & COMMISSIONING, SUPERVISION, IF ANY :
 - BHEL'S SCOPE OF WORK / SUPPLY :
 - AFTER SALES SERVICE :
 - PACKING& FORWARDING
 - TRANSIT INSURANCE
 - APPROX SIZE OF THE PACKED MATERIALS AND VOLUME
 - LIST OF ALL BOUGHT ITEMS AND MAKES
 - VALIDITY OF THE BID



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8.0 COMPANY PROFILE:

Parties should be registered with the concerned Excise & Sales Tax Authorities and should quote relevant registration No. in the offer. Relevant registration certificate copies must be enclosed.

8.1 Audited financial results of previous three Financial years should be furnished.

8.2 Indian Agents

8.2.1 The Supplier to furnish authenticated copy of the Agency Agreement with his agent detailing precise relationship between them and their mutual interest in the business so as to consider the offer of Indian Agent for indigenous portion of the supply along with techno-commercial bid. However the total responsibility arising out of this tender will be with the Principal Supplier only. For main equipment the offer should be from Principal / Original Equipment Manufacturer. BHEL prefers to deal with Indian Suppliers directly.

8.2.2 The Supplier to furnish original authorisation letter for the Indian Agent. The letter should contain name, contact person, complete postal address including phone, fax and e-mail ID. It must spell out the type of services to be rendered by Indian Agent.

8.2.3 While appointing Indian Agents , Original Equipment Manufacturer should ensure that their Indian Agents are not representing other Original Equipment Manufacturer in the same tender .

8.2.4 Original Equipment Manufacturer should also ensure that banned agents / employees of banned agents are not engaged by them in any capacity. An undertaking in this regard should be submitted . If at any stage it is found that the Original Equipment Manufacturer has appointed an agent who a.) is banned by BHEL or b.) is an employee of a banned agent or c.) is found to representing more than one Original Equipment Manufacturer in the same tender the Original Equipment Manufacturer(s) shall be disqualified .

9.0 DELIVERY:

The vendor has to quote the earliest commissioning lead time for material delivery and commissioning. As the delivery is the essence of the contract, the work has to be completed within the mutually agreed time. The commissioning period is to reckon from date of handing over of site to Vendor by BHEL. The Erection and Commissioning date by the Vendor will be reckoned as the delivery date.



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9.1 DELIVERY TERM:

9.1.1 Indigenous Supplies : FOR - Destination means FOR - B.H.E.L.EPD, Stores [Packing & Forwarding, Freight & Insurance are in Supplier's scope i.e. included in the quoted prices].

9.1.2 Foreign Supplies : FOB / FCA basis inclusive of SEA / AIR worthy packing and inclusive of all charges till FOB / FCA. **Fright charges up to Chennai Port also to be quoted separately .**

10.0 Validity of the offer:

The quotation should be valid at least for a period of 90 days from the tender opening date. Price Variation Clause within this period will not be entertained.

11.0 Price bid:

11.1 Prices are to be indicated as per Un-Priced Bid as per detail as well as in conformity with terms as submitted in Part-I. All applicable taxes and duties are to be indicated clearly in the offer. The comparison between indigenous and foreign bids shall be done based on landed (FOR DESTINATION) price basis. Processing of any optional item is at the discretion of BHEL. **Offer with any preconditions for price will be rejected.**

11.2 The bidders should submit their best price at this stage itself. They will not be allowed to revise the price during validity period.

12.0 Price Impact:

In case the tender is to be finalized on the rates quoted in the sealed bids , and if the out come of techno-commercial discussion has any price implication, only corresponding **price impact** is to be submitted by the vendor in a separate sealed cover which will be opened along with the original price bid on the specified date.

13.0 Price Evaluation:

Prices shall be considered on landed cost basis (cost to BHEL). Landed cost shall be worked out on price quoted duly loading the freight, excise duty, and sales tax after taking out CENVAT and VAT benefit, as applicable. The comparative statement shall be worked out on overall Landed Cost basis for the whole package.



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13.1 For the purpose of comparing prices, tender prices shall be converted to Indian rupees and the conversion shall be made by using the Import Bills Rate (IMP Bills) (exchange) rate quoted by the official source on the date of opening of tenders. This exchange rate will be followed till placement of order.

The comparative statement of the prices prepared on the reference date shall remain firm throughout the execution period. Any change in duty & tax structure during execution of the contract will not be considered for re-ranking of vendors.

The lowest price received against BHEL tender need not be commercially lowest price (L1) and BHEL reserves the right to NEGOTIATE the same

c) BHEL reserves the right/option to REFLOAT the tender if L1 price is not the lowest acceptable price to BHEL.

14.0 Loading Factor:

If the offer is not inline with the terms & conditions specified by BHEL, the following loading criteria will be adopted on quoted price for evaluation of the lowest quote.

Sl No	Activity	Loading Factor foe Non compliance of BHEL standard term
1	Non acceptance of BHEL payment terms	To load with lending rate of SBI+2% p.a
2	Delivery period	For any deviation, 0.5% per week up to a maximum of 10 % of the offered value will be loaded. Relaxation if any should be informed and accepted before price bid opening
3	Liquidated damage	Maximum LD shall be 10% of the total order value
4	Warranty & Guarantee	Deviations are not accepted. Loading is 4% of order value in case of non conformance.
5	Performance Bank Guarantee to be sent by Bank for 10% of basic material cost along with 90% invoice	If not agreed, 10% of basic material value will be loaded.



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15.1.0 Terms of payment for Indigenous Offer:

Despatch of Goods on door delivery basis only.

Payment for 70% of Supply price and 100% Taxes and Duties will be made within 30 days from the date of receipt of materials. Payment for 20% of supply price and 90% of commissioning charges will be made after successful completion of Erection and Commissioning. Remaining 10% of Supply price and 10% of Commissioning charges are payable after one year or on submission of Performance Bank Guarantee.

15.1.1 Terms of payment for foreign offers

70% of PO value is payable after the expiry of credit period of 60 days through LC 20% of PO value & 90% of E&C Charges will be payable through TT on successful completion of Erection and Commissioning.

Balance 10% of PO value and 10% of commissioning charges shall be payable after one year from the date of successful commissioning or on submission of Performance Bank Guarantee. The bank guarantee is to be attested by Indian Embassy & to be registered in India..

15.4 BHEL will have the option to defer the supplies of any purchase order with a notice period of 20 calendar days.

15.5 In case of unsatisfactory performance of quality / delivery, BHEL will have right to discontinue the contract in part or full.

16.0 Deviations:

A separate sheet indicating deviations in technical specification, commercial terms and conditions to be enclosed in part I of the offer.

17.0 Liquidated Damages:

For delay in supply of the items, an amount of 0.5 % per week up to a maximum of 10% of the order value will be deducted



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18.0 Clarifications sought by BHEL during technical & commercial evaluation

In case BHEL asks for any clarification, the vendor has to submit the same within the specified date otherwise the offer will be evaluated considering the clarifications, if any received, as on the specified date. No grace period or late submission is allowed

19.0 Risk purchase clause:

BHEL, at its option, will be entitled to purchase elsewhere at the cost and risk of the vendor, either the whole or part of the goods which the vendor has failed to deliver within the stipulated time. The vendor shall be liable for any loss that BHEL may sustain by reason of such risk purchases. BHEL reserves the right to cancel the contract in full or part, if performance with respect to quality and delivery is unsatisfactory; and BHEL shall have the right to enter into contract with other vendors against such cancellation of contract against risk purchase clause.

20.0 Inspection:

Pre Despatch Inspection of the materials will be conducted by BHEL at Vendor's place. For Pre Despatch Inspection, adequate notice has to be given by the Vendor for deployment of BHEL's personnel. BHEL has the right to review the quality plan of the manufacturer and access to the process data of the manufacturer. All necessary Test & Calibration certificates should accompany supply.

21.0 Maintenance Manual:

The Vendor shall provide three sets of Operation and Maintenance manuals along with the relevant drawings. This will be considered as part of commissioning.

21.0 Erection and Commissioning:

In case of E&C in the vendor's scope, the personnel deployed for the job should have the necessary clearance from HR dept of BHEL. The vendor should bring all equipment and manpower required for erection and commissioning as detailed in the their scope of supply/work.

22.0 Training:

The Vendor shall train BHEL personnel on Operation and Maintenance of the equipment.



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23.0 REVERSE AUCTION (RA) / ON LINE BIDDING ON INTERNET:

- 23.1 BHEL reserves the right to resort to Reverse Auction Procedure i.e. On Line Bidding on Internet, instead of Opening the submitted sealed bid, which will be decided after technical evaluation. The General Terms & Conditions for RA are as below:
- 23.2 For the proposed reverse auction, technically and commercially accepted bidders shall be eligible to participate.
- 23.3 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.
- 23.4 BHEL will inform the Supplier in writing in case of reverse auction, the details of Service Provider to enable them to contact & get trained.
- 23.5 Business rules like event date, time, Start price, bid decrement, extensions etc. also will be communicated through service provider for compliance.
- 23.6 Suppliers have to fax the Compliance form in the prescribed format (provided by Service provider) before start of Reverse auction. Without this, the vendor will not be eligible to participate in the event.
- 23.7 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, loading factors (for non-compliance to BHEL Standard Terms & Conditions), etc. for each of the Supplier to enable them to fill-in the price and keep it ready for keying in during the Auction.
- 23.8 Reverse auction will be conducted on scheduled date & time.
- 23.9 At the end of Reverse Auction event, the lowest bidder value will be known on the network.
- 23.10 The lowest bidder has to Fax the duly signed Filled-in prescribed format as provided on case-to-case basis to BHEL through Service provider within 24 hours of Auction without fail.
- 23.11 Any variation between the on-line bid value and the signed document will be considered as sabotaging the tender process and will invite disqualification of Supplier to conduct business with BHEL as per prevailing procedure.
- 23.12 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.

Note : The bidders should comply the above Terms & Conditions. Non-adherence may lead to rejection.



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ANNEXURE-B

PROFORMA OF PERFORMANCE BANK GUARANTEE

- 1) TO BE EXECUTED IN Rs100.00 NON-JUDICIAL STAMP PAPER
- 2) TO BE SUBMITTED BY ISSUING BANK TO PURCHASE DEPARTMENT DIRECTLY

**PERFORMANCE BANK GUARANTEE
(PROFORMA OF BANK GUARANTEE)**

This Deed of Guarantee made this _____ day of _____ two thousand _____ between _____ (Bank) herein after called "the Guarantor" (Which expression shall unless repugnant to the context or meaning there of be deemed to include its successors and assigns) of the ONE PART and M/s. Bharat Heavy Electricals Limited (A Government of India Undertaking) a company incorporated under the Companies Act, 1956, having its registered office at ' BHEL ' House Siri Fort, New – Delhi 110 049 through its Unit / Division at _____ here in after called " the company " (which expression shall unless repugnant to the context or meaning there of be deemed to include its successors and assigns) of the OTHER PART

WHERE AS M/s. _____ (here in after referred to as the Contractor / Supplier) have entered into a contract bearing No. _____ , dated _____ (here in after referred to as " the Contract ") for the supply / Construction of _____ with the company.

AND WHERE AS the Contract inter-alia provides that the Contractor / Supplier shall furnish to the company a sum of Rs. _____ /- (Rupees _____ only) towards security deposit or Bank Guarantee in lieu there of for due and faithful performance of the contract in the form and manner specified there in.

AND WHERE AS the Contractor / Supplier has approached the Guarantor and in consideration of the arrangement arrived at between the Contractor/ Supplier and the Guarantor, the guarantor has agreed to give the Guarantee as here in after mentioned in favour of the company.



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NOW THE DEED WITNESSES AS FOLLOWS

This Guarantor do here by guarantee to the company the due and faithful performance, observance or discharge of the Contract by the Contractor / Supplier and further unconditionally and irrevocably undertake to pay to the company without demur and merely on a demand, tot he extent of Rs. _____ /- (Rupees _____ only) and claim made by the company on them for any loss, damage, costs, charges and expenses caused to or suffered by the company by reason of the Contractor / Supplier making any default in the performance, observance or discharge of the terms, conditions, stipulations or undertakings or any one of them as contained in the contract.

The decision of the company whether any default has been occurred or has been committed by the Contractor / Supplier in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them as contained in the Contract and / or as to the extent of loss, damage, costs, charges and expenses caused to or suffered by the company by reason of the Contractor / Supplier making any default in the performance, observance or discharge of any of the terms, conditions, stipulations or undertakings or any one of them shall be conclusive and binding on the Guarantor irrespective of the fact whether the Contractor / Supplier admits or denies the default of questions the correctness of any demand made by the Company if any Court, Tribunal or Arbitration proceedings or before any other authority.

The Company shall have the fullest liberty without affecting in any way the liability of the Guarantor under this Guarantee, from time to time to vary any of the Terms and Conditions of the Contract or extend time of performance by the Contractor / Supplier or to postpone for any time and from time to time any of the powers exercisable by it against the Contractor / Supplier any either to enforce or forbear from enforcing any of the terms and conditions governing the Contract or securities available to the company and the Guarantor shall not be released from its liability under those presents by any exercise by the company of the liberty with reference to the matters aforesaid or by reason of time being given to the Contractor / Supplier or any other forbearance, act or omission on the part of the Company or any indulgence by the Company to the Contractor / Supplier or of any other matter or thing what so ever which under the law relating to sureties would, but for this provision has the effect of so releasing the Guarantor from its liability under this Guarantee.

The Guarantor further agrees that the Guarantee here in contained shall remain in full force and effect from _____ to _____ i.e. the period that would be taken for the performance of the Contract and it claims satisfied or discharged and till the Company certifies that the terms and conditions of the Contract have been fully and



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properly carried out by the Contractor / Supplier and accordingly discharge this Guarantee, subject, however, that the company shall have no claim under this Guarantee after _____(Date) unless a notice of the claim under this Guarantee has been served on the Guarantor within _____ months from the expiry of the said period in which case the same shall be enforceable against the Guarantor not withstanding the fact that the same is enforced after the expiry of the said period.

The guarantor undertakes not to revoke this guarantee during the period it is in force except with the previous consent of the company in writing and agree that any liquidation or winding up or insolvency or dissolution or any change in the constitution of the contractor / supplier or the Guarantor shall not discharge the Guarantor's liability here under.

It shall not be necessary for the Company to proceed against the Contractor / Supplier before proceeding against the Guarantor and the Guarantees here in contained shall be enforceable against them not withstanding any security which the Company may have obtained or obtain from the Contractor/ Supplier shall at the time when proceedings are taken against the Guarantor here under be outstanding or unrealized.

The guarantor here by declares that it has power to execute this Guarantee under its Memorandum and Articles of Association and the executant has full powers to do so on its behalf under the power of attorney granted to him by the proper authorities of the guarantor.

IN WITNESS WHERE OF THE _____ (Bank) and M/s. Bharat Heavy Electricals Limited have here unto set and subscribed their respective hands the day, month and year first above written.

SIGNATURE FOR AND ON BEHALF
OF THE BANK WITH SEAL

WITNESSES:

(1)

(2)



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ANNEXURE –C

LIST OF CONSORTIUM BANKS:

1. State Bank of India
2. ABN Amro Bank N.V.
3. Bank of Baroda
4. Canara Bank
5. Citi Bank N.A.
6. Corporation Bank
7. Deutsche Bank
8. HDFC Bank Ltd.,
9. The Hongkong and Shanghai Banking Corporation Ltd.
10. ICICI Bank Ltd.
11. IDBI Ltd.
12. Punjab National Bank
13. Standard Chartered Bank
14. State Bank of Travancore
15. State Bank of Hyderabad
16. Syndicate Bank.



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Description of work to be carried out by the supplier:

The scope of work under this Automation system shall include design, supply, installation, testing, training and handing over of all the materials, equipment, software, accessories and documentation. Please refer the specification for details.

TENDER SPECIFICATION FOR

“Design & Development of Automation Systems for mass manufacturing of higher rating porcelain disc insulators” – Stage I : AUTOMATATION SYSTEM FOR PUGGING & JIGGERING STATION

A. Introduction:

In the manufacturing process of porcelain disc insulators shaping of the body mass is the first step. The green mass as received from the filter press is fed into an extruder for kneading, homogenizing and extruding cylindrical blanks, which are further sent to a preliminary shaping carried out on an SPM – Jiggering machine. This process of handling the extruded blanks from pug mill, conveying, pre-shaping and pick-rotate-place in the moulds is carried out manually. After the shaping operation carried out on jiggering machine the shaped product along with the mould is placed inside a continuous drier. The boundary limits of this stage of process intended for automation is described below along with the photographs of critical process for better understanding.



B. Description of the process

- Blanks of size $\varnothing 275 \times 450 \pm 50$ mm is extruded horizontally from Pug mill, approximate weight of the blank is 45 ± 5 Kgs.
- Each blank shall be individually lifted from the table & placed vertically on the conveyor.
- Care shall be taken to ensure that ‘front end’ of the blank is placed down & the ‘rear end’ Up. The blank shall not be deformed or damaged during handling.



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- The blanks shall be conveyed near to the Automatic Jigging Machine located about 10 meters away.
- During transit, the top end of the blank shall be 'shaped' one end conically by a wire cutting device, and is proposed to be continued manually as at present in the conveying line.
- The pre-shaped blank shall be lifted vertically, inverted and inserted into the mould placed on Automatic Jigging Machine - AJM with suitable force. The shaped portion shall fit exactly into the head portion of the mould. The blank shall not be deformed or damaged during handling. The approximate weight of the pre-shaped blank is 35 ± 3 Kgs.
- Jigging process will be carried out in the existing set up i.e., AJM.
- Each one of the jigged article along with the mould shall be lifted vertically from the jigging table, transferred and placed in the chain dryer using a suitable handling device. Empty mould from the chain dryer shall be removed and placed on the AJM table for jigging.
- Care shall be taken to ensure that the Jigged article is not damaged or deformed during any of the above operations.

C. Production capacity

The system shall be suitably designed to give an output in the range 100 numbers per hour with the desired quality for 420 kN insulators. However, the system shall have the flexibility to increase the speed for increasing the output for other lower rating insulators.

The length of the conveyor or handling system shall be so designed to accommodate 15 pre-shaped blanks as buffer stock.

D. Automation System Envisaged





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Further to the pre-bid meeting held with the interested vendors and based on the detailed discussions among all concerned, the broad description of the automation system envisaged for this stage of automation is as follows:

- i. The boundary limits of the automation system under the scope of vendors is 'From the output of pug cutting device of extruder to loading of the shaped insulator with mould into the mangle dryer'
- ii. The automation system shall consist of equipment / handling system / automated system for
 - a. Lifting the pugged mass from the table and place it vertically on a suitable conveyor. The device for pick and place shall be manual assisted type.
 - b. A conveyor for transferring the pugs from pugmill to jiggering machine. The length of the conveyor and routing shall be designed to accommodate buffer storage of about 15 pugs.
 - c. The operation of the cone formation is proposed to be done manually using the wire cut method as at present. BHEL will deploy a person for the purpose; the operation will be carried out as the pugged mass is being conveyed.
 - d. A pick and place device for transferring the wire cut pugs from the conveyor to the mould in the shaping machine table. During the pick and place operation, it shall be ensured that the wire cut mass is tilted by 180 degrees, aligned with the mould centre and dropped from an adjustable height of 500 to 1000mm. This device shall be synchronized and interlocked with the shaping machine turn table rotation; the placing of the pugged mass into the mould is at the pre-determined station only.
 - e. A pick and place device for transferring the shaped mass along with the mould into the mangle drier. The device is to be synchronized with the shaping machine turn table eject station. The device shall be manual assisted type and of over head gantry supported. The device shall also be used for pick and place of empty mould from the chain drier to the shaping machine turn table in the return path. The cradle of mangle drier has multiple slots for placement of moulds and the position of the slots vary along the width of the cradle; the pick and place device shall have the infinite flexibility to reach these slots.
 - f. The whole system shall be designed to work in synchronization with the existing pugmill, shaping machine and the mangle dryer for optimizing the output.

E. General Instructions



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- I. The bids shall be submitted in two parts; Part-A : Technical & Commercial Bid and Part – B : Price Bid.
- II. The bidders to provide a detailed schematic diagram of the proposed automation system with step by step description of the functioning of the system in detail for every stage in the Technical Bid. BHEL reserves the right to modify the schematic of the automation proposed at the technical bid evaluation stage.
- III. For the proposed system the general operating systems shall be primarily hydraulic. Pneumatic systems shall be provided where it is absolutely essential.
- IV. The operation of the total automation system and in particular the grippers shall be designed such that the impression and deformation occurring to the product at every stage is not affecting the product or process quality and productivity.
- V. The integration of the automation system in the existing production line shall be done in such a way as not to affect the ongoing production. Installation, commissioning, modifications if any and fine tuning shall be done after working hours and the intervening break period only.
- VI. The bought out (out sourced) components shall be of industry standard make of repute and shall be indicated in the technical bids and shall be approved by BHEL at the time of order confirmation. Test certificates and calibration certificates as appropriate shall be provided for all the brought out components.
- VII. BHEL will provide the civil work support required for installation and commissioning. BHEL will also provide supply of power, water, compressed air and other utility supplies as required.
- VIII. Trial run or dry run of the equipment shall be made and corrections incorporated if any before despatch. For the purpose of the trials in the vendors' works and at BHEL shop, requisite material, moulds and accessories required if any will be provided by BHEL.
- IX. Vendor shall provide a complete set of documentation containing detailed drawings of the automation system and components, technical literature for the bought out components, operation and maintenance manuals, list of spares and other relevant information for ensuring trouble free operation and maintenance of the automation system.
- X. The hydraulic system if any associated with this automation scheme shall be independent with its dedicated power pack, control & instrumentation necessary for monitoring and controlling the operation along with inbuilt industry level safety features. The design, supply and commissioning of such hydraulics will be in the scope of the successful bidder.
- XI. Controls & Instrumentation : The system shall have suitably designed control system for operating the automation station. Provision for total automatic or manual mode of



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operation for each stage shall be provided. Further, the C&I shall have suitable HMI interface for parameter setting, fault annunciation, trouble shooting and standard display and indications. Interface for data acquisition through USB / RS 232 port shall be provided with necessary software for PC connectivity.

XII. Health, Safety & Environment : The automation system shall be designed and have inbuilt safety interlocks for ensuring safe operation. Hooters & flashing light beacons shall be provided for generating alarms during exigencies; emergency off switches shall be placed at one or more locations with clear accessibility and marking for shutdown during emergencies. The materials / components selected shall be eco-friendly and shall not have any hazardous or restricted materials. The motors / drives / controls / indicators shall be of energy efficient type.