



PPX-BOI DEPARTMENT
BHARAT HEAVY ELECTRICALS LIMITED
HEEP: HARDWAR-249 403 (Uttarakhand)
FAX: +91 1334 226084/226462
TEL: +91 1334 28 5834/4175

ENQUIRY NO. B/4222/2016/2155V/2
PACKAGE: Condenser Air evacuation Package
PROJECT: 1X800 MW KRISHNAPATNAM
DATE OF ISSUE OF ENQUIRY: 12/12/2017
ENQUIRY DUE DATE: 03/01/2018

INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY

1. SCOPE OF ENQUIRY

Sealed Bids are invited from bidders for the supply of Condenser Air Evacuation Package (Vacuum Pump) for 1X800MW Krishnapatnam Projects as per requirement mentioned below:

Sl. No.	Material Code & Item Description	Total Quantity	Date for Supply Completion	Project Name
1.	Material Code W90716150271 DRG: 31611770039 REV:00 CONDENSER AIR EVACUATION PACKAGE (VACUUM PUMP) FOR SEA WATER-30SCFM SPEC: HE57016 REV: 03	4 Nos.	15/04/2018	KRISHNAPATNAM
2.	Material Code W97716155580 IMPELLER & SHAFT ASSEMBLY (COMPLETE), SUITABLE FOR 30 SCFM VACUUM PUMP SPEC: HE57016 REV: 03	1 No.	31/03/2019	KRISHNAPATNAM
3.	Material Code W97716155059 BEARING FOR VACUUM PUMP (30 SCFM)(1SET=2 NOS) SPEC: HE57016 REV: 03	1 ST	31/03/2019	KRISHNAPATNAM
4.	Material Code W97716155253 COUPLING COMPLETE (FOR VACUUM PUMP OF 30 SCFM) SPEC: HE57016 REV: 03	1 NO	31/03/2019	KRISHNAPATNAM
5.	Material Code W96716155066 MECHANICAL SEAL FOR VACUUM PUMP PACKAGE (30SCFM) (1 SET= 2 NOS) SPEC: HE57016 REV: 03	1 ST	31/03/2019	KRISHNAPATNAM
6.	Material Code W97716155741 PRESSURE GAUGE (SERVICE WATER) DRG: TO SUIT ORIGINAL SUPPLY	2 Nos.	31/03/2019	KRISHNAPATNAM
7.	Material Code W97716155466 TEMPERATURE GAUGE 0-100 DEG C, FOR VACUUM PUMP HEAT EXCHANGER SIZE: 0 TO 100 DEG C	2 Nos.	31/03/2019	KRISHNAPATNAM
8.	Material Code W97716155822 PRESSURE TRANSMITTER FOR VACUUM PUMP SYSTEM:0-1 BAR ABS SPEC: HE57016 REV: 03	2 Nos.	31/03/2019	KRISHNAPATNAM
9.	Material Code W96716155244 TEMPERATURE TRANSMITTER FOR VACUUM PUMP SPEC: HE57016 REV: 03 DRG: 31611770051	2 Nos.	31/03/2019	KRISHNAPATNAM
10.	Material Code W97716155474 TEMPERATURE SWITCH FOR VACUUM PUMP	2 Nos.	31/03/2019	KRISHNAPATNAM
11.	Material Code W97716155547 LEVEL GAUGE FOR VACUUM PUMP SEPARATOR TANK SPEC: HE57016 REV: 03	2 Nos.	31/03/2019	KRISHNAPATNAM
12.	Material Code W97716155512 LEVEL SWITCH FOR VACUUM PUMP	2 Nos.	31/03/2019	KRISHNAPATNAM

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2. Supervision of Commissioning at site:

- a. Please note that vendor's competent representative is required for Supervision of erection & commissioning of the equipment at our project site. Please ensure to quote your charges for Supervision of Erection & Commissioning under following heads:
 - Supervision Charges per day including local conveyance, boarding & lodging charges (Lump Sum per day charges).
 - To & from travelling charges per visit up to site (Lump Sum).

Please note that for evaluation purpose charges for 4 working days at site per condenser air evacuation package and 1 visit for 1 project shall be considered (i.e. total 16 days and 1 visit for each project covered in enquiry).

- b. Payment of supervision shall be against submission of successful commissioning certificate, time sheet duly signed by BHEL site and your invoice thru Bank / direct to BHEL.
- c. Please confirm to depute your representative to our site within 10 days from the intimation from BHEL.
- d. Please provide copy of your PAN card in India and submit a copy of pan Card (if available). In case copy of PAN card will not be submitted before payment of supervision charges, TDS @ 20% of supervision charges would be deducted from the bill of supervision.

3. Type test requirement:

- a. Please submit your type test report for both type test (i.e. Cavitation & Humid air test), for the type test conducted not more than five years prior to the date of bid opening.
- b. Type test report is to be approved by our end customer. In case customer do not approved type test report of the earlier conducted type test, bidders are required to conduct new type test as per approved type test procedure from end customer.
- c. Please quote your type test charges (Separately for both the type tests i.e. Cavitation & Humid air test). The quoted type test charged should be considered for evaluation, however would not be considered for ordering at this stage.

4. PROJECT INFORMATION

Project Name	1 x 800 MW KRISHNAPATNAM PROJECT
Name of the End Customer	ANDHRA PRADESH POWER DEVELOPMENT CO. LTD (APPDCL)
Consignee Address	THE DIVISIONAL ENGINEER(STORE & SERVICES) SDSTPS STAGE-II, NELATURU(V), MUTHUKURU(M), SPSR NELLORE DIST. (AP)
Custom Duty Status	On Project Import

5. EARNEST MONEY DEPOSIT (EMD)

- a. Interested vendors must submit their offer along with the following Earnest Money Deposit (EMD) in a separate sealed envelope:

Details	Amount In INR	Amount in Foreign Currency	Type
EMD	INR 2,00,000/- (INR Two Lacs)	Equivalent to INR 2,00,000/- as on date of opening of techno-commercial bids	Refundable

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- b. The EMD should be submitted in the form of demand draft / Pay Order/ Cash (as permissible under Income Tax Act). The Drafts shall be drawn in favor of “BHEL Hardwar”. In case of foreign bidders, E- payment is also acceptable. For E-Payment, the RTGS details are as mentioned below:

Bank Details	SWIFT Details of bank	Contact Details of Banker
STATE BANK OF INDIA RANIPUR BRANCH, OPP: BHEL MAIN GATE, SECTOR-5, RANIPUR, HARIDWAR, UTTRAKHAND, INDIA PIN CODE : 249403	SWIFT NO : SBININBB225 CC ACCOUNT NO : 10667995458 IFSC CODE : SBIN0000586	Name: Sh. Sudhir Sharma Design: Chief Manager (IBD) Contact No. +91 1334 224201 +91 1334 226125 Fax: +91 1334 226512

- c. Bidders already registered at BHEL Hardwar for supply of Condenser Air Evacuation Package (i.e. PMD Vendors for this item) are exempted from submission of the EMD.
- d. MSE Suppliers/Central / State – PSUs / Government departments are exempted from submission of the EMD.
- e. Bids not accompanied with requisite EMD or bids accompanied with EMD of inadequate value shall not be considered for further evaluation. An opportunity may be given to the bidder for submitting the requisite EMD and the offers would be evaluated only in case, the requisite EMD is received within a time bound period.
- f. The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be refunded after the finalization of the contract. EMD shall be forfeited in the event of bidder opting out after tender opening (PART-I).

6. PRE-QUALIFICATION REQUIREMENT (PQR)

The Pre-Qualification Requirements have been compiled and placed at **ANNEXURE-1**. All the bidders should ensure submission of complete details and documents as called for in these requirements. The Offers submitted by the bidders would be scrutinized with respect to Pre-Qualification Requirements first. Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements.

All documents / information required as per PQR should be signed by the bidder and submitted in the manner a prescribed in the Annexure-1.

7. SUBMISSION OF OFFER

- a. Only English or by-lingual (For by-lingual, one language should be English) version of all documents would be valid & binding.
- b. Bidders are advised to study all the tender documents carefully. Any submission of tender by the bidder shall be deemed to have been done after careful study and examination of the tender documents and with full understanding of the implications thereof. The specifications and terms & conditions shall be deemed to have been accepted unless otherwise specifically commented upon in ‘Deviation’ sheets by the bidder in his offer. Non-compliance with any of the requirements and instructions in the Tender Enquiry may result in rejection of the offer.
- c. Name of vendor’s dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.
- d. Tenders are to be submitted in Two Parts and Part-I (Techno-Commercial Bid alongwith PQR, as detailed below) will be opened first. The offers are to be submitted on or before the Due Date and time, as detailed below:

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[A] PART-I: PRE-QUALIFICATION REQUIREMENT (PQR) & TECHNO-COMMERCIAL BID : Comprising of following documents:

- Earnest Money Deposit (EMD)/details of EMD in case of E-Payment.
- Bidders are required to furnish requisite details / documents in the formats specified in bidding documents for meeting the stipulated **Pre-Qualification Requirements (PQR)** along with all supporting documents like copies of End User Certificates, Purchase Orders and Contract Agreements etc. The Pre-Qualification requirements are as per enclosed **ANNEXURE-1**.
- Complete Technical offer with relevant drawings/ documents etc. as per specifications
- **“INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY”** and **“GISTC (General Instructions and Standard Terms & Conditions against Tender Enquiry)”** are an integral part of this enquiry and endorsed copies of these documents (duly signed and stamped on each page, as a token of acceptance) are to be necessarily submitted along with the offer. Deviations if any are to be listed out separately.
- **Endorsed** copy of enclosed BHEL Quality Plan **“QA/BI/QP/006, REV.05”**.
- Commercial Terms & Conditions
- Any Deviation with reference to technical requirements/specification to be laid down on separate sheet along with the cost of Withdrawal of such technical deviations (if any). Acceptance of such technical deviations would be at the discretion of BHEL.
- Un-Priced replica of Price Bid
- **Supplier Registration Form (SRF):** Online Registration Portal is operational in BHEL. Bidders not registered at BHEL, Hardwar for this item, have to apply through Online Registration portal, <https://supplier.bhel.in/>. All credentials and/or documents duly signed and stamped related to registration has to be uploaded on the website and the application submitted for registration. Application registration No (for applying online form) should be mentioned in the techno-commercial offer.

[B] PART-II: PRICE-BID: Containing Prices of all the items as mentioned in Sl. No. 1 & 2 above (as per Price bid schedule **Annexure-A**), is to be submitted in original, strictly as per enquiry conditions for complete scope of tender enquiry.

- e. Following shall be superscribed on the envelopes which shall be addressed by name and designation to the official inviting tender:

PART-I (refer clause 5.4 [A]) :

1. TENDER ENQUIRY NO. AND ITEM DESCRIPTION
2. DUE DATE FOR OPENING
3. "TECHNO-COMMERCIAL BID WITH PQR".

PART-II (refer clause 5.5 [B])

1. TENDER ENQUIRY NO AND ITEM DESCRIPTION
2. DUE DATE FOR OPENING
3. "PRICE BID".

- f. Parts – I & II shall be submitted in separate sealed covers duly superscribed as indicated above and shall be enclosed further in a main cover duly sealed and superscribed as:

- g. **“OFFER FOR (ITEM NAME) AGAINST ENQUIRY NO. B/4222/2016/2155V/1 DUE ON CONTAINING PART-I & PART-II Bids”**. Vendor’s full name and address should be clearly mentioned on the envelope

- h. Envelope not marked with tender enquiry number is liable to be ignored and may not be opened.



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- i. Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER/Dropped in the Tender Box, addressed as follows:
To,
THE HEAD OF MATERIAL MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.
- j. Tender opening is scheduled to start in the Tender Room at 2:00 PM (IST), on the due date. Therefore bid/quotations must reach this office / tender Box latest by 1:45 PM (IST) on due date. Only participating bidders are allowed to attend tender opening. TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.
- k. The bid/quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer/bid shall be signed and stamped in each page by authorized representative of the bidder.
- l. PART-I (Techno-Commercial bid with PQR) will be opened on Due Date and time specified in the Enquiry, or extension thereof, in presence of tenderers who may like to attend. Incomplete offers are liable to be rejected.
- m. Techno-Commercial offer of only those bidders shall be evaluated who meet the Pre-Qualification Requirements mentioned in our Enquiry and who have submitted the EMD as stipulated in clause 5 above. The Pre-Qualification requirements have been compiled in enclosed ANNEXURE-1.
- n. After opening of the techno-commercial offer, the offers would be evaluated by BHEL and acceptance shall be subject to End Customer approval. Price Bid shall be opened only of the Customer approved vendors.
- o. After finalization of Techno-Commercial evaluation, offers of BHEL and Customer approved vendors who have qualified in techno-commercial offer shall be considered for Price Bid Opening/RA.
- p. All correspondence thereof, shall be addressed to the following persons:

Mr. Manoj Kumar
Designation: Dy. Manager (PPX-BOI)
4th Floor, Main Administrative Building
HEEP, BHEL
Hardwar- 249403
Uttarakhand, India
Email ID: manojy@bhelhwr.co.in
Tel: +91 1334 28 4175

Mr. Ashish Gupta
Designation: Sr. DGM (PPX-BOI)
4th Floor, Main Administrative Building
HEEP, BHEL
Hardwar- 249403
Uttarakhand, India
Email ID: agupta@bhelhwr.co.in
Tel: +91 1334 28 5834

- q. Bidders shall be allowed in the tender room in area identified for bidders and only one authorized representative from each bidder shall be allowed.

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- r. Bidder shall not be allowed to carry camera/laptop in the tender room. The use of Mobile Phone is also restricted in the Tender Room.
- s. Details of offers shall be read out to bidders and in no case the offers shall be handed over to any of the bidders for noting down.
- t. As per directives of CENTRAL VIGILANCE COMMISSION, GOVERNMENT OF INDIA, one agent can not represent two or more suppliers or quote on their behalf in a particular tender. If so found at any stage, BHEL Hardwar is likely to cancel Enquiries / POs to such suppliers. Further, such Indian Agent is likely to be de-listed (Black listed for business from BHEL).
- u.
- v. Vendors operating from BHEL quarters, unauthorized colonies on BHEL Land and Dharamshalas/ Hotels shall not be considered, hence such vendors need not apply.

8. RIGHT OF ACCEPTANCE

- a. BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR reserves the right to reject any or all the bids/quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b. Any discount/ revised offer submitted by a bidder on its own shall be accepted provided it is received on or before the due date and time of offer/bid submission (Part-I). The discount shall be applied on pro-rata basis to all items unless specified otherwise by the bidder. Conditional discounts shall not be considered for evaluation of tenders.
- c. Unsolicited discounts/revised offers given after enquiry opening (i.e. Part-I bid opening) shall not be accepted.
- d. In case there is no change in the technical scope and/or specifications and/or commercial terms & conditions, the bidder/s shall not be allowed to change his/their price bids after the due date (i.e. Part-I bid opening).
- e. In case of changes in scope and/or technical specification and/or commercial terms & conditions, having price implications, techno-commercially acceptable bidders shall be asked by BHEL (after freezing the scope, technical specifications and commercial terms & conditions) to submit the impact of such changes on their price bid. A cut-off date and time shall be given to all the techno-commercially acceptable bidders to submit the impact on their price bids.
- f. In the event of any bidder, after finalizing the technical specification & scope of supply, opting to revise and submit their latest price bid instead of submitting impact on their price bid asked by BHEL, then their latest price bid shall prevail. However in such condition their original price bid will necessarily be opened.
- g. After technical & commercial examination of the offers received and clarifications obtained (if required), Part-II (Revised Price Bid/ Original Price Bid along with Price Impact and Discount, if any) shall be opened, for which the date and time shall be intimated to technically and commercially acceptable bidders in case of public opening. BHEL may opt to finalize the prices through Reverse Auction amongst technically and commercially acceptable bidders. BHEL reserves the right to open the earlier price bids, if any, submitted by the bidder(s), if required.
- h. No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

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9. BASIS OF QUOTATION

For Supplies from outside India:

The prices are necessarily to be quoted on FOB named port as well CFR Mumbai (India) basis, stickily as per Price bid format (Annexure-A for foreign bidders). Name of FOB Port should be clearly indicated in techno-commercial offer.

For Supplies from within India:

The prices are to be quoted on Ex-Works with freight Pre-paid up to destination basis (as per Price bid schedule Annexure-A; for Indigenous bidders. The goods must be dispatched through any Bank approved transporters having their branch at Haridwar. The names and addresses of transporters approved by IBA as well as BHEL are posted at our website www.bhelhwr.co.in. Pls. note that, if you dispatch the material by any BHEL un-approved transporter then you will be required to furnish the MRC (Material Receipt Certificate) from Project Site for processing of your invoice. No demurrage charges would be borne by BHEL.

Vendors should quote inland freight charges (for supplies within India, if any). In case the offer is silent regarding inland freight charges, then, **the same would be considered to be inclusive in the offer.** In such case, no separate freight charges would be payable to the supplier (in the event of ordering) and transportation has to be arranged by supplier at their own cost.

10. OFFER VALIDITY

The offer is to be submitted with a validity of 180 days from the date of opening of techno-commercial offers (Part-I Offer). BHEL will reserve the right to reject the offer, quoting validity less than 180 days.

11. PRICES & PRICE SCHEDULE

- a. **The prices are to be quoted on firm basis. BHEL will reserve the right to reject the offer of the vendors not quoting the prices on Firm basis.**
- b. Bidder shall closely peruse all clauses, specifications & drawings etc. indicated in tender documents before quoting. In case of any doubt about meaning of any portion of tender specifications or discrepancies or omissions in drawings/ tender document or clarifications regarding scope of work etc., the official(s) inviting the tender can be contacted for clarifications, before submitting the offer.
- c. The breakup of prices shall be necessarily submitted as per enclosed **PRICE BID FORMAT (Annexure-A)**.
- d. The prices for foreign scope of supply & services (i.e. from outside India) should be quoted in Euro/USD/JPY/UK Pound/ SF/Singapore Dollar or any other Internationally Freely Tradable Currency only.
- e. In the Price Breakup source of billing, source country of supply, Currency of quotation, separate FOB & CFR Mumbai (India) Charges (for imported shipment) and rate of all applicable taxes & duties, should be clearly mentioned.
- f. Transit Insurance (both Marine & Inland) would be arranged by BHEL.
- g. Tenderer shall quote the rates in English language and international numerals only. Total Price shall be entered in figures as well as in words. All entries in the tender shall either be typed or written legibly in ink.

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Cancellations, corrections, insertions, erasures, over-writing (if unavoidable) shall be authenticated with signature and seal by the bidder.

12. TAXES & DUTIES:

- a. The comparison of offers would be done as per the applicable Taxes & Duty structure on the date of opening of Price Bid.

13. EVALUATION CRITERIA

- a. Evaluation will be done on the basis of total landed cost for the complete requirement covered in the enquiry, with cost involved for delivery up to final project site (considering total material value, taxes & duties, Freight, Insurance, and Commercial Loading etc.).
- b. Import Offers (supply portion offered on CFR Mumbai (India) basis) shall be loaded for Marine Insurance, Port Handling/Clearing Charges, applicable custom duties for the project, freight element and other charges involved for delivery up to Project Site as following:
 - o Marine insurance – @ 0.01% of FOB value
 - o Port handling/ clearing charges – @ 1% of CIF value.
 - o Custom Duty: As prevailing on date of price bid opening.
 - o Inland freight & Insurance (from Mumbai to respective Sites): As per applicable rate of BHEL transportation contract/ standard practice at BHEL/GISTC, whichever is higher.
- c. For evaluation (of offers quoted in Foreign Currency), exchange rate (TT selling rate of State Bank of India) as on date of tender opening (Part-I bid) shall be considered. If the relevant day happens to be a bank holiday, then the forex rate as on the previous bank (SBI) working day shall be taken.

14. PAYMENT TERMS

- a. **STANDARD PAYMENT TERMS of the enquiry (For both Foreign & Indigenous Bidders):** 100% payment shall be made after receipt and acceptance of material at Krishnapatnam Project Site. Material receipt and acceptance certificate from BHEL will be part of negotiation document for claiming payment.
- b. The payment may be claimed thru bank (i.e. CAD) or directly to BHEL. In case of payment through bank, all bank charges shall be on either side i.e. your bank's charges shall be to your account and our bank's charges shall be to our account. In case documents are presented directly to our nominated Banks, bank charges shall be to your account.
- c. **For Foreign Bidders:** In case Bidders insists Payment thru Letter of Credit, BHEL may agree for Un-Confirmed and Irrevocable Letter of Credit and will; be opened 60 days prior to the scheduled delivery and will be valid for 90 days.
- d. **For Indian Bidders:** Payment thru Letter of Credit (LC) will not be allowed. BHEL reserves the right to either reject the offer or load the offer of Indian bidders insisting payment thru LC.

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- e. **Loading for Deviation in Payment terms (for both Indian & Foreign Bidders):** BHEL reserves the right to load the offers of vendors for deviation in payment terms mentioned in the enquiry. Base rate of SBI (as on 31st March 2017) + 6% per annum, shall be considered for loading for the period of relaxation sought by bidders. Loading would be done on basic cost of items, as per table given below:

Payment Terms		Days of Loading
After Receipt & Acceptance of material at Site (Indian/Foreign Bidders)		No Loading
Against Delivery at BHEL Site (against Material Receipt Certificate) (Indian/Foreign Bidders)		15
Against documents through bank (CAD):	Foreign Bidders	45
	Indian Bidders	30
Letter of Credit (LC)	Foreign Bidders	60
	Indian Bidders (if allowed under exceptional circumstances)	45
Usance LC	Foreign Bidders	No Loading if usance period is > 45 Days.
		Loading of days difference i.e difference between 45 days and usance period if the usance period is < 45 days
	Indian Bidders (if allowed under exceptional circumstances)	No Loading if usance period is > 60 Days.
		Loading of days difference i.e difference between 60 days and usance period if the usance period is <60 days

15. GUARANTEE/WARRANTY CLAUSE

- Guarantee/ Warranty Period: 36 months from the date of dispatch or 24 months from commissioning at site, whichever is later.
- Please note that vendors quoting guarantee less than 24 months from dispatch shall not be considered. In case of deviation is Guarantee Period, offer shall be evaluated with loading @4% per annum (on pro-rata basis) of quoted material value, for the deviated guarantee period.
- Supplier shall be responsible for free replacement of the defective tubes (material defect / manufacturing defect / defect due to any other causes pertain to manufacturing / material) on our site without any extra cost to BHEL.
- In case of damage due to reasons other than inadequacy in packing/loading, you are required to depute your representative at site / place of damage at the time of insurance survey to ascertain and confirm the extent of damage. Please confirm

16. DELIVERY PERIOD

- Please quote your delivery completion period in line with the enquiry lot date. In case it is not possible to meet the lot date, you may quote your best possible delivery completion period in number of weeks from the date of Purchase Order.

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- b. If the delivery quoted by you does not meet BHEL's delivery requirement / revised delivery requirement as per site progress, you will be given a chance for reviewing your quoted delivery and inform revised delivery to BHEL. After this, if your delivery does not meet BHEL's required delivery / revised delivery as per site progress, BHEL reserve the right to reject your offer.

17. MDCC Clause:

Please note that, material shall be dispatched only after issue of Material dispatch clearance certificate (MDCC) by BHEL. For issue of MDCC, you are required to submit all test certificates (TC) and inspection report of third party (IR) in two hard copies to us. BHEL will issue MDCC within 7 days of receipt TCs & IR in hard copy, if complete clear w.r.t. approved quality plan and comply with approved technical documents. In case of any delay on account of BHEL delivery shall be re-scheduled accordingly.

18. Performance Bank Guarantee:

- Kindly confirm your acceptance to submit PBG (performance bank guarantee) for 10% of the order value. PBG would be submitted before negotiation of the documents through bank. The PBG acceptance / receipt certificate will be a part of the negotiable documents. The PBG will be in BHEL format and from one of the BHEL consortium banks (list & format are attached). PBG receipt & acceptance letter issued by BHEL would be a part of negotiation documents.
- Please specifically confirm that PBG would be issued / confirmed by Indian Branch of any of BHEL's consortium bank.
- Please note that, no deviation in submission of Bank Guarantee is acceptable. The offers of the vendors not agreeing to submit PBG is likely to be rejected by BHEL and no further communication in this regards will be entertained.

19. Engineering Documents Approval after placement of PO:

Drawings/Data sheets/documents as called for in the specifications (if any) shall be submitted for approval to BHEL for BHEL/customer approval within 30 days of purchase order. Any delay in delivery on account of late submission of drawings shall be to vendors account. BHEL will arrange the approval of the drawings/data sheets/ documents within 30 days of their receipt. In case of delay on account of BHEL, delivery shall be re-scheduled accordingly.

20. O&M Manuals to be submitted by Supplier after supply of equipment:

O&M manuals are required in 20 nos Hard copies and 3 CD ROMS. Suppliers are required to put 2 nos of O&M manuals (hard copy) in the packing box and description of same should be appear on the shipping / packing list. 18 Nos of O&M manuals & 3 CD ROMS should be send to AGM (PPX-BOI) at BHEL—HEEP Haridwar, immediately after dispatch. Please confirm.

21. Verification of material at site:

BHEL will inform receipt of material at site. After receipt of material, supplier's representative has to visit at site to verify completeness of the equipment w.r.t. detailed packing list, within a week time from the date of intimation from BHEL. After verification of Material, MOM with BHEL's site would be provided to BHEL-Haridwar. This visit would be without any cost to BHEL.

22. Site support after Expiry of Warrantee Period:

To resolve the vacuum pump related issue, supplier to visit site two times in two year after expiry of Guarantee period, without any charges to BHEL. Each visit shall be of two days. Please confirm.

23. PENALTY FOR LATE DELIVERY

- In case of delay in supply of material beyond the agreed contractual delivery, Penalty for Late Delivery would be applicable @ 0.5% of the **total order value (each LOT)** per week of delay or part thereof subject to a maximum of 10% of the **total order value (each LOT)**.

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 5834/4175	ENQUIRY NO. B/4222/2016/2155V/2 PACKAGE: Condenser Air evacuation Package PROJECT: 1X800 MW KRISHNAPATNAM DATE OF ISSUE OF ENQUIRY: 12/12/2017 ENQUIRY DUE DATE: 03/01/2018
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- b. For Supplies from outside India, the date of OBL (Original Bill of Lading)/ Air Way Bill (AWB) would be treated as the date of delivery for penalty purposes.
- c. For Supplies within India, the date of GR (Goods Receipt)/ LR (Lorry Receipt) would be treated as the date of delivery for penalty purposes.
- d. In case of dispatch thru BHEL un-approved transporter (for indigenous supplies), receipted GR/LR from Project Site would be required for processing of the invoice. In such case, no demurrage charges would be borne by BHEL.
- e. In case of any deviation to the above penalty clause, BHEL reserves the right to load the offers to the extent to which it is not agreed by vendors (at offered value).

24. CUSTOMER APPROVAL, QUALITY REQUIREMENTS & THIRD PARTY INSPECTION

- a. The final acceptance of the offers shall be subject to vendor approval by End Customer. BHEL will open the Price Bids of only those vendors who are finally approved by the end customer.
- b. Following documents should be submitted along with your offer for taking up approval with the end customer (after qualification of PQR and acceptance by BHEL):
 1. Company profile
 2. Details of manufacturing and testing facilities
 3. Reference lists – orders executed for power utilities / Thermal power plants
 4. Customer approval letters
 5. Copies of certificates eg. ISO 9001 or other relevant certifications
 6. Other Credentials (if any).
- c. The tentative scope of Third Party Inspection would be as per enclosed Quality Plan **QA/BI/QP/006, REV.05**. Vendor to submit quality plan in-line with the QAP NO. **QA/BI/QP/006**, In the event of ordering this QAP would be forwarded to the end customer for approval and the final scope of inspection shall be as per customer approved Quality Plan.
- d. **For Indigenous suppliers:** Pre-Inspection would be done by BHEL/BHEL nominated inspection agency and End Customer as per Customer approved Quality Plan. The charges for carrying out inspection would be borne by BHEL; however the co-ordination with the Third Party Inspection Agencies would be the sole responsibility of the bidder. The list of approved Third party Inspection agencies would be provided at the time of contract finalization. At least 15 days' notice period should be provided for arranging Pre-Inspection.
- e. **For Foreign Bidders:** The prices are to be quoted inclusive of Third Party Inspection Charges (By LRS/BVQI/TUV). The scope of inspection for Third Party Inspection Agency would be as per final Customer approved Quality Plan. The co-ordination with the Third Party Inspection Agencies would be the sole responsibility of the bidder. In case if nothing has been mentioned in your offer about the Third Party Inspection charges, the same would be considered to be inclusive in your quoted prices.
- f. The Test Certificates/Inspection reports will be submitted to BHEL for review and acceptance before dispatch of Material. The Material Dispatch Clearance (MDCC) will be provided within 7 days of receipt of these documents, provided those are complete in all respects.

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 5834/4175	ENQUIRY NO. B/4222/2016/2155V/2 PACKAGE: Condenser Air evacuation Package PROJECT: 1X800 MW KRISHNAPATNAM DATE OF ISSUE OF ENQUIRY: 12/12/2017 ENQUIRY DUE DATE: 03/01/2018
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- g. The Material is to be dispatched only after receipt of Material Dispatch Clearance Certificate (MDCC) from BHEL.

25. REVERSE AUCTION

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.

In case BHEL decides to go for Reverse Auction, only those bidders who have given their unconditional 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. 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.

Detailed terms and conditions for RA are enclosed (refer [Annexure-B](#))

26. SETTLEMENT OF DISPUTES /ARBITRATION :

For Supplies from outside India:

Any dispute/difference arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Arbitration and Conciliation Act, 1996 of India or statutory modifications or reenactments thereof and the rules made thereunder and for the time being in force shall apply to the arbitration proceedings under the clause. The seat or place of arbitration shall be Haridwar, India. The language to be used in the arbitration shall be English. The governing law of the contract shall be the substantive law of India.

JURIDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

For Supplies from within India:

In case of dispute the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

JURIDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

BHEL reserves the right to reject the offer in case bidder does not agree to the arbitration clause.

27. RISK PURCHASE :

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 5834/4175	ENQUIRY NO. B/4222/2016/2155V/2 PACKAGE: Condenser Air evacuation Package PROJECT: 1X800 MW KRISHNAPATNAM DATE OF ISSUE OF ENQUIRY: 12/12/2017 ENQUIRY DUE DATE: 03/01/2018
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such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

28. DEALING WITH BANNED SUPPLIERS/ CONTRACTORS IN BHEL

Offers of the bidders, who are on the banned list, as also 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.

29. PRE-BID MEETING :

Pre-Bid clarifications & deviations (if any) should be sought within 10 days of issue of the enquiry. Bidders to compile all clarifications, if any, preferably in single communication. The clarifications would be provided within 3 days of receipt of queries. Bidders may also have across the table discussions for seeking pre-bid clarifications (if required).

30. IMPORTANT NOTE

INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY are to be read along with GISTC (for both Foreign & Indian Bidders). A signed & stamped copy of these documents as a token of acceptance is to be submitted along with the offer. In the event of contradiction of terms and conditions mentioned, the order of preference shall be INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY followed by GISTC (General Instructions and Standard Terms & Conditions against Tender Enquiry).

Kindly ensure the timely submission of your offer (by 1345 Hrs IST on the due date) and note that Late Offers shall not be entertained under any circumstances.

31. List of Enclosures

- i. INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY
- ii. Pre-Qualification Requirements along with Annexures mentioned therein (**Annexure-1**)
- iii. Technical specifications HE57016 rev 03
- iv. Drawing No. 31611770039 rev 0 and 31611770035 rev 0
- v. Quality Plan "**QA/BI/QP/006, REV.05**".
- vi. Price Schedule (**Annexure-A**)
- vii. Terms & Conditions of Reverse Auction (**Annexure-B**)
- viii. GISTC (For Foreign Bidders)
- ix. GISTC (for Indian Bidders)

For and on behalf of BHEL, Hardwar

(SK Baveja)
General Manager (PPX/BOI)

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PRE-QUALIFICATION REQUIREMENTS

Bidder is required to meet the pre-qualification requirements (PQR) for supply of Condenser Air Evacuation Package as per criteria stipulated below. Further, Bidder to furnish documents/ details as per Annexure-1, 2, 3, 4&5 (as applicable), along with the technical offer for proven criteria stipulated below.

Pre-Qualification Requirements		Vendors Confirmation Indicating page no where document are placed
1.0	Bidder/Vendor (Qualified Equipment manufacturer) should have designed, manufactured, tested and commissioned as per HEI- performance standard for "Condenser Air Evacuation package" (Liquid ring Vacuum Pump package) and supplied "Condenser Air Evacuation package", for at least two (2) number purchase orders (P.Os) and having 30 SCFM capacity or higher in Free dry Air saturated with water vapour at suction pressure of 1"Hg absolute and subcooled by 7.5 deg F at ITD not more than 13.3 deg C for power plant application. "Condenser Air Evacuation package" should be in successful operation for a period not less than two (2) years, as on date of submission of bid.	
2.0	The Indian bidder can offer referred equipment in clause 1.0, provided that, it has technical collaboration or valid licensing agreement (for design/engineering, manufacturing, testing and supply of such equipment), in India, with a manufacturer who meets the requirements stipulated at clause 1.0 above. Indian Bidder should have supplied at least one number of Vacuum pump package having 20 SCFM capacity or higher in Free dry Air saturated with water vapour at suction pressure of 1"Hg absolute and subcooled by 7.5 deg F at ITD not more than 13.3 deg C for power plant application, which is successfully commissioned at project site.	
2.1	Before taking up the manufacturing of such equipment, the indian bidder should have created manufacturing and testing facilities at its works as per Collaborator/Licensors design, manufacturing and quality control system for such equipment duly certified by Collaborator/Licensors	
2.2	Further, the Collaborator/Licensors should have provided all design, design calculation, manufacturing drgs and should have provided technical and quality surveillance assistance and supervision during manufacturing, testing & commissioning of equipment.	
3.0	An Indian JV/ Subsidiary company in India can offer referred equipment in clause no 1.0, provided that it has a valid collaboration or licensing agreement (for design/engineering, manufacturing, testing and supply of such equipment), in India with a qualified equipment manufacturer who meets the requirements stipulated at clause 1.0 above.	
3.1	Indian Bidder should have supplied at least one number of Vacuum pump package having 20 SCFM capacity or higher in Free dry Air saturated with water vapour at suction pressure of 1"Hg absolute and subcooled by 7.5 deg F at ITD not more than 13.3 deg C for power plant application, which is successfully commissioned at project site.	
3.2	In addition, the Indian JV/ subsidiary Company and qualified equipment manufacturer shall furnish DJU (Deed of Joint Undertaking) in which executants of the DJU shall be jointly and severally liable for the successful performance of the equipment. JV should be maintained for a lock-in period of min 7 years from the date of bid opening.	
3.3	The Indian bidder should have created manufacturing and testing facilities at its works as per Collaborator/Licensors design, manufacturing and quality control system for such equipment duly certified by Collaborator/Licensors.	
3.4	Further, the Collaborator/Licensors should have provided all design, design calculation, manufacturing drgs and should have provided technical and quality surveillance assistance and supervision during manufacturing, testing & commissioning of equipment.	

24/11/17
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Dy up / mxe

24/11/17
(AGM/HXE)

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ANNEXURE-1

Documents/Details to be submitted for proven criteria mentioned in clause 1.0, 2.0 & 3.0 of PQR:

A. For Clause 1.0 of PQR : Qualified Equipment Manufacturer

Bidder to submit following documents in support of above confirmation:

- a. Copies of Un-price purchase orders (P.Os).
- b. Test certificates for performance test of complete Vacuum pump package for capacity & power Vs Suction pressure, duly co-relating P.O No. / Serial no of Package. This Test certificate should be issued by third party inspection agency or acceptance by Customer/end user.
- c. Shipping/dispatch document in support of supply of Vacuum pump packages against P.Os at sl no (a).
- d. Copy of end user certificate issued on letter head as per Annexure-2 for successful operation for two years for two P.Os given at sl no (a). Bidder, who have already supplied the Condenser Air Evacuation package to BHEL Haridwar, need not to furnish end user certificate.
- e. Details of Equipment as per Annexure-3.
- f. Details of Questionnaire as per Annexure-4.

B. For Clause 2.0 of PQR

- a. Bidder to furnish documents mentioned against clause no. A of above to meet the requirements stipulated at clause 1.0 for Qualified Equipment Manufacturer.
- b. MOU/ certificate of collaboration/ licensing agreement for design, engineering, manufacturing, testing and supply of referred equipment in India.
- c. Copy of Un-price purchase order (PO).
- d. Copy of commissioning certificate with acceptance from end user, duly co-relating P.O No. / Serial no of Package.
- e. Shipping/dispatch document in support of supply of Vacuum pump packages against P.O at sl no (c).
- f. Details of Equipment as per Annexure-3.
- g. Details of Questionnaire as per Annexure-4.
- h. Bidder to furnish certificate in support of clause no 2.1 & 2.2 from the collaborator/ licensor/ Qualified Equipment Manufacturer.

C. For Clause 3.0 of PQR:

- a. Bidder to furnish documents mentioned against clause no. A of above to meet the requirements stipulated at clause 1.0 for Qualified Equipment Manufacturer.
- b. Details of Subsidiary/JV Company as per Annexure-5.
- c. Copy of Un-price purchase order (PO).
- d. Copy of commissioning certificate with acceptance from end user, duly co-relating P.O No. / Serial no of Package.
- e. Copy of approved Quality plan and its report, duly co-relating P.O No. / Serial no of Package.
- f. Shipping/dispatch document in support of supply of Vacuum pump packages against P.O at sl no (c).
- g. Details of Equipment as per Annexure-3.
- h. Details of Questionnaire as per Annexure-4.
- i. Bidder to furnish certificate in support of clause no 3.3 & 3.4 from the collaborator/ licensor/ Qualified Equipment Manufacturer.

[Signature]
24/11/17

[Signature]
24/11/17

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ANNEXURE-2

Date:

TO WHOM SOEVER IT MAY CONCERN

This is to certify that M/s XXXXX have Designed, Engineered, Manufactured and supplied Condenser Air Evacuation package (Vacuum pump package), model no xxxxx having free dry Air Capacity xxxx SCFM at 1"Hg-a and at ITD xxxx deg C for our xxxxx Plant(Unit/Rating/City/Country), under our Purchase Order No. xxxxx dated xxxx.

The Vacuum pump package was commissioned on dated xxxxx and is in successful operation without any problem since commencement of operation.

Name of the Organization :

Address :

Signature :

Name of the Signatory :

Designation :

Phone No :

Date of issue :

Seal & Stamp of the
Organisation :

Note: *If Customer's letter head is in language other than English then translation in English shall be written below header.*

ANNEXURE-3: DETAILS OF EQUIPMENT

Bidder's Name and Address :
XXXXXXX

To
BHEL, HEEP, RANIPUR,
Haridwar-249403

S. No.	Item Description
--------	------------------

**CONDENSER AIR EVACUATION PACKAGE
(VACUUM PUMP PACKAGE)**

- | | | |
|------|--|--------|
| 1.0 | Name, Address, Telephone No. of manufacturer | |
| 2.0 | Name of the Station and its Location | |
| 3.0 | Client Name and its Address, Fax No. & Tel.Nos. | |
| 4.0 | Name and Designation of the responsible person in Client's Organisation | |
| 5.0 | Contract No. & Date | |
| 6.0 | Capacity in MW of Unit and No. of Units | |
| 7.0 | Starting Date of Work/ Date of Order | |
| 8.0 | Scheduled Date of Completion | |
| 9.0 | Actual Date of Completion | |
| 10.0 | Date of Commissioning of System/Package | |
| 11.0 | Whether the System/Equipments are in Successful Operation for a minimum period of one (1) year prior to the date of Techno-Commercial bid opening. | Yes/No |
| 12.0 | Date of Commencement of Successful Operation | |

Signature of authorized signatory.....

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S. No.	Item Description
13.0	Brief Scope of Work
14.0	Brief Technical Particulars of the System/Package/Equipments :
	(i) Designed by
	(ii) Manufactured by
	(iii) Type (Liquid Ring Type or any other type)
	(iv) Make / Model No.
	(v) Number per T.G. Unit
	(vi) Rated free Dry Air Capacity in SCFM [at 25.4 mm Hg (abs) Suction Pressure at 21.1°C] of each Pump
	(vii) Hogging Capacity of each Pump (at 254mm Hg (abs) Suction Pressure in SCFM
	(viii) I.T.D. (deg.C)
	(ix) Temp. of Cooling Water to Vacuum Pump Heat Exchanger (deg.C)
	(x) Type of Heat Exchanger (Shell & Tube Type/Plate Type)
	(xi) No. of Stages
	(xii) Whether Air Ejector is provided or not
	(xiii) Impeller Material

Signature of authorized signatory.....

S. No.	Item Description	
	(xiv) Casing Material	
15.0	Are these Condenser Air Evacuation Pumps running with Steam Turbine Generator Sets	Yes/No
16.0	<u>Motor</u> i. Type ii. Manufacturer iii. Rating iv. Origin of country	

Signature of authorized signatory.....

Name of Equipment / Item / Process with Model/ Type/ Rating / Capacity/ Size/ Tonnage etc. (As applicable):

Trade Name of Product (if any) : _____

1. **Name of Proposed Sub-Supplier:** _____

Website: _____

2. **Address of Regd. Office:**

Details of contact person:

Name _____

Mobile no. _____

Desig. _____

E-mail: _____

3. **Branch/ Liaison office in Delhi/NCR**

Details of contact person:

Name _____

Mobile no. _____

Desig. _____

E-mail: _____

Weekly off day _____

4. **Address of Works where Item is being manufactured**

Details of contact person:

Name _____

Mobile no. _____

Desig. _____

E-mail: _____

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5. **Details of Proposed Works:**

- a. Year of Establishment of present works : _____
- b. Year of Commencement of : _____
Manufacturing at the above works
- c. Details of change in works address in past, if any : _____
- d.. TotalArea / Covered Area : _____
- e. Details of covered area like no. of sheds, _____
Area of each shed etc.
- f. Electric power- Connected load: _____
Electric power- Stand by load & system: _____

6. **Annual Turnover & Profit in past three years** : _____

7. **Do you have in-house Department for:**

- a) Design Yes/No
- b) Research & Development Yes/No
- c) Quality control/Inspection Yes/No
- d) After Sales Service Yes/No

8. **Shift works per day** One/Two/Three

9. **Present Manpower Status:**

Division Status	Graduate		Diploma	Skilled	Un-Skilled	Remarks
	Technica l	Non- Technical				
Design						
Production						
Quality Control/ Inspection						
After Sales Service						

- a. Organization chart of the proposed works is enclosed as Annexure: _____
 b. Organization chart of QA / QC Deptt. is enclosed as Annexure: _____
 c. List of Qualified Welders with process etc. is enclosed as Annexure: _____
 d. List of Qualified NDT personnel with area of specialization is enclosed as Annexure: _____

10. Brief details of items manufactured:

Sl. No.	Item & Material (Type/Size/Rating/Model/ Capacity /Tonnage , as applicable)	Installed Capacity	Annual Production Capacity	Annual Production for last Three years		
				I	II	III

11. Details of foreign Collaboration, if any:

Sl. No.	Product	Name & Address of Collaborator	Collaboration		
			Scope	Year	Valid upto

12. Type Test report for the proposed product (similar or higher rating)if applicable is enclosed as Annexure: _____
 13. Approval / Certification by National / International standards / Accredited agency for the proposed product (if applicable) is enclosed as Annexure: _____
 14. Statutory / mandatory certification for the proposed product (if applicable) is enclosed as Annexure: _____
 15. Supply Experience list of the proposed product (similar or higher rating) is enclosed as Annexure: _____

[List shall include Item description, (Type/Size/Rating/Model/Capacity/Tonnage, as applicable), Customer name, Quantity, Year of Supply and Year of commissioning]

16. End User's operational feedback certificate for the proposed product is enclosed as Annexure: _____

17. List of equipment & machinery specific to the proposed product is enclosed as Annexure: _____

(List shall include name of equipment, capacity & nos. etc.)

18. Process Flow Diagram indicating in-house & outsourced process enclosed as Annexure: _____

19. General manufacturing facilities available in-house:

Sl. No.	Description of machine	Type /Capacity / Size / Rating etc as applicable	Number
a)	Material Handling Mobile Crane Fork Lift Over Head Cranes		
b)	Metal Cutting & Bending		
c)	Casting		
d)	Forging		
e)	Fabrication		
f)	Welding		
g)	Machining		
h)	Heat Treatment		
i)	Surface Cleaning Sand Blasting Shot Blasting Pickling		
j)	Painting		
k)	Metal Coating		

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b. List of Testing & Inspection Facilities outsourced, if any with Source of testing and Description enclosed as Annexure: _____

21. Storage of finished goods (covered / open) : _____

22 List of the source / make with location of major raw material, bought out items and out sourced process enclosed as Annexure: _____

23. **Quality management:**

23.1 **General**

23.1.1. Work Instruction for different processes available. (Y/N). ____

If yes, enclose list as Annexure _____

23.1.2. Evaluation system for raw material/bought out item's supplier is available. (Y/N) _____

23.1.3. Records generated during inspection maintained & available for review (Y/N) _____

23.1.4 Statistical quality control techniques used (Y/N) _____

23.1.5 ISO certificate for the works available (Y/N). ____ If yes, enclose copy as Annexure _____

23,2 **Corrective action**

23.2.1 Specifically confirm whether System for identification & disposition of Non Conformity in the process / product is available. (Y/N) _____

23.2.2 Specifically confirm whether System for Customer complains & their satisfactory disposal is available. (Y/N) _____

23.3. **Documentation Control**

23.3.1 Procedure available for documentation control (Y/N) ____

23.4. **Control of Inspection, Measuring & Testing equipments.**

23.4.1 Procedure for calibration of testing & measuring instrument available. (Y/N) ____

24. **Any Special Information:** _____

26. I CERTIFY THAT THE INFORMATION SUPPLIED HEREIN (INCLUDING ALL PAGES ATTACHED) IS CORRECT TO THE BEST OF MY KNOWLEDGE.

SEAL

M/S. _____
PLACE _____

DATE _____

SIGNATURE _____
NAME _____
DESIGNATION _____
MOBILE NO _____
EMAIL _____

LIST OF ENCLOSURE:

Certification by Main Supplier: Above information have been verified and found in order / minor changes which have been marked and initialed on this form itself / observed the following discrepancies.

Name : _____ Designation : _____ Signature : _____ Date : _____

NOTE :

1. **COLUMN SHALL NOT BE LEFT UNFILLED..IN CASE OF NOT APPLICABLE / NOT AVAILABLE, THE SAME SHALL BE INDICATED IN THE PROVIDED SPACE.**
2. **IN CASE PROVIDED SPACE IS NOT ADEQUATE, INFORMATION SHALL BE PROVIDED AS AN ATTACHMENT.**
3. **PRODUCT CATALOGUE FOR THE PROPOSED EQUIPMENT/ITEM/PROCESS,IF AVAILABLE, SHALL BE ENCLOSED**

ANNEXURE-5

S. No.	Item Description
--------	------------------

**Details of Subsidiary/JV Company
proposed for manufacturing of
Vacuum pump package**

- 1.0 Name and Address with Telephone
Number of the Indian Subsidiary /
JV Company proposed for
manufacturing of
(Name of the equipment).
- 2.0 Name and Address with Telephone No.
of the promoter(s) of the Subsidiary/
JV Company
- 3.0 % of the Equity held by the
promoter(s)
- 4.0 Equity lock in period (from the date of
incorporation of JV)
- 5.0 Name and Address with Telephone
No. of a promoter of Subsidiary /
JV Company formed
who meets the requirement
of Clause 1.0.
- 6.0 M/s. (the subsidiary/
JV Company) has a collaboration or
valid licensing agreement with M/s
(subsidiary/JV promotor) for design,
Engineering, Manufacturing & Supply
of (Name of the
equipment) in India.
(Please furnish details of collaboration/
licensing agreement

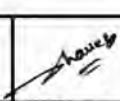
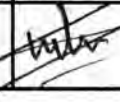
Signature of authorized signatory.....

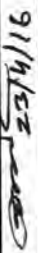
S. No.	Item Description
7.0	If equity held by the Qualified Equipment Manufacturer
8.0	Whether equity held directly or indirectly ?
9.0	If indirectly then furnish the relationship tree alongwith all relevant subsidiaries holding company
10.0	Please furnish the committment for lock in period as per requirement
11.0	Bidder to furnish documentry evidence \ in support of above date

Date	:	(Signature).....
Place	:	(Printed Name).....
		(Designation).....
		(Common Seal).....

Signature of authorized signatory.....

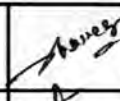
दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
SUPERSEDES INVENTORY NO.				पृष्ठ 1 का 27 Page 1 of 27	
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company		TECHNICAL SPECIFICATION FOR CONDENSER AIR EVACUATION PACKAGE UNIT (VACUUM PUMP)			
स्वत्साधिकार एवं गोपनीय इस दस्तावेज में दी गई प्रतिलिपि भारत हीवी एलेक्ट्रिकल लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रसारण के बिना की जायेगी अन्यथा कानून के दायरे में आयेगा					
दिनांक एवं हस्ताक्षर SIGN & DATE					
सामग्री सूची संख्या INVENTORY NO. P-5778					
TSX QAX सहायक विभाग AGREED DEPTT		DEEPAK S.K CHAUHAN VISHU SHARMA NAME		अनुवादक TRANSLATED BY निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY पर्यवेक्षणकर्ता SUPERVISED BY	
SUPERSEDES		स्वीकृति APPROVED : S.K.BAVEJA, AGM (HXE&PED);		नाम NAME SHAVEZ KHAN SHIVA KANT SHASHI KANT	
REV.NO. 03 DI. 18/04/2016 CHANGE ADVICE NO. HXE-16-02		निर्माण PREPARED : HXE		जारी ISSUED : TSX	
				दिनांक एवं हस्ताक्षर SIGNATURE & DATE 18/04/2016 18/04/2016 19/04/2016 GR NO. 8.30 DATE :28/09/93	

निष्पन्न एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 2 का 27 Page 2 of 27	
सामग्री सूची संख्या INVENTORY NO.	सामग्री सूची संख्या के अधिनियम द्वारा है	SUPERSEDES INVENTORY	1.0 SCOPE : This specification covers the design, manufacture, inspection, performance testing, painting and packing of mechanical vacuum pumps along with drive-motor, control & instrumentation and accessories. The vacuum pumps are to be used for evacuation of air and other non-condensable gases with associated water vapour, from surface type steam condenser for power plant application, during hogging and holding operations.		
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.			2.0 CODES AND STANDARDS : The design, manufacture, inspection, performance testing, painting and packing of main pump and accessories should be proven and as per HEI-Performance Standard for Liquid Ring Vacuum Pumps. Sizing of the main pump shall be as per HEI – Standards for Steam Surface Condensers, unless otherwise specified in the Annexure.		
स्वत्वाधिकार एवं गोपनीय इस दस्तावेज में की गई प्रतिलिपि भारत भारती लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रकाशक रूप में किसी भी प्रकार से बिना लिखित अनुमति के ग्राहक को नहीं किया जाये।			3.0 DESIGN REQUIREMENTS : 3.1 The mechanical vacuum pumps and accessories shall be used for continuous duty, to create and maintain vacuum by removing air and other non-condensable gases with associated water vapour, from the steam condenser during the power plant operation. Final selection should consider compatible operation of the condenser and the pump over the full range of anticipated condenser operating-pressures as indicated in the Condenser Performance Curves enclosed in the Annexure. The selection of design parameters for vacuum pump and its accessories and condenser design conditions are given in the Annexure. 3.2 The pumps shall be of single stage or two stage liquid ring type with suitable compression ratio, to meet the conditions specified in the Annexure and the Condenser Performance Curves, ensuring no cavitations under all operating conditions. Bidder shall indicate the arrangement being offered to avoid cavitation. 3.3 The pump shall be of liquid ring design with both the stages (if it is a two-stage pump) mounted on a common shaft. The unit shall require no external lubrication and shall not be damaged by slugs of water and entrained gases. 3.4 Each pump unit with the accessories shall be furnished as a package unit mounted on a common steel base plate. 3.5 The pumps shall be connected to its motors by flexible couplings. All couplings shall have suitable rigid steel coupling guards having closed ends and anchored to the base plate. 3.6 Each vacuum pump unit shall include, but not be limited to, the items listed under 'SCOPE OF SUPPLY' in Appendix-D and indicated on the 'SYSTEM FLOW DIAGRAM' at Appendix-A. The bidder shall furnish his flow diagram covering complete scope of supply.		
निष्पन्न एवं हस्ताक्षर SIGN & DATE	REV. NO: 03		निर्माणकर्ता WORKED BY	SHAVEZ KHAN	 18/04/16
सामग्री सूची संख्या INVENTORY NO.	2-5708		जांचकर्ता CHECKED BY	SHIVA KANT	 18/04/16

HE 57016 पृष्ठ 3 का 27 Page 3 of 27		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		SIGN & DATE 
SUPERSEDES INVENTORY भारतीय नौका सेवा में अधिष्ठाता द्वारा		Out of the scope of supply, Vacuum pump, Vacuum pump Motor & Seal water recirculation pump are critical sub system for which Pre-Qualification Requirements(PQR) need to be complied.		
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company		a) <u>Vacuum pump</u> : Bidder/Vendor should have designed, manufactured, tested and commissioned as per HEI- performance standard for "Condenser Air Evacuation package" (Liquid ring Vacuum Pump package) and supplied at least two (2) nos of "Vacuum pump" having Free dry Air Capacity 30 SCFM or higher at 1" Hg (abs) and max ITD 13.3 deg C, for two different Thermal Power Plants with units rating of 500 MW or above. "Condenser Air Evacuation package" should be in successful operation for a period not less than two (2) years, as on date of submission of bid.		
स्वामित्विकार एवं गोपनीय इस प्रयोग में की गई प्रतियां भारत हेतु लोकोमोटिव लिमिटेड की संपत्ति हैं। इनका प्रयोग एवं प्रसारण अन्य से किसी भी प्रकार से किए जाने से निषेधित है।		b) <u>Vacuum pump motor</u> : The model/type/size/rating of motor offered should be satisfactorily operating for at least two year in power plants (500MW or higher capacity) at two different locations. Vendor to submit credentials of motor supplier meeting above PQR for BHEL review/approval.		
SIGN & DATE 		c) <u>Seal water Recirculation pump with Motor</u> : The model/type/size/rating of Recirculation pump offered should be satisfactorily operating for at least two year in power plants (500MW or higher capacity) at two different locations. Vendor to submit credentials of Recirculation pump supplier meeting above PQR for BHEL review/approval.		
INVENTORY NO. 25778		3.7 Provision shall be made in the design of the equipment to prevent loss of vacuum by flow of atmospheric air back into the condenser upon shut down of the pump.		
REV. NO.: 03		3.8 The design pressure to be considered for the cooling water circuit is 5.0 kg/sq.cm (g) and for the make-up water circuit as 45 kg/sq.cm (g). The source of make-up and sealing water is D.M. water.		
निर्माणकर्ता WORKED BY		3.9 It shall be sufficient for the owner to connect air and water terminal points to a common Terminal Block and the wiring to the motor's terminal boxes. Shut down drains must be terminated at one point with valve.		
जांचकर्ता CHECKED BY		3.10 All components, including spares and spare-assemblies, (if any) of all the pumps and accessories, shall be completely interchangeable.		
SHIVA KANT		3.11 The Condenser Air-evacuation unit shall perform continuously, without exceeding the noise level of 85 dBA at a distance of 1.0 metre from the unit for a surrounding of the inside of a turbine hall. Silencer shall be provided if required. The vibration levels of the pump unit shall conform to ISO 10816-3, Group-2: Zone-A (Criteria for assessing mech. Vibration of machines).		
SHAVEZ KHAN		3.12 The materials of construction of all the parts including all accessories shall be suitable to the fluids being handled/ used. The source of cooling water shall be as given in the Annexure. The materials of construction shall not be inferior to that specified in the clause 4.0.		
18/4/2016		3.13 Provision shall be made in Heat Exchanger to permit access to tubes without disturbing CW piping connections. Tube size shall not be less than 5/8 inch.		
18/4/16		3.14 Impeller Tip speed to be kept in range of 13-22 m/sec.		
3.15 Pipe fittings: not less than Schedule 40		3.16 NPS (Nominal pipe size) for make-up line to be kept as 1", schedule 40.		
3.17 In case of Air Ejector with Vacuum pump, total package power consumption with Ejector operation and without Ejector operation shall be furnished.		3.18 The tapping for "Level Indicator" & "Level Switch" for separator tank of vacuum pump should be separate and both (LS & LS) should work independently.		
3.19 The counter flanges, Gaskets etc for flanged connections shall be in the scope of supplier.		3.20 Inlet suction connection shall be provided horizontal		

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	3.21 Of the two vacuum pump packages, required per TG set(2x100% design),tube withdrawal space of heat exchanger in one shall be from inlet end and in the other, from outlet end (as indicated below):		
Heat exchanger Tube withdrawal space Motor Vac.pump Separator Heat exchanger Tube withdrawal space Motor Vac.pump Separator			
4.0 MATERIAL OF CONSTRUCTION:			
A. FOR NORMAL WATER APPLICATION:			
1) Main Vacuum pump & Re-circulation Pump: Casting : 2% Ni Cast Iron (GB 9439, HT 250)/ASTM A48,CLASS35 Shaft : Carbon Steel, En-8 or better Impeller : Nodular Iron (ASTM A536,Gr.65-45-12) or better Shaft Sleeve : (If applicable) Stainless Steel			
2) Heat Exchanger (Shell & Tube Type): Shell : Carbon Steel, SA285 Gr. C Tubes : Welded SS, TP 316 Tube Plate : Carbon Steel, SA285 Gr. C Water Box : (Channel) Carbon Steel, SA285 Gr. C/Cast Iron Tube plate & Water box inside shall be epoxy coated. Extra 20% Margin in area shall be provided Cooling Water Pressure drop shall be limited to 3.5 MWC. Vendor to furnish calculation to prove 20% margin in area and 3.5 MWC CW Pressure drop.			
B. FOR SEA WATER APPLICATION:			
1) Main Vacuum pump & Re-circulation Pump: Casting : 2% Ni Cast Iron (GB 9439, HT 250)/ASTM A48,CLASS35 Shaft : Carbon Steel, En-8 or better Impeller : Nodular Iron (ASTM A536,Gr.65-45-12) or better Shaft Sleeve : (If applicable) Stainless Steel			
2) Heat Exchanger (Shell & Tube Type): Shell : Carbon Steel, SA285 Gr. C Tubes : Welded Ti,SB 338,Gr-2 Tube Plate : Titanium/Ti-clad steel Water Box : (Channel) Carbon Steel, SA285 Gr. C/Cast Iron Water box & affected piping inside surface should be suitably coated against sea water application Extra 20% Margin in area shall be provided Cooling Water Pressure drop shall be limited to 3.5 MWC. Vendor to furnish calculation to prove 20% margin in area and 3.5 MWC CW Pressure drop.			
C. Duplex strainer with DPS & DPI is to be provided at CW inlet of Heat Exchanger :			
1) Material (for normal water application): SS 316, for filter body & element. 2) Material (for sea water application) : Gun metal- For filter body. : Monel metal/SS 317 LN- For filter element.			
REV. NO. : 03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/04/2016
जांचकर्ता CHECKED BY	SHIVA KANT	18/4/16	18/4/16

निर्माता एवं ग्राहक SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 5 का 27 Page 5 of 27	
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	5.0 INSTRUMENTS : a) All instrument shall be suitable for 0-55 deg.C, 0-95% RH and degree of protection IP55. b) Accuracy for pressure /temp. gauges shall be +1% of full scale deflection. c) Temperature element shall be 4 wire PT-100,duplex ,conforming to DIN:437600 or equivalent. Thermowells shall be of SS-316. d) Solenoid valves shall be single coil for all applications. 6.0 CONTROL AND INTERLOCK REQUIREMENTS: Automatic Turbine Run up System (ATRS) is being used by Purchaser for the turbine. Pump supplier has to supply all necessary fittings and accessories to enable ATRS to carry out following operations: All process signals from the switches and transmitters etc. (in pump supplier's scope) will be fed to ATRS and command/ signals from ATRS shall be fed to the pump, motors, solenoids etc. (in pump supplier's scope) for carrying out required operations. For further details, refer ATRS/ VACUUM PUMP INTERFACE diagram at Appendix-B. Bidder shall provide all the required instruments, devices, out puts, interfacing equipment etc. as required for completeness of his system and as required to make it compatible with the purchaser's ATRS. The exact requirement shall be finalised with the successful bidder while finalising the logic diagram. The following operations shall be carried out through ATRS: a) Hogging operation for quick evacuation of condenser during turbine start up, up to a predetermined Vacuum. b) Automatic change over from hogging to holding operation at the preset vacuum. c) Automatic starting of the stand by unit in the event of fall in vacuum to a preset value. The range of pressure/vacuum switches and transmitters selected should be suitable for the condenser operating condition. d) Control of anti-cavitation arrangement (Air Ejector) shall be through ATRS (DCS). Vendor to furnish logic and control curves for air ejector operation through DCS. The operation of the cooling water inlet/outlet valves shall be manual (not in pump supplier's scope). All pneumatic valves shall have limit switches for open and closed positions. All switches shall be of 2-SPDT contacts. Repeatability for switches to be $\pm 0.5\%$. 7.0 DRIVE MOTOR: 7.1 Drive motors shall be furnished and mounted by the bidder on the pump unit and the complete assembly shipped as one unit. The horse power of the motor shall not be less than 110% of the maximum BHP required at the pump end. 7.2 Drive motors shall comply with the specification in Appendix – C. 8.0 QUALITY REQUIREMENTS: The vendor shall prepare & submit detailed Quality Plan in the format prescribed, enclosed with the enquiry, for all items/ components/ equipment being manufactured/ supplied by the vendor.			
सामग्री सूची संख्या INVENTORY NO.	स्वत्वधिकार एवं गोपनीयता The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	REV. NO: .03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	12/4/2016
सामग्री सूची संख्या INVENTORY NO.	COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		जांचकर्ता CHECKED BY	SHIVA KANT	18/4/16

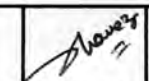
निर्माण का प्रमाण SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
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SUPERSEDES INVENTORY	भारतीय नौसेना की अधिकृत प्रतीक है	The Quality Plan will set out various stages of manufacture, the quality practices & procedures to be followed by them, the relevant reference documents/ standards, acceptance level, inspection records raised etc. The Quality Plan shall be approved by the owner. The owner shall identify customer-hold-points on the final Quality Plan beyond which work shall not proceed without owner's consent in writing. An indicative program of inspection/ test, envisaged by BHEL is given below. This is however not intended to form a comprehensive inspection & testing program, as it is the vendor's responsibility to draw-up & carry out necessary checks from operation, safety and reliability point of view.			
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company		9.0 ROUTINE TESTS: 9.1 Following minimum tests shall be carried-out: - All rotating parts of pumps shall be dynamically balanced as per ISO: 1940, G 6.3. - Shafts shall be subjected to Ultra-Sonic test. After finish machining, shaft shall be subjected to Magnetic Particle or Dye-Penetrate test. Reference & acceptance norms for NDT to be informed for our review / approval. - Pump casings & Heat Exchanger shall be subjected to hydraulic test at 1.5 Times the design pressure or twice the maximum operating pressure for 30 minutes, no leakage allowed. - Pump Casing & Impellers shall be subjected to MPE / DPT. Finished pump rotor shall be subjected to dynamic balancing. The complete package shall be subjected to hydraulic pressure and leakage test and shop tested to check inter locks and functional requirements. - Each pump shall be tested at supplier's works at full speed and load conditions to demonstrate successful operation and performance in accordance with the design requirements. - Functional test of the package for demonstrating that the requisite functions/ interlocks are being performed by the pump and all the accessories. - Tests to demonstrate ability to meet the guaranteed performance (refer clause-V of Appendix-D). The tests must be conducted at rated speed and with its corresponding motor. Bidder to submit correction curves, based upon actual test data, if tests are not conducted at rated conditions. - Dry Air performance test at 1", 2" & 3" Hg (a) to prove the capacity at guaranteed conditions to be carried out. - Type & routine tests for motor as per Appendix-C. In case type tests on motor duly witnessed by third party have already been carried out then the test reports shall be furnished to BHEL along with the bid for information. - Complete equipment and all accessories are subject to visual inspection and witnessing of performance tests by BHEL or its representative at bidder's works. For which at least 45-days advance notice shall be given by the bidder. Complete testing schedule must be furnished within 30 days of letter of intent. - The minimum inspection and testing requirement shall conform to the relevant codes/ standards, whether or not specifically mentioned in the specification. The bidder shall give full consideration to the observations of the inspecting agency regarding acceptance of workmanship and or equipment. - Completeness of Vacuum pump package to be ensured before shipment of Vacuum pump package. 9.2 TEST REPORT: All test reports shall include applicable acceptance criteria, i.e. the test result and the acceptable value or range. This is to help in reviewing/approving the test results/test reports.			
भारतीय नौसेना की INVENTORY NO. 15728	REV. NO: .03	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	 18/4/2016	 18/4/16

निम्न एवं हस्ताक्षर SIGN & DATE ग्राहक की सूची संख्या INVENTORY NO.	HE 57016 पृष्ठ 7 का 27 Page 7 of 27	उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)	
SUPERSEDES INVENTORY ग्राहक की सूची संख्या की अवधि का समय है	10. TYPE TEST : a) Type test-1 : Supplier shall demonstrate by carrying out visual cavitation test that pump will be operating under all operating condition including black-off condition, without cavitation. In case this test has already been accepted by BHEL in earlier projects on the pump of same model, type , size, rating as proposed then records of same to be furnished for approval of BHEL. b) Type test-2 : One complete unit shall also be subjected to demonstrate successful operation and performance testing with saturated air conditions at condenser design vacuum point as well as vacuum pump design point with total minimum three points. The test shall be conducted with respective motors to be supplied. The test shall also include check for vibration and noise level. If saturated air test is already accepted by BHEL in earlier projects on same model, type, size, rating, then test records along with drawing/data-sheet shall be submitted for approval of BHEL. TYPE TEST REPORT: Vendor shall furnish all type test report as mentioned above within 3-weeks of placement of order. These reports shall be for the test conducted within five years from date of bid opening on identical/similar components /equipments with those offered to be supplied. If the type test reports are not found satisfactory by BHEL/End user, the same shall be informed to vendor and all such tests shall be conducted again under this contract by the vendor free of cost and reports shall be submitted for approval.		
	11.0 The bidder shall be responsible for all necessary tests during fabrication/manufacture and before shipment to ensure that the equipment meets the specification and will operate satisfactorily, as an assembled unit. Approval or passing of tests/ inspection and thereby issue of test certificate or waiver of inspection by the inspection agency, shall not relieve the bidder of his responsibilities and obligations under the contract, as well as, shall not bind BHEL to accept the equipment, should it, on further tests after erection, be found not complying with the contract .		
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	12.0 PAINTING REQUIREMENTS: Condenser Air-evacuation Equipment shall be painted as per the following : 1. Priming coat : Epoxy base Zinc rich Primer Paint (2 coats): DFT=70 microns 2. Intermediate coat: Epoxy TiO2 pigmented Polyamide cured Paint(1 coat): DFT=70 microns 3. Finish coat: Aliphatic Acrylic 2 pack Polyurethane Finish Paint: DFT=60 microns 4. Finish paint shade : Blue (RAL 5012) or as per customer : Total DFT=180 microns(minimum) Specific requirements.		
	13. MARKING: Following shall be marked on all the drawings and documents: a. Customer : As in Purchase Order b. Project : -----do----- c. Revision No. and Date of the drawing /documents.		
स्वत्वाधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत भारती भारतीभारत भारतीभारत की संपत्ति है इसका प्रयोग एवं प्रसारण केवल के बिना की न होना चाहिए, जो कि स्वामी के हित में हानिकारक हो न किता	14.0 SPARE : 14.1 START-UP (Erection & Commissioning) SPARES: Bidder shall give separate offer for start-up spares with item wise price break-up. Such spares shall be supplied along with the main pump order. Gear box (if applicable): Necessary Gear oil required for commissioning to be supplied along with Vacuum pump package.		
	REV. NO: .03		
निम्न एवं हस्ताक्षर SIGN & DATE ग्राहक की सूची संख्या INVENTORY NO.	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/16

BHEL भारतीय भारती भारतीय भारती	नवी एम डी एम नवी एम डी एम	उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016 पृष्ठ 8 का 27 Page 8 of 27	
		SUPERSEDES INVENTORY नवी एम डी एम नवी एम डी एम			
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		14.2 RECOMMENDED SPARES: Bidder shall give separate offer for the recommended maintenance spares for five years of normal operation, considering one set (two pump-units), two sets and three sets basis respectively. Quantity recommended must be indicated separately according to the no. of sets under consideration. Details of spares, with item-wise price break-up, must be given with the offer.			
14.3 MANDATORY SPARES: Bidder to quote unit price of the spares, if listed in the Annexure. NOTE: Selected spares, out of 14.2 & 14.3 above, may be ordered simultaneously with the main order, or at a later date, as may be decided by BHEL.		14.4 Each spare item shall be properly identified and marked as per spare order list and dispatched in a separate packing box marked "SPARES".			
15. GUARANTEES: The bidder shall meet the guaranteed performance requirements as specified in clause-V of Appendix-D.		16. PACKING: Condenser Air Evacuation unit must be suitably packed to avoid any damage during handling and transport. Packing must be sea-worthy to avoid any damage /corrosion to all the parts during sea shipment. All the loose items should be properly tacked. Details of handling the package shall be clearly indicated on the packing box. Packing list, clearly indicating the items to be shipped in each package, must be sent to BHEL, 2 months in advance. All the loose items and the items likely to be loosened during transit, should be listed separately, to ensure completeness of supply. Two copies of the packing list must be put at safe places, one inside the package and the other outside the package. Two copies of approved O&M manual must be put at safe place inside the package.			
17.0 AFTER SALES SERVICE: 17.1 To resolve the Vacuum pump related issues, vender to visit site two times in two years after expiry of guarantee period, free of cost. Each visit shall be of two days. 17.2 Bidder to indicate clearly the specific arrangement made by him for after sales service in India. 17.3 Bidder shall offer supervision for commissioning of Vacuum Pump package. The supervision work shall be applicable for the first time commissioning of the Vacuum Pump package for each TG set. Service Engineer of the vendor should directly visit site, for which visit date shall be finalized with Purchase/Commercial /Site. For successful commissioning of Vacuum pump package, vender to supervise at site for four working days per Vacuum pump package free of cost.		18.0 DATA / DOCUMENT REQUIRED WITH THE BID: Bidder shall invariably furnish six prints of the following documents in English language: 18.1 General arrangement drawing of vacuum pump package, showing overall dimensions, maintenance clearances required mounting and connection details, weights: empty/operating/ flooded/ motor/ bare pump, list of items with their location in the package unit, foundation bolts and their grouting details etc.			
REV. NO: .03		निर्माणकर्ता WORKED BY SHAVEZ KHAN जांचकर्ता CHECKED BY SHIVA KANT			
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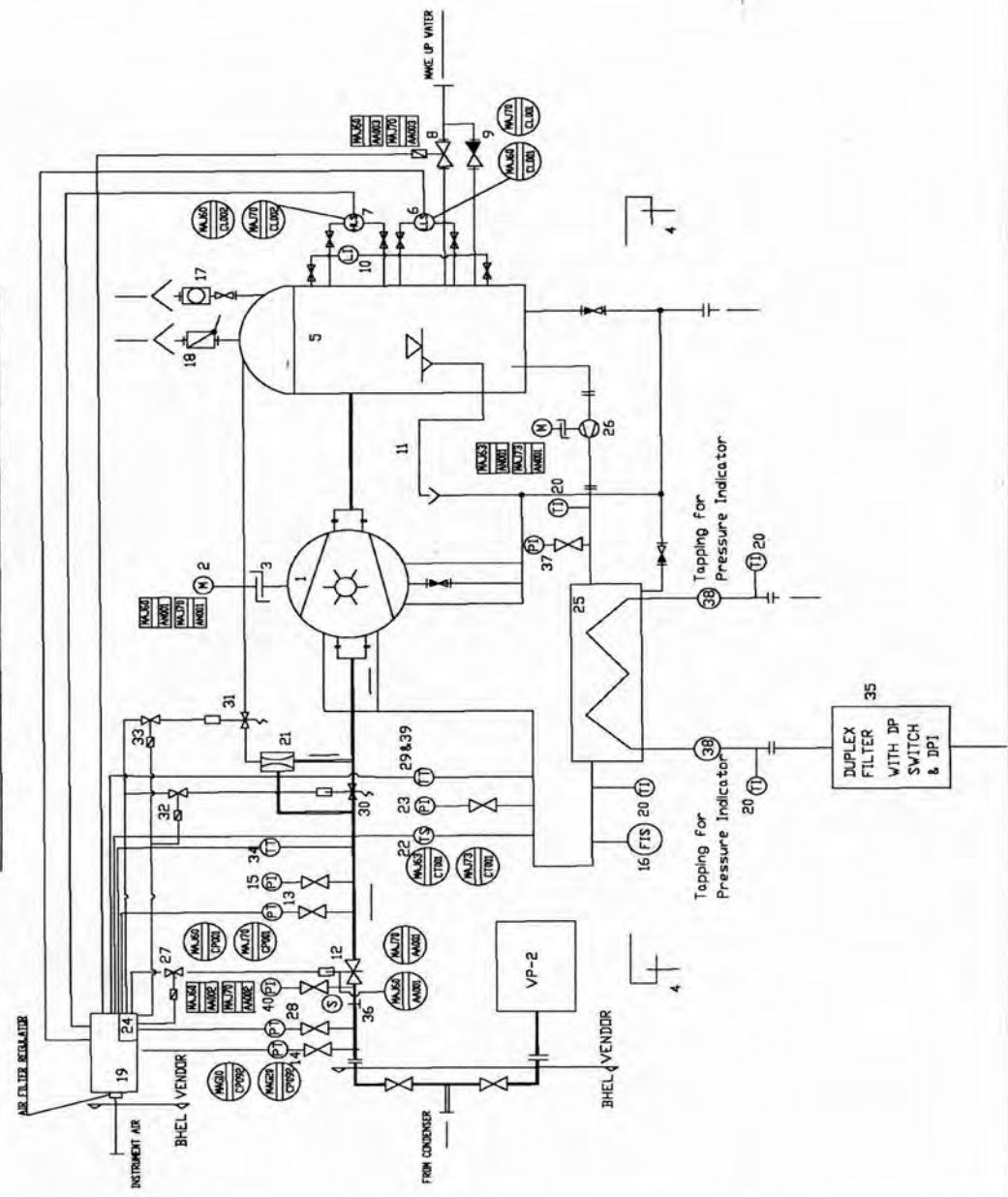
निष्कर्ष एवं हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
सामग्री सूची संख्या INVENTORY NO.		SUPERSEDES INVENTORY		पृष्ठ 9 का 27 Page 9 of 27			
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used, directly or indirectly, in any way detrimental to the interest of the company.		18.2 Sectional arrangement drawing of the pump showing all components with their material specification numbers etc. 18.3 Flow diagram indicating terminal points and scope of supply with all the Equipments/instruments/switches/valves etc. being supplied. 18.4 Logic diagram showing sequence of operation, with the conditions to be fulfilled, from initial start to stand by pump start and stop. 18.5 Appendix-D & E duly filled in for the pump & the motor data respectively. 18.6 Performance Characteristic curves: a) Dry air Capacity of pump (saturated with water vapor at 4.17 deg.C under cooling) vs. Suction Pressure, at rated speed and different ITDs at and around the rated ITD (saturation temperature corresponding to suction pressure minus CW inlet temperature to the Heat Exchanger). b) Suction pressure vs. cooling water inlet temperature to heat exchanger, for different air leakage rates, covering at least 2.5 times the design air handling capacity of the pump at 1"Hg abs. suction pressure. c) Power consumption vs. suction pressure at rated ITD. d) Time vs Vacuum, while evacuating the volume specified in the Annexure. e) Dry air performance test curves and seal water temp. correction curves. f) Hogging performance curve. g) Holding performance curve. 18.7 Saturated air test results and visual cavitation test result with procedure and scheme, if such tests are already carried out on proposed size & model pump. 18.8 Wiring diagram for all devices connected to the terminal box feedback to ATRS and control signals from ATRS, clearly showing the break-up of the scope of supply between the bidder and the purchaser (refer Appendix-B). 18.9 Bill of materials of all instruments (instrument schedule) along with the manufacture's catalogues and data sheets for critical item and also the recommended set point. 18.10 Complete list of feeder loads (power supply requirements for various drives) including solenoid valves. 18.11 List of startup, recommended and mandatory (if specified in the Annexure) spares, with unit price and quantity installed per pump. 18.12 Quality Plan on BHEL format along with the testing procedures. 18.13 Operation & control philosophy of vacuum pump package, including all control, interlocks & etc. 18.14 Data as asked in PQR for Vacuum pump, Vacuum pump Motor & Seal water recirculation pump. 19.0 DATA / DOCUMENT AFTER AWARD OF ORDER : 19.1 Following final data/ documents are required within 3-weeks after the placement of order in 15-copies and 3 CD ROMs per project duly incorporating BHEL comments:-- 19.1.1 General arrangement drawing of the pump unit, along with a reproducible, as per clause 18.1 above. 19.1.2 Sectional arrangement drawing as per clause 18.2 above. 19.1.3 Flow diagram as per clause 18.3 above. 19.1.4 Logic diagram as per clause 18.4 above. 19.1.5 Appendix-D & E, duly filled in, for the pump & the motor data respectively. 19.1.6 Characteristic curves: a) Performance characteristic curves as per clause 18.6 above. b) Motor characteristic curves as per clause V of Appendix-E. 19.1.7 General arrangement drawing of the motor indicating overall dimensions, weights (rotor, total), fixing details, rotor removal space etc.					
निष्कर्ष एवं हस्ताक्षर SIGN & DATE		सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		निर्माणकर्ता WORKED BY	
निष्कर्ष एवं हस्ताक्षर SIGN & DATE		सामग्री सूची संख्या INVENTORY NO.		जांचकर्ता CHECKED BY		SHAVEZ KHAN SHIVA KANT	
निष्कर्ष एवं हस्ताक्षर SIGN & DATE		सामग्री सूची संख्या INVENTORY NO.		18/4/2016		18/4/16	

निम्न पर हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016 पृष्ठ 10 का 27 Page 10 of 27	
सुपरसेड्स INVENTORY	19.1.8 Foundation drawing clearly indicating loads on each foundation bolt (due to weight and dynamic loads), pocket size, foundation bolt etc., grouting required etc. 19.1.9 Instrument schedule along with manufacture's catalogues and data sheets. 19.1.10 List of feeder loads as per clause 18.10 above. 19.1.11 General and sectional arrangement drawing of seal water recirculation pump & heat exchanger. 19.1.12 Wiring diagram as per clause 18.8 above. 19.1.13 General arrangement drawing and wiring diagram of anti-cavitation device (if provided)				
कॉपीराइट और कॉन्फिडेंशियल The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	NOTE: Exchange of technical information from the date of receipt of quotation till placement of order may warrant changes in drgs./ data furnished during the bid, in such event "preliminary data/ document" shall be furnished as per clause 19.0 above in 3-copies for our review/ comments /approval within 2-weeks of LOI. Final data/ documents (in 20-copies) to be supplied subsequently as per clause 19.0 above, after incorporating our comments, if any. 19.1.14 To assess progress at different stages of manufacturing, testing & dispatch of equipment/major parts/ spares, L2 network shall be furnished. 19.1.15 Thermal design calculation for Heat exchangers: Vender should furnish Thermal design calculation for Heat exchangers. 19.1.16 Hogging capacity calculation for Vacuum pump package. 19.1.17 Holding capacity calculation at 1", 2", & 3" Hg-a for Vacuum pump package. 19.1.18 Performance test calculation at 1", 2", & 3" Hg-a. 19.2.0 Quality assurance document package : Following certificates /inspection reports, NDT reports (in 3-copies per pump) are required after test. Equipment should be dispatched only after acceptance of the test certificates. 19.2.1 Material test certificates of Pump casing, shaft, impeller, sleeves of main pump, tubes, shell and water boxes of heat exchanger including Chemical, Mechanical, NDT& Hydro test as applicable. 19.2.2 Hydraulic test certificates of main and seal water pump heat exchanger, valves etc. 19.2.3 Performance test results of Seal water recirculation pump. 19.2.4 Performance test readings along with test set up and procedure for main vacuum pump with correction curves/factors and calculation to prove the capacity of the pump. 19.2.5 Test result of main Motor as per appendix C. 19.2.6 Test certificate for Seal water recirculation pump motor. 19.2.6 Test certificates of all switches, solenoid valves, all valves, calibration certificates of all instruments. 19.2.7 Other Certificates/ Reports required as per approved quality plan: 19.3 Installation Operation and maintenance instructions: a. Following shall be mentioned on first page of O & M manual. i) Project Name Vacuum Pump serial number. ii) First time commissioning shall be done by vendor representative in presence of BHEL site representative. iii) Site to inform BHEL Haridwar well in advance for arranging of vendor visit for commissioning of Vacuum pump package.				
स्वत्वाधिकार एवं गोपनीयता This document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	19.2.0 Quality assurance document package : Following certificates /inspection reports, NDT reports (in 3-copies per pump) are required after test. Equipment should be dispatched only after acceptance of the test certificates. 19.2.1 Material test certificates of Pump casing, shaft, impeller, sleeves of main pump, tubes, shell and water boxes of heat exchanger including Chemical, Mechanical, NDT& Hydro test as applicable. 19.2.2 Hydraulic test certificates of main and seal water pump heat exchanger, valves etc. 19.2.3 Performance test results of Seal water recirculation pump. 19.2.4 Performance test readings along with test set up and procedure for main vacuum pump with correction curves/factors and calculation to prove the capacity of the pump. 19.2.5 Test result of main Motor as per appendix C. 19.2.6 Test certificate for Seal water recirculation pump motor. 19.2.6 Test certificates of all switches, solenoid valves, all valves, calibration certificates of all instruments. 19.2.7 Other Certificates/ Reports required as per approved quality plan: 19.3 Installation Operation and maintenance instructions: a. Following shall be mentioned on first page of O & M manual. i) Project Name Vacuum Pump serial number. ii) First time commissioning shall be done by vendor representative in presence of BHEL site representative. iii) Site to inform BHEL Haridwar well in advance for arranging of vendor visit for commissioning of Vacuum pump package.				
निम्न पर हस्ताक्षर SIGN & DATE 23/4/16	REV. NO: 03				
सामग्री सूची संख्या INVENTORY NO. P-5778	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016 18/4/16		

निर्माण एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 11	का 27
SUPERSEDES INVENTORY		b. Pre commissioning check list shall be included at start of the Vacuum pump O & M manual. c. Bidder shall furnish one CD ROMS of IOM for pump, motor & all the accessories under his scope clearly indicating the models and sizes supplied with the unit, for each site/ BHEL contract for BHEL approval. d. Bidder shall furnish 20 copies & 3 CD ROM's of approved O & M manual per project. e. Two copies of the approved O & M manual, shall be sent along with Vacuum pump package.			
मापदंड सूची संख्या को अधिकतम स्तर है		20.0 ADDITIONAL TECHNICAL INFORMATION:			
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company		20.1 APPENDICES: The following appendices, as referred in subsequent pages of this specification, are the integral part of this specification and shall be complied with fully: APPENDIX – A : System Flow Diagram APPENDIX – B : ATRS – Vacuum Pump Interface APPENDIX – C : Induction Motor Specification APPENDIX – D : Vacuum Pump Data Sheet & characteristics curves APPENDIX – E : Motor Data Sheet & characteristics curves			
		20.2 ANNEXURE: The technical requirements relating to specific design conditions, water-chemistry, special material requirements of client, capacity or any other special requirement from the client shall be supplied as "ANNEXURE". This information would vary from contract to contract and shall be treated as integral part of this specification . To avoid any ambiguity, all the sheets of the ANNEXURE for each order/ contract shall be identified as under: ANNEXURE to HE57016 SHEET ----- OF ----- (-----*-----) * name of project shall be indicated here.			
स्वत्वाधिकार एवं गोपनीय यह प्रयोग के बिना यदि इसका प्रसार किसी भी प्रौद्योगिकी विनिर्देश की संपत्ति है प्रकटा प्रकट एवं अवलोकन रूप में किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाय।					
निर्माण एवं हस्ताक्षर SIGN & DATE	25/4/16				
मापदंड सूची संख्या INVENTORY NO.	REV. NO: .03			निर्माणकर्ता WORKED BY	SHAVEZ KHAN
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					18/4/2016
					18/4/16

सापेक्ष सूची संख्या INVENTORY NO. P-5778	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16	स्वत्वधिकार एवं गोपनीयता इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है, इसका प्रयोग एवं अनावरण केवल उसी व्यक्ति द्वारा ही किया जा सकता है, जो कि भारत हेवी इलेक्ट्रिकल्स लिमिटेड से हस्तांतरित किया गया है। COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16
सापेक्ष सूची संख्या INVENTORY NO. P-5778	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16	स्वत्वधिकार एवं गोपनीयता इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है, इसका प्रयोग एवं अनावरण केवल उसी व्यक्ति द्वारा ही किया जा सकता है, जो कि भारत हेवी इलेक्ट्रिकल्स लिमिटेड से हस्तांतरित किया गया है। COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16
सापेक्ष सूची संख्या INVENTORY NO. P-5778	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16	स्वत्वधिकार एवं गोपनीयता इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की संपत्ति है, इसका प्रयोग एवं अनावरण केवल उसी व्यक्ति द्वारा ही किया जा सकता है, जो कि भारत हेवी इलेक्ट्रिकल्स लिमिटेड से हस्तांतरित किया गया है। COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	दिनांक एवं संशोधन SIGN & DATE 2005-23/4/16

CONDENSER AIR EVACUATION SYSTEM

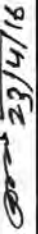


SYSTEM FLOW DIAGRAM

APPENDIX-A

REV. NO. :03

निर्माणकर्ता WORKED BY	SHAVEZ KHAN
जांचकर्ता CHECKED BY	SHIVA KANT

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				पृष्ठ 13 का 27 Page 13 of 27	
सुपरसेड INVENTORY	भारती सूची संख्या को अधिकृत करता है	ITEM DESCRIPTION APPENDIX-A 1. VACUUM PUMP, 2-STAGE (OR 1-STAGE) 2. MOTOR 3. COUPLING 4. FOUNDATION BOLT+NUT+WASHER 5. SEPARATOR 6. LOW LEVEL SWITCH WITH ISOLATION VALVE 7. HIGH LEVEL SWITCH WITH ISOLATION VALVE 8. MAKE UP WATER INLET VALVE (SOLENOID VALVE -24VDC)-SINGLE COIL 9. MAKE UP WATER BY PASS VALVE 10. LEVEL INDICATOR WITH ISOLATION VALVE 11. OVER FLOW SYPHON LOOP 12. SYSTEM INLET VALVE WITH OPEN/CLOSE LIMIT SWITCH 13. PRESSURE TRANSMITTER FOR INLET VALVE OPERATION. 14. PRESSURE TRANSMITTER FOR STAND BY PUMP OPERATION. 15. PRESSURE INDICATOR WITH VALVE (VACUUM GAUGE) 16. SEAL WATER FLOW SWITCH CUM INDICATOR 17. AIR FLOW METER (ROTAMETER) 18. AIR OUTLET CHECK VALVE WITH HANDLE 19. JUNCTION BOX (REFER DRG.NO.) 20. TEMPERATURE INDICATOR 21. AIR EJECTOR (IF APPLICABLE) 22. TEMPERATURE SWITCH 23. PRESSURE INDICATOR 24. PLC FOR EJECTOR (IF APPLICABLE) 25. HEAT EXCHANGER 26. SEAL WATER PUMP WITH MOTOR 27. SOLENOID VALVE (24VDC) FOR INLET VALVE (SINGLE COIL) 28. PR. TRANSMITTER FOR EJECTOR (IF APPLICABLE) 29. TEMP. TRANSMITTER FOR SEAL WATER FOR EJECTOR (IF APPLICABLE) 30. BY-PASS VALVE FOR EJECTOR (IF APPLICABLE) 31. MOTIVE AIR VALVE FOR EJECTOR (IF APPLICABLE) 32. SOLENOID VALVE (24V DC) FOR EJECTOR (IF APPLICABLE)-SINGLE COIL 33. SOLENOID VALVE (24V DC) FOR EJECTOR (IF APPLICABLE)-SINGLE COIL 34. TEMPERATURE TRANSMITTER IN SUCTION LINE 35. DUPLEX FILTER WITH DP SWITCH&DPI 36. TEMPORARY INLET SCREEN 37. PRESSURE INDICATOR 38. TAPPING FOR PRESSURE INDICATOR 39. TEMPERATURE TRANSMITTER IN SEAL WATER LINE 40. PRESSURE INDICATOR WITH VALVE 41. AIR FILTER REGULATOR.			
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		स्वत्वाधिकार एवं गोपनीय इस दस्तावेज में दी गई प्रकृत भारत हेवी एलेक्ट्रिकल लिमिटेड की संपत्ति है। इसका प्रयोग एवं प्रसारण केवल उसी उद्देश्य के लिए ही किया जा सकता है जो कि दस्तावेज में उद्दिष्ट है। इस दस्तावेज को बिना लिखित अनुमति के किसी भी व्यक्ति को प्रसारित नहीं किया जा सकता।			
निम्न एवं हस्ताक्षर SIGN & DATE 	23/4/16				
भारती सूची संख्या INVENTORY NO. 25728	REV. NO.: 03		निर्माणकर्ता WORKED BY SHAVEZ KHAN		18/4/2016
			जांचकर्ता CHECKED BY SHIVA KANT		18/4/16

मासुकी सुकी संख्या INVENTORY NO. P-5778	दिनांक एवं हस्ताक्षर SIGN & DATE 22/4/16	स्वत्वाधिकार एवं गोपनीयता The information on this documents is the property of Bharat Heavy Electrical Limited It must not be used directly or indirectly in any way detrimental to the interest of the company.	SUPERSEDES INVENTORY मासुकी सुकी संख्या को प्रतिस्थापित करना है	HE 57016 पृष्ठ 14 का 27 Page 14 of 27
 उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR) HE 57016				
ATRS/VACUUM PUMP INTERFACE CONTROL ROOM ATRS Console insert with push button stations Manual command to start/stop control Sequence control Manual command to start/stop Pump/valve Status check Pump/valve back of ALARM WINDOWS CONTROL EQUIPMENT ROOM ATRS Cabinets for - Sequence control. - Binary signal conditioning. - Drive control interface. MOTOR CONTROL CENTRE 220 V 415 V DC or AS SPECIFIED on/off Pump (command) on/off solv. valve (command) on/off Make up solv. valve (command) on/off Recir pump (command) on/off Pump (check back) on/off solv. valve (check back) on/off Makeup solv. valve (check back) on/off Recir pump (check back) TURBINE HALL Vendor's scope TERMINAL BLOCK 1COC for differential pre-ssure across system inlet valve 1COC for sperator water level low 1COC for system vacuum switch 1COC for system inlet valve close 1COC for system inlet valve open - Makeup solv. valve (typ.) - MAIN PUMP (typ.) - RECIR. PUMP - solv. valve (typ.) - To system inlet, valve Alarm contacts 1COC each. Legend : COC = Change over contact Vacuum pump unit				
REV. NO.: 03			निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT
				18/4/2016 18/4/16

SIGNATURE SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
SUPERSEDES INVENTORY		पृष्ठ 15 का 27 Page 15 of 27					
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		APPENDIX-C INDUCTION MOTOR – SPECIFICATION					
स्वत्वाधिकार एवं गोपनीयता यह प्रयोग के बिना यह दस्तावेज़ भारतीय विद्युत प्राधिकरण की संपत्ति है। इसका प्रयोग एवं प्रसारण बिना अनुमति के किये जाने पर कानून के अन्तर्गत दण्डनीय होगा।		1.0 SCOPE: This specification covers the design, manufacture, painting, inspection and testing at vendor's / sub-vendor's works of three phase squirrel cage induction motor. These requirements shall however be read along with the requirements of the respective driven equipment being supplied under the specification.					
		2.0 CODES AND STANDARDS :					
		2.1 All motors shall conform to the latest applicable standards of IS and IEC, except where modified or supplemented by this specification.					
		2.2 Motors shall conform to the latest revisions of the following Indian Standards or equivalent IEC/ VDE Standards for the applicable motor type rating.					
		IS : 325 Specification for three phase induction motors.					
		IEC : 60034 Specification for three phase induction motors.					
		IS : 1231 Dimensions of three phase foot mounted induction motors.					
		IS : 2253 Types of construction and mounting of motors.					
		IS : 3202 Code of practice for climate proofing of electrical equipment.					
		IS : 4029 Guide for testing three phase induction motors.					
		IS : 4691 Degree of protection provided by enclosure for electrical machines.					
		IS : 4722 Specification of rotating electrical machines.					
		IS : 6362 Designation of method of cooling of rotating electrical machines					
		IS : 12075 Mechanical vibration of rotating electrical m/s.(IEC: 60034-14)					
		IS : 12065 Permissible limits of noise level for rotating electrical machines					
		IS : 12615 Induction motors-Energy efficient,three-phase, squirrel cage specification. (IEC:60034-30)					
		2.3 Other standards, which ensure equal or better quality than specified, may be acceptable, however differences are to be brought out clearly.					
		2.4 The design, manufacture, installation and performance of motors shall conform to the provision of latest India Electricity Act and Indian Electricity Rules. Nothing in these specifications shall be construed to relieve the contractor of this responsibility.					
		2.5 Degree of protection for motors and cable-boxes shall be IP54 or Better.					
INVENTORY NO. P.5778		REV. NO: .03		निर्माणकर्ता WORKED BY		SHAVEZ KHAN	
				जांचकर्ता CHECKED BY		SHIVA KANT	
						18/4/16	

निर्माण संख्या SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
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सुपरसेड्स INVENTORY	3.0 <u>DRIVEN EQUIPMENT:</u> a) Motors shall be rated for continuous duty (S1) for giving satisfactory operation for the application and duty as required by the driven equipment at all conditions of operation. b) Maximum continuous motor rating shall be at least 10% above the maximum load demand of the driven equipment under entire operating range including voltage & frequency variations. 4.0 <u>PERFORMANCE AND CHARACTERISTICS:</u> 4.1 Motors shall be capable of giving rated output without reduction in expected life span when operated continuously in the system having the following particulars. a) Rated voltage: 415 Volts (3 phase, 50 Hz) b) Variation in voltage + 10 % c) Variation in frequency + 5 % d) Combined voltage & frequency variation 10 % (sum of absolute values) 4.2 Motors shall be suitable for full direct on line starting. These shall be capable of starting and accelerating to rated speed along with the driven equipment without exceeding the acceptable winding temperature, even when the supply voltage is 80% of the rated voltage, the permissible voltage specified above. 4.3 The locked rotor current shall not exceed 600% of rated full load current inclusive of tolerances. 4.4 Motors shall be designed as to be capable of withstanding the voltage and torque stresses developed due to the difference between the motor residual voltage and incoming voltage equal to 150% of rated voltage during fast changeover of buses. 4.5 Motors shall be capable of developing rated full load torque even when the supply voltage drops to 70% of rated voltage. Such operation is envisaged for a period of one second. The pull out torque of the motor to meet this requirement shall not be less than 205% of full load torque. 4.6 Motors shall be designed to with stand 120% of rated speed for two minutes without any mechanical damage in either direction of rotation. 4.7 Motors shall be capable of satisfactory operation of full load at a supply voltage of 80% of rated voltage for 5-minutes, commencing from not condition. 4.8 The locked rotor withstand time under hot condition at rated voltage shall be at least 2.5 seconds more than the starting time. 4.9 The ratio of locked rotor KVA at rating voltage to rated KW shall not exceed the following (without any further tolerance) a) Below 110 KW : 11.0 b) From 110 KW up to 200 KW : 9.0 4.10 Motors when started with the drive imposing its full starting torque under the specified supply voltage variations (see clause 4.1) shall be capable of withstanding at least two starts in succession under the specified conditions of load, torque and inertia, with the motor immolate at its normal running temperature. The motors shall also be suitable for three equally spread starts per hour under above specified supply conditions. 4.11 Operational requirements: Starting Time:- For motors with starting time up to 20 secs. at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be at least 2.5 secs. more than starting time. For motors with starting time more than 20 secs. and up to 45 secs at minimum permissible voltage during starting, the locked rotor withstand time under hot condition at highest voltage limit shall be at least 5 secs. more than the starting time. 4.12 Motor shall be energy efficient, Efficiency class-EFF2, conforming to IS:12615, or High efficiency (IE3) as per IEC:60034-30				
सार्वजनिक एवं गोपनीय इस प्रतीक से दी गई सूचना भारत की सार्वजनिक विनिर्देश की शर्तों के अधीन है। इसका प्रयोग एवं प्रकाशन के बिना की गई प्रतिलिपि को बिना सार्वजनिक के बिना से प्रतिकारक की न किया जाये।	COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.				
निर्माण संख्या SIGN & DATE 25/4/16	REV. NO: 03				
सार्वजनिक एवं गोपनीय INVENTORY NO. P-5778	निर्माणकर्ता WORKED BY SHAVEZ KHAN		जांचकर्ता CHECKED BY SHIVA KANT		18/4/2016 18/4/16

निष्कर्ष एवं हस्ताक्षर SIGN & DATE SUPERSEDES INVENTORY भारतीय मूल की सामग्री को अधिनिर्दिष्ट करना है		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016							
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5.0 INSULATION AND WINDINGS: All insulated winding conductors shall be of copper. Class of insulation must be at least class – B. The winding shall be suitable for hot, humid, tropical climate with ambient temperature of 50.0 deg C. The insulation shall be given Non –hygroscopic oil resistant flame resistant fungicidal and tropical treatment as per IS: 3202. 6.0 TEMPERATURE RISE:(For Air Cooled motors) The maximum permissible temperature rise over the ambient temperature of 50 deg.C shall be limited to 70 deg C, by resistance method, for class B insulation. 7.0 CONSTRUCTIONAL FEATURES: 7.1 The motor construction shall be suitable for easy disassembly and assembly. The enclosure shall be sturdy and shall permit easy removal of part of the motor for inspection /repairs. 7.2 Rotor shall be properly balanced so as to keep the vibration under running condition with in the limits specified in relevant standards. 7.3 Rotors shall be so designed as to keep the combined critical speed with the driven equipment away from the running speed by at least 20%. 7.4 Two independent earthing points shall be provided on opposite side of the motor for bolted connection for owner's earthing conductor. Size of earthing conductor is to be specified. 7.5 Motors shall have drain plugs so located that they will drain water resulting from condensation or other causes from all pockets in the motor casing. 7.6 Motors weighing more than 25Kg. shall be provided with eye bolt lugs or other suitable means to facilitate lifting. 7.7 Motor shall be either TEFC (Totally enclosed fan cooled) or CACA (close Air circuit Air cooled) type. 7.8 Noise Level & Vibration Level shall be within limit as per IS: 12065 & IS: 12075 respectively. Motors shall withstand vibrations produced by the driven equipment. 7.9 System fault level may be considered as 50 KA RMS (max)for one second. 7.10 The spacing between gland plate and centere of terminal stud shall be as follows: <table border="1"> <thead> <tr> <th>Motor rating</th> <th>Dimension of terminal boxes (min distance between centre of stud and gland plate in mm)</th> </tr> </thead> <tbody> <tr> <td>a) Above 90 KW-upto 125 KW</td> <td>331</td> </tr> <tr> <td>b) Above 125 KW-upto 200 KW</td> <td>203</td> </tr> </tbody> </table> 8.0 BEARINGS: 8.1 Greased ball and/or roller bearings shall be of reputed make. The minimum standard life of bearings shall not be less than 30,000 working hours taking all motor and driven loads into account. These shall be pressure grease gun lubricated type, fitted with grease nipples and shall have relief device. 8.2 Bearing and their housings shall be so constructed that loss of grease and its creeping along the shaft into motor housing is prevented. It shall also prevent dirt and water from getting into the motor. 9.0 SPACE HEATERS: 9.1 Space heaters shall be provided for all motor above 30 KW capacity suitable for 240 Volt single phase, 50Hz, supply. 9.2 Terminals of the space heaters shall be brought out on a separate terminal box. 10.0 TERMINAL BOX AND LEADS: 10.1 Separate terminal box should be provided for each of the following: a) Stator leads b) Space heaters						Motor rating	Dimension of terminal boxes (min distance between centre of stud and gland plate in mm)	a) Above 90 KW-upto 125 KW	331	b) Above 125 KW-upto 200 KW	203
Motor rating	Dimension of terminal boxes (min distance between centre of stud and gland plate in mm)										
a) Above 90 KW-upto 125 KW	331										
b) Above 125 KW-upto 200 KW	203										
भारतीय मूल की सामग्री INVENTORY NO 95778		REV. NO: 03		निर्माणकर्ता WORKED BY SHAVEZ KHAN							
भारतीय मूल की सामग्री INVENTORY NO 95778		जांचकर्ता CHECKED BY SHIVA KANT		19/4/2016 18/4/16							

निर्माणक SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
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सामग्री सूची संख्या INVENTORY NO.	सामग्री सूची संख्या को अवधारित करना है	SUPERSEDES INVENTORY	10.2 Terminal boxes shall be of weather proof construction designed for outdoor service. To eliminate entry of dust and water, gaskets of neoprene or approved equivalent, shall be provided at cover joints and between box and motor frame. 10.3 Terminal box shall be suitable for both top and bottom entry of cables. 10.4 Unless otherwise approved, the terminal box shall be capable of being turned through 360 degree in steps of 90 degrees. 10.5 All 415 volts terminal boxes shall be suitable for receiving 1.1 KV grade PVC insulated, PVC sheathed cables conforming to IS-1554. 10.6 Suitable tinned brass compression type cable glands and cable lugs shall be supplied by the contractor to match owner's cables. 10.7 Marking of all terminals shall be in accordance with IS-4728. 10.8 Motor terminal box shall be supplied with cable glands of Nickel- Chromium plated brass, heavy duty, double compression, conforming to BS: 6121, cable lugs suitable for stranded Aluminium cable and non-magnetic gland plate. 11.0 RATING PLATES: 11.1 Rating plates shall be provided for all motors, giving the details as called in the relevant standard e.g. IS:325, for three-phase squirrel cage induction motor. 11.2 In addition to above, the rating plates shall indicate the following: a) Temperature rise in deg.C under normal working conditions. b) Phase sequence corresponding to the direction of rotation for the application. c) Bearing identification number (in case of ball /roller bearing) and recommended lubricant. 12.0 TESTS: 12.1 Motors, after complete assembly shall be subjected to both type and routine tests as per IS:325 standards. If however, the motor being supplied is a standard one, type test results carried out earlier on prototype or on any other machine of the same frame size duly witnessed by third party shall be furnished along with the bid for BHEL informations. 12.2 In addition, the following tests shall also be carried out. a) Motors shall be designed to withstand 1.2 times the maximum rated speed for 2 minutes duration as specified in IS: 325. b) Measurement of vibration shall be carried out as specified in IS: 12075. 12.3 Results of routine tests and type tests in accordance with the relevant standards, on all motors, shall be furnished in 4 copies to BHEL for their scrutiny and approval. 12.4 Type Test (electrical Motor) : Type test reports, duly witnessed by third party for the tests as per IS or IEC standards (mentioned above) shall be submitted for LT-motors above 20KW. Type tests shall include IR, HV, No load run test & Degree of protection test. 12.5 <u>QA and Inspection (Electric motor) :</u> Visual /dimension: Y Resistance measurement: Y IR measurement before and after HV test: Y HV test: Y Reduced voltage no load running : Y No load test: Y Phase sequence, terminal marking and Direction of Rotation: Y Vibration measurement: Y Over speed test, 120% of rated speed, for 2 min: Y SC test/ locked rotor test : Y		
सामग्री सूची संख्या INVENTORY NO.	स्वत्वाधिकार एवं गोपनीयता इस दस्तावेज में दी गई प्रमाण पत्र, हीप, लोडिंग/उत्पन्न विनिर्देश की जानकारी है। इसका प्रयोग केवल हीप के निर्माण के लिए ही किया जा सकता है। इसका प्रयोग अन्य किसी भी हेतु के लिए नहीं किया जा सकता है।	COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	निर्माणक SIGN & DATE	23/4/16	REV. NO: .03
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BHEE श्री एम ई एल	उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
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SUPERSEDES INVENTORY	APPENDIX-D VACUUM PUMP : DATA SHEET & CHARACTERISTICS CURVES (To be filled in & submitted with the bid)			
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.	I GENERAL : - Duty : Condenser Air Evacuation System - Type : Liquid Ring Type - Manufacturer's name : - Model No. : - Country of origin : - Quantity per unit : - Project :			
स्वत्व अधिकार एवं गोपनीय इस दस्तावेज में की गई सूचना भारत भारती लिमिटेड का संपत्ति है। इसका प्रयोग एवं प्रकाशक रूप में किसी भी तरह प्रयोग को बिना भारत भारती लिमिटेड की अनुमति के बिना न किया जाए।	II SCOPE OF SUPPLY : (Refer system flow diagram at Appendix-A, for identification of various parts /components) - Vacuum Pump Yes - Main drive motor with space heater Yes - Coupling with coupling-guard Yes - Combined base plate (with foundation bolts, nuts, shims, washers) Yes - Air water separator Yes - Water level gauge (on separator) Yes - Rotameter with isolating valve Yes - Check valve at separator outlet (with silencer, if required) Yes - High & low level switches for alarm/ annunciation Yes - Seal water make-up solenoid valve Yes - Seal water float operated over flow valve/ overflow drain loop Yes - System inlet valve Yes - Pressure Transmitters (inlet & outlet of butterfly valve) Yes - Pressure Transmitter for stand by pump operation Yes - Vacuum gauge with valve Yes - Air ejector system Yes/No - Anti-cavitation device with control Yes - Instrument air filter - regulator Yes - Seal water recalculation pump with motor Yes - Heat exchanger (shell & tube type) Yes/No (Tube O.D. shall not be less than 5/8") - Heat Exchanger (Plate Type) Yes/No - Pressure gauge with valve Yes/No - Seal water Flow indicator meter Yes (for seal water flow measurement) - Seal water flow switch Yes - Seal water temperature switch Yes - Temperature gauge with thermo well Yes (at all the four terminals of the heat exchanger) - Terminal box Yes - Necessary valves/piping/ instruments etc. Yes (to make the system complete) - Companion flanges with gaskets, fasteners etc. Yes (for purchaser's terminal points) - Strainer in seal water line Yes			
BHEE श्री एम ई एल	REV. NO: .03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/4/2016
BHEE श्री एम ई एल	INVENTORY NO. P-5778	जांचकर्ता CHECKED BY	SHIVA KANT	18/4/16

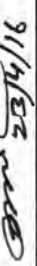
दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.			III DESIGN AND PERFORMANCE : 1. Codes and Standards : 2. Capacity of Pump in free dry Air with Condenser operating at design Pressure of 1" Hg(abs) and sub-cooled to 4.17 deg.C below temperature corresponding to absolute suction Pressure at design vacuum ITD----- deg.C (SCFM-at 14.7 psia & 70 deg F). SCFM 3. Hogging capacity at 10" Hg-A at design condenser CW temperature. a) At 15 dec C design condenser CW temperature SCFM b) At 33 dec C design condenser CW temperature SCFM 4. Pump design Temperature: deg C 5. Pump design Pressure: kg/cm ² 6. Discharge Pressure: Atmospheric mbar 7. Blank-off suction pressure : (with Cooling water temperature at condenser design point as specified in the Annexure) 8. Power required at motor terminals : a) Maximum KW b) At pump design point (1"Hg abs. Suction pr.) KW c) At condenser design point (as specified in Annexure) KW 9. Cooling water required: cu.m/ hr 10. Cooling water pressure drop: (across heat exchanger terminals) mwc 11. Sealing water flow: cu.m/ hr 12. Sealing water pressure drop: (across heat exchanger terminals) mwc 13. Pump down time: minutes (with two pumps, c.w. temp. at Condenser design point & volume to be evacuated as specified in the Annexure) 14. Instrument air requirement with pressure: 15.0 Vacuum Pump: 15.1 No. of stages: 15.2 Pump rated speed: rpm 15.3 Rotor vane tip speed: m / sec 15.4 Rotor dia 15.5 Shaft dia : 15.6 Moment of inertia a) Pump kg-sq.m b) Pump Motor set: kg-sq.m 15.7 Pump starting torque: kg-m 15.8 Pump design torque: 15.9 Pump compression ratio.		
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COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		16.0 Seal water heat exchanger 16.1 Type Shell and tube 16.2 Range of CW inlet temp. : As indicated in Annexure 16.3 Design ITD deg C 16.4 Heat transfer area : sq.m At Pump design point (1" Hg-abs. suction pressure & design ITD) 16.5 (A) Total heat load kcal/hr 16.6 (A) Heat exchanger terminal-temperatures; a. At cooling water inlet (considered) deg C b. At cooling water outlet deg C c. At seal water inlet deg C d. At seal water outlet deg C 16.7 (A) Heat transfer rate: kcal/hr-sq.m-deg C At Condenser design point, as specified in the Annexure: 16.5 (B) Total heat load kcal/hr 16.6 (B) Heat exchanger terminal- temperatures: a. At cooling water inlet (considered) deg C b. At cooling water outlet deg C c. At seal water inlet deg C d. At seal water outlet deg C 16.7 (B) Heat transfer rate: kcal/hr.sq.m deg.C 16.8 Design pressure a. Shell side; kg/sq.cm(g) b. Tube side : kg/sq.cm(g) 16.9 Test pressure a. Shell side: kg/sq.cm(g) b. Tube side: kg/sq.cm(g) 17.0 Seal water recalculation pump 17.1 Design capacity: cub m/hr 17.2 Total Developed Head at design capacity: mwc 17.3 Shut off head: mwc 17.4 Power absorbed (at motor terminals) : KW 17.5 Rated Speed rpm 17.6 Motor rating KW IV CONSTRUCTION FEATURES and MATERIAL OF CONSTRUCTION: 1. Vacuum Pump a. Manufacturer b. Model No. c. No. of stages d. Rotation (when viewed from drive end) e. Bearings (1 st stage), No., type and size (each end) f. Bearings (2 nd stage, if applicable), No., type and size(each end) g. Suction connection size mm NB					
निर्माता एवं हस्ताक्षर SIGN & DATE		स्वत्वधिकार एवं गोपनीय यह दस्तावेज मे की गई जानकारी भारत भारती लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रसारण के बिना भारत भारती लिमिटेड की लिखित अनुमति के बिना न किया जाये।		REV. NO: .03			
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COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company.		ह. Discharge connection size mm NB इ. Casing material ज. Impeller material क. Wearing sleeve material ल. Shaft material 2. Heat exchanger (shell & Tube/Plate Type) अ. Manufacturer ब. Type of tubes Straight क. No. of passes on tube side द. Tube size (O/D x thickness x Length) mm इ. Tube material फ. Tube plate material ग. Shell material ह. Water box (bonnet /Channel) material इ. Heat transfer area required & provided Sq.m 3. Seal water recirculation pump अ. Manufacturer ब. Type Centrifugal क. Model द. Casing material इ. Impeller material फ. Shaft material ग. Material of shaft sleeves (if provided) ह. Mechanical seal material 4. Air Ejector (if provided) अ. Manufacturer ब. Suction size mm NB क. Discharge size mm NB द. Nozzle material इ. Diffuser material फ. Compression ratio 5. Coupling अ. Manufacturer ब. Type क. Model 6. Space heaters अ. Manufacturer ब. Model No. क. Wattage rating KW द. Nos. each इ. Rated Voltage and No. of phases. 7. Air Water Separator अ. Manufacturer ब. Size, dia. x length and volume क. Material					
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मासिक सूची संख्या में अतिरिक्त करना है	SUPERSEDES INVENTORY	Page 23 of 27			
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		9. Check Valve (at separator outlet) a. Manufacturer b. Model No. c. Size d. Seat material mm NB			
		10. Seal water make up solenoid valve a. Manufacturer b. Model No. c. Size d. Seat material e. Voltage f. wattage rating mm NB			
		11. Float operated seal water over flow valve (if provided) a. Manufacturer b. Model No. c. Size d. Seat material mm NB			
		12. Duplex filter (if specified in the Annexure) a. Manufacturer b. Model No. c. Mesh size d. Valve seat material e. Baskets & inserts material f. Pressure drop (at design CW flow) mwc			
		13. Inlet butter fly valve a. Manufacturer b. Model No. c. Size d. Seat material e. Operating Pressure f. Valve body material			
		14. Gear box (if applicable). a. Manufacturer b. Model No. c. Nominal ration d. Special ration e. Diameter of input shaft f. Diameter of output shaft			
निर्देश एवं हस्ताक्षर SIGN & DATE 23/4/16	REV. NO: .03	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016	18/4/16

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				पृष्ठ 24 का 27 Page 24 of 27	
सुपरसेड्स INVENTORY	सामग्री सूची में मंगल को अतिरिक्त करना है	15. Gear oil (if applicable). a. Manufacturer b. Type c. Quantity: i) Quantity during Commissioning ii) Quantity during Continuous running			
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स्वयंसेवक एवं गोपनीय इस प्रवेश में दी गई सूचना भारत हीवी एलेक्ट्रिकल लिमिटेड की संपत्ति है। इसका उपयोग एवं प्रसारण के बिना या बिना की अनुमति के किए में हस्तक्षेप हो न किया जाये।		VI. TESTS and INSPECTION : Will all the tests, inspection and test certificates, detailed in the specification be conducted /furnished. If no, please furnish details of non-compliance. Yes / No			
		VII. WEIGHTS and SPACE REQUIREMENTS : 1. Weights a. Complete package (dry) kg b. Complete package (operating) kg c. Pump alone kg d. Motor alone kg e. Heaviest component to be lifted in operation & maintenance. kg 2. Floor space required mm 3. Maintenance space required.			
		VIII. CHARACTERISTICS CURVES: (as per clause no.18.6)			
निष्कर्ष एवं हस्ताक्षर SIGN & DATE 18/4/16					
सामग्री सूची संख्या INVENTORY NO. R5728	REV. NO: .03	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016	18/4/16

निष्पन्न एवं हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
SUPERSEDES INVENTORY						पृष्ठ 25 का 27 Page 25 of 27	
सामग्री सूची में परिवर्तन करना है						APPENDIX-E	
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company		MOTOR DATA SHEET & GA dwg (to be filled-in & submitted with the bid)					
स्वत्वधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत भारती एलेक्ट्रिकल्स लिमिटेड की सम्पत्ति है इसका प्रयोग एवं प्रसारण केवल के बिना की जा सकती है अन्यथा कानून से दंडित होगा।		I. GENERAL					
		1. Manufacturer 1 _____ 2. Equipment driven by motor 2 _____ 3. Motor type 3 _____ 4. KW rating 4 _____ 5. Country of origin 5 _____ 6. Project 6 _____ 7. Quantity per unit 7 _____					
		II. DESIGN AND PERFORMANCE					
		1. Frame size 1 _____ 2. Type of duty 2 _____ 3. Type of enclosure and method of cooling 3 _____ 4. Degree of protection 4 _____ 5. Applicable standard to which motor generally conforms 5 _____ 6. Type of mounting 6 _____ 7. Direction of rotation as viewed from non-driving end 7 _____ 8. Method of starting 8 _____ 9. Standard continuous rating at 40.0 deg.C ambient temp. as per Indian Standard. (KW) 9 _____ 10. Derated rating for specified ambient temp. of 50.0deg.C(KW) 10 _____ 11. Maximum continuous load demand of driver equipment(KW) 11 _____ 12. Rated voltage (Volts) 12 _____ 13. Permissible variation of * 13 _____ a. Voltage a. _____ b. Frequency b. _____ c. Combined voltage and frequency c. _____ *(Not less than asked for in the specification) 14. Minimum permissible starting voltage (volts) * 14 _____ *(Not more than asked for in the specification) 15. Rated speed at rated voltage and frequency (rpm) 15 _____ 16. Full load current (amps) 16 _____ 17. No load current (amps) 17 _____ 18. Power factor at 18 _____ a. 100% load a. _____ b. 75% load b. _____ c. 50% load c. _____ d. No load d. _____					
निष्पन्न एवं हस्ताक्षर SIGN & DATE 		REV. NO.: 03		निर्माणकर्ता WORKED BY SHAVEZ KHAN		18/4/2016	
सामग्री सूची संख्या INVENTORY NO. 25798				जांचकर्ता CHECKED BY SHIVA KANT		18/4/2016	

निम्न पर हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
सामग्री सूची संख्या INVENTORY NO.		SUPERSEDES INVENTORY		पृष्ठ 26 का 27 Page 26 of 27			
सामग्री सूची संख्या को अधिनिर्देश देना है		19. Efficiency at rated voltage and frequency at (%) a. 100% load b. 75 % load c. 50% load 20. Starting current at (amps.) a. 100% voltage b. 80 % voltage c. 100 % voltagetime 21. Starting time with minimum permissible voltage of 80% of rated voltage. (secs.) for a. With out driven equipment coupled b. With driven equipment coupled 22. Starting time with 100 % of rated voltage. (secs.) for a. With out driven equipment coupled b. With driven equipment coupled 23. Safe stall time with 110% of rated voltage (secs.) for a. From hot condition b. From cold condition 24. Safe stall time with 100 % of rated voltage (secs.) for a. From hot condition b. From cold condition 25. Torque (kg. Meter) at a. Starting (at minimum permissible voltage) b. Pull up c. Pull out d. Rated load e. Min accelerating torque available 26. Stator winding resistance per phase (ohms) 27. Flywheel moment of inertia (GD square) of motor (Kg—sq.m) 28. Size of earthing conductor 29. No. of permissible successive starts in hot condition. 30. Locked rotor KVA input 31. Locked rotor KVA /KW 32. Vibration 33. Noise – (one meter distance from the motor) 34. Speed switch 35. Insulation of bearing 36. Noise reducer 37. Grounding pads : a. No and size on motor body b. No on terminal box 38. Vibration pads 39. No of poles 40. Permissible number of equally spread starts per hour a. No. of quick starts per hour when motor is hot. b. No. of quick starts per hour when motor is cold.					
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स्वत्वधिकार एवं गोपनीय इस दस्तावेज में दी गई जानकारी भारत भारी उपकरण लिमिटेड की संपत्ति है। इसका प्रयोग एवं प्रसारण इस से किसी भी प्रकार प्रयोग को बिना हमारी के बिना न किया जाना चाहिए।							
निम्न पर हस्ताक्षर SIGN & DATE		REV. NO: .03					
सामग्री सूची संख्या INVENTORY NO.		निर्माणकर्ता WORKED BY		SHAVEZ KHAN		18/4/2016	
सामग्री सूची संख्या INVENTORY NO.		जांचकर्ता CHECKED BY		SHIVA KANT		18/4/16	

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 27	का 27
SUPERSEDES INVENTORY		41. Motor paint shade. 41----- 42. Motor earthing point. 42----- 43. a) Heating time constant. 43----- b) Cooling time constant.			
सामग्री सूची संख्या को अधिलेखित करना है		III. CONSTRUCTIONAL FEATURES			
COPYRIGHT AND CONFIDENTIAL The information on this documents is the property of Bharat Heavy Electrical Limited. It must not be used directly or indirectly in any way detrimental to the interest of the company		1. Stator winding insulation 1 a. Tropicalised insulation a.----- b. Class & Type b.----- c. Temperature rise over 50.0 deg.C ambient temp. (deg.C) c.----- d. Stator winding connections d.----- e. Number of terminals brought out e.-----			
		2. Type of terminal box for 2 a. Stator leads a.----- b. Space heater b.-----			
स्वत्साधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग और कि कंपनी के हित में हानिकारक हो न किया जाए।		3. For main terminal box (suggestive) 3 a. Location a.----- b. Entry of cables b.----- c. Recommended cable size c.----- d. Fault level KA /sec. d.----- e. Lug for terminal inside terminal box f. Cable glands			
		4. For Bearings (Drive end/Non-Drive end) 4. a. Type a.----- b. Manufacturer b.----- c. Size c.----- d. Recommended lubricant d.----- e. Guaranteed Life			
इस दस्तावेज में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग और कि कंपनी के हित में हानिकारक हो न किया जाए।		5. Space heaters 5 a. Numbers a.----- b. Location b.----- c. Power requirement (KW) c.-----			
		6. Weight (Kg.) of 6 a. Motor stator a.----- b. Motor rotor b.----- c. Total motor c.----- d. Overall dimension of motor d.-----			
		IV. GA DRAWINGS OF MOTOR & TERMINAL BOX :			
		V. CHARACTERISTIC CURVES (AT 80 %, 100% & 110 % OF RATED VOLTAGE)			
				Curve No.	
		1. Current v/s speed		1. -----	
		2. Torque v/s speed		2. -----	
		3. Thermal with stand curve		3. -----	
		4. Current v/s time		4. -----	
सामग्री सूची संख्या INVENTORY NO.	REV. NO: 03	निर्माणकर्ता WORKED BY		SHAVEZ KHAN	18/4/2016
		जांचकर्ता CHECKED BY		SHIVA KANT	18/4/16

62002L11913

ON DIMENSIONS/समस्त आयाम

प्राथमिक / FIRST ANGLE PROJECTION

सभी विमाएँ मिलीमीटर में हैं /

DIMENSIONS ARE IN mm.

पृष्ठ क्रमांक 08 (मि)/TOTAL 38 (8)

CONDENSER AIR EVACUATION PACKAGE UNIT (VACUUM PUMP PACKAGE)

I. DESIGN DATA :

(No. of Condensers per TG set: Two)

Note:

1. Vacuum Pump of higher capacity (low ITD) to be selected (for supply) between the followings design criteria of Condenser-1 & Condenser-2.
2. Identical Vacuum pump package (of higher capacity) to be supplied for Condenser-1 & Condenser-2.
3. Vacuum pump packages supplied for Condenser-1 & Condenser-2 shall be interchangeable with each other.

A. CONDENSER-1:

- 1) No. of Units required per Condenser : Two (2)
- 2) No. of Units normally working (Holding) : One (1)
- 3) No. of Units working during Start-up (Hogging) : Two (2)
- 4) Design ITD : 7.56 Deg C
- 5) Condenser back pressure : 0.077 ATA (57.0 mmHg-o)
- 6) Condenser cooling water temp : 33 Deg C
- 7) Cooling water Quality : Sea Water

B. CONDENSER-2:

- 1) No. of Units required per Condenser : Two (2)
- 2) No. of Units normally working (Holding) : One (1)
- 3) No. of Units working during Start-up (Hogging) : Two (2)
- 4) Design ITD : 12.35 Deg C
- 5) Condenser back pressure : 0.099 ATA (73.2 mmHg-o)
- 6) Condenser cooling water temp : 33 Deg C
- 7) Cooling water Quality : Sea Water

C. All flanges to be as per ANSI, B16.5

Note: C.W. for Vac.pump Heat Exchanger is same as that of Condenser.

II. CAPACITY OF PUMP (as per HEI) :

- 1) Design capacity (Holding) : 20 SCFM at 1" Hg abs
 - 2) Air+Steam mixture temperature: at design ITD (7.56 & 12.35 DEG C)
 - 3) Volume to be evacuated (approx.) : Sub-cooled by 4.17 °C
 - 4) Time for initial evacuation : 2000 m3 (Per condenser)
 - 5) Hogging capacity, each pump : As per HEI (condenser)
- 800SCFM (minimum)
-At 10inch Hg(a)

संवाचित एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रसार या अन्यथा रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकार हो।

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मान्य सूची संख्या
INVENTORY NO.

हस्ताक्षर और दिनांक/SIGN & DATE

संदर्भित अभिकल्प संख्या
REFERENCE DRG. NO.उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
TYPE OF PRODUCT OR NAME OF
CUSTOMER/PROJECT

VACUUM PUMP PACKAGE-30SCFM

(CODE NO. W90716150271)

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, गान्धीपुर, हरिद्वार
BHARAT HEAVY ELECTRICALS LIMITED,
GANIPUR, HARIDWAR

भाग
DEPT.

अनुपात/SCALE

भारत, गान्धीपुर
WEIGHT (KG)अभिकल्प संख्या/DRIVING NO.
31611770039REV
00

शीर्षक/TITLE

ANNEX. TO HE57016

कार्ड कोड
CODEअभिकल्प संख्या/DRIVING NO.
31611770039REV
00

A3 साईज/A3 SIZE

6C00L1191C ON SWMWD/19th March 2011

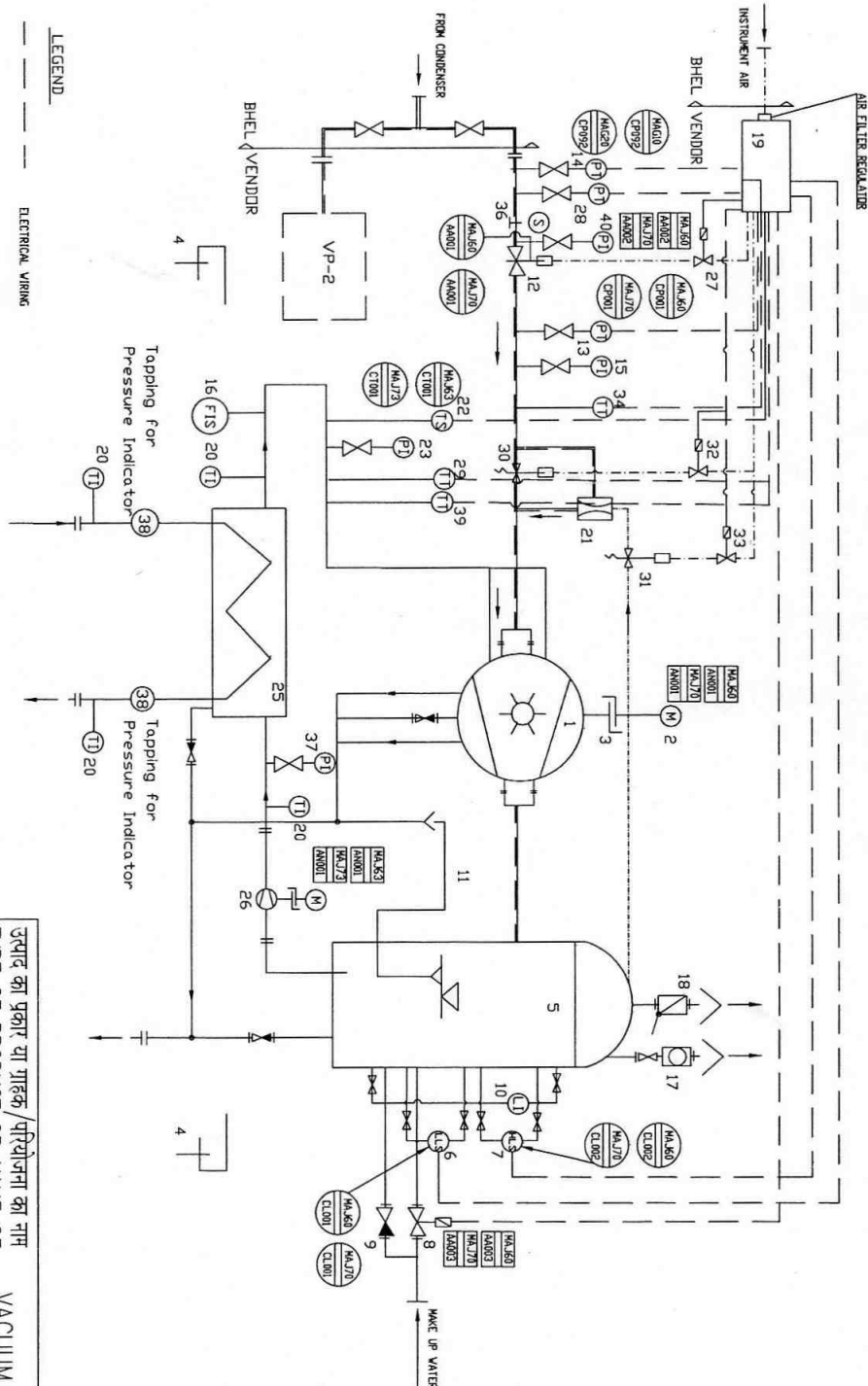
प्रथम कोण / FIRST ANGLE PROJECTION

ममी विमान मिलिमीटर में है / All

DIMENSIONS ARE IN mm.

प्रथम कोण 38 (टी) / FORM 38 (B)

CONDENSER AIR EVACUATION SYSTEM



ITEM DESCRIPTION

1. VACUUM PUMP, 2-STAGE (OR 1-STAGE)
2. MOTOR
3. COUPLING
4. FOUNDATION BOLT+NU+1+WASHER
5. SEPARATOR
6. LOW LEVEL SWITCH WITH ISOLATION VALVE
7. HIGH LEVEL SWITCH WITH ISOLATION VALVE
8. MAKEUP WATER INLET VALVE
9. MAKEUP WATER BYPASS VALVE
10. LEVEL INDICATOR WITH ISOLATION VALVE
11. OVERFLOW SYPHON LOOP
12. SYSTEM INLET VALVE WITH OPEN/CLOSE LIMIT SWITCH
13. PRESSURE TRANSMITTER FOR INLET VALVE OPEN.
14. PR. TRANSMITTER FOR STANDBY PUMP OPEN.
15. PRESSURE INDICATOR WITH VALVE
16. SEAL WATER FLOW SWITCH CUM INDICATOR
17. AIR FLOW METER (ROTAMETER)
18. AIR OUTLET CHECK VALVE WITH HANDLE
19. JUNCTION BOX (REFER DRG. NO.)
20. TEMPERATURE INDICATOR
21. ELECTOR (IF APPLICABLE)
22. TEMPERATURE SWITCH
23. PRESSURE INDICATOR WITH VALVE
24. -----
25. HEAT EXCHANGER
26. SEAL WATER PUMP WITH MOTOR
27. SOLENOID VALVE (24 V DC)
28. PR. TRANSMITTER FOR ELECTOR (IF APPLICABLE)
29. TEMP. TRANSMITTER FOR SEAL WATER FOR ELECTOR (IF APPLICABLE)
30. BT-PASS VALVE FOR ELECTOR (IF APPLICABLE)
31. MOTIVE AIR VALVE FOR ELECTOR (IF APPLICABLE)
32. SOLENOID VALVE (24V DC) FOR ELECTOR (IF APPLICABLE)
33. SOLENOID VALVE (24V DC) FOR ELECTOR (IF APPLICABLE)
34. TEMPERATURE TRANSMITTER IN SUCTION LINE
35. -----
36. TEMPORARY INLET SCREEN
37. PRESSURE INDICATOR WITH VALVE
38. TAPPING FOR PRESSURE INDICATOR
39. TEMP. TRANSMITTER FOR SEAL WATER
40. PRESSURE INDICATOR WITH VALVE

स्वीकार्य एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रकाश या अप्रकाश रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कम्पनी के हित में हानिकार हो।

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संकेत और दिनांक/SIGN & DATE
हस्ताक्षर और दिनांक/SIGN & DATE
संदर्भित अभिलेख संख्या
REFERENCE DRG. NO.

संकेत और दिनांक/SIGN & DATE
हस्ताक्षर और दिनांक/SIGN & DATE
संदर्भित अभिलेख संख्या
REFERENCE DRG. NO.

LEGEND

ELECTRICAL WIRING

AIR PIPING

AIR & STEAM MIXTURE PIPING

WATER PIPING

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
TYPE OF PRODUCT OR NAME OF
CUSTOMER/PROJECT

VACUUM PUMP PACKAGE-30 SCFM

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, रायपुर, छत्तीसगढ़
BHARAT HEAVY ELECTRICALS LIMITED,
RAIPUR, CHHATTISGARH

नाम/NAME
SHIVA
Sd
25/06/16
Sd
27/06/16
Sd
27/06/16

डिप्टी. एच.ई.
कोड/कोड
अनुपात/SCALE
वजन (KG)
असेंबली अभिलेख का संदर्भ
REFER TO ASSLY. DRG.

नाम/NAME
SHIVA
Sd
25/06/16
Sd
27/06/16
Sd
27/06/16

शीट/शीट
PAID - CONDENSER AIR
EVACUATION SYSTEM

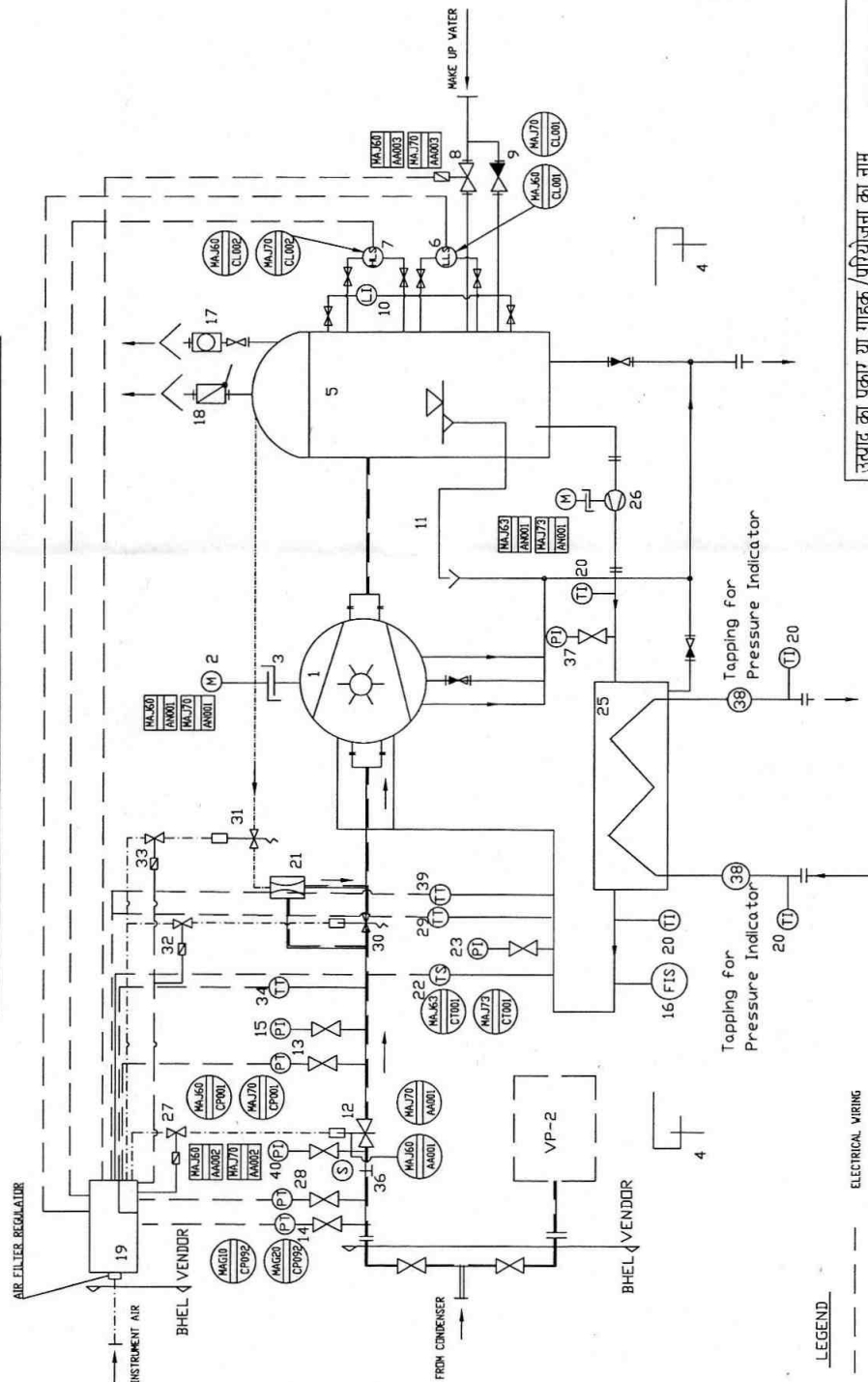
शीट/शीट
PAID - CONDENSER AIR
EVACUATION SYSTEM

शीट/शीट
PAID - CONDENSER AIR
EVACUATION SYSTEM

A3 गहराई/A3 SIZE

अभिप्रेत संख्या/DRAWING NO.

CONDENSER AIR EVACUATION SYSTEM



ITEM DESCRIPTION

1. VACUUM PUMP, 2-STAGE (OR 1-STAGE)
2. MOTOR
3. COUPLING
4. FOUNDATION BOLT+NUT+WASHER
5. SEPARATOR
6. LOW LEVEL SWITCH WITH ISOLATION VALVE
7. HIGH LEVEL SWITCH WITH ISOLATION VALVE
8. MAKEUP WATER INLET VALVE
9. MAKEUP WATER BYPASS VALVE
10. LEVEL INDICATOR WITH ISOLATION VALVE
11. OVERFLOW SYPHON LOOP
12. SYSTEM INLET VALVE WITH OPEN/CLOSE LIMIT SWITCH
13. PRESSURE TRANSMITTER FOR INLET PUMP OPN.
14. PR. TRANSMITTER FOR STANDBY PUMP OPN.
15. PRESSURE INDICATOR WITH VALVE
16. SEAL WATER FLOW SWITCH CUM INDICATOR
17. AIR FLOW METER (ROTAMETER)
18. AIR OUTLET CHECK VALVE WITH HANDLE
19. JUNCTION BOX (REFER DRG. NO.)
20. TEMPERATURE INDICATOR
21. ELECTOR (IF APPLICABLE)
22. TEMPERATURE SWITCH
23. PRESSURE INDICATOR WITH VALVE
24. -----
25. HEAT EXCHANGER
26. SEAL WATER PUMP WITH MOTOR
27. SOLENOID VALVE (24 V DC)
28. PR. TRANSMITTER FOR ELECTOR (IF APPLICABLE)
29. TEMP. TRANSMITTER FOR SEAL WATER FOR ELECTOR (IF APPLICABLE)
30. BY-PASS VALVE FOR ELECTOR (IF APPLICABLE)
31. MOTIVE AIR VALVE FOR ELECTOR (IF APPLICABLE)
32. SOLENOID VALVE (24V DC) FOR ELECTOR (IF APPLICABLE)
33. SOLENOID VALVE (24V DC) FOR ELECTOR (IF APPLICABLE)
34. TEMPERATURE TRANSMITTER IN SUCTION LINE
35. -----
36. TEMPORARY INLET SCREEN
37. PRESSURE INDICATOR WITH VALVE
38. TAPPING FOR PRESSURE INDICATOR
39. TEMP. TRANSMITTER FOR SEAL WATER
40. PRESSURE INDICATOR WITH VALVE

उत्पाद का प्रकार या ग्राहक/परियोजना का नाम
TYPE OF PRODUCT OR NAME OF
CUSTOMER/PROJECT

VACUUM PUMP PACKAGE-30 SCFM

	भारत हेवी इलेक्ट्रिकल्स लिमिटेड, राणीपुर, हरिद्वार BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARDWAR	निर्माणकर्ता SHIVA SHIVA S.KANT	दिनांक/DATE 20/05/16 21/05/16 21/05/16	संख्या/No. of. Var. 00 00 2
भा. कि. ग्रा. WEIGHT (KG)	अनुपात/SCALE -	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
रीपर्ट/REPORT HXE BERTI CODE		आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
शीट/संख्या SHEET/NO.	पृष्ठ संख्या/Sheets No.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
आदेश/ORDER ORDER NO.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
आदेश/ORDER ORDER NO.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
आदेश/ORDER ORDER NO.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
आदेश/ORDER ORDER NO.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS
आदेश/ORDER ORDER NO.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	आदेश की प्रतिकृति का संदर्भ REFER TO ASSLY. DRG.	नग्न भागों की संख्या ITEM NO. ITEMS	नग्न भागों की संख्या ITEM NO. ITEMS

A3 साइज/A3 SIZE

BHEL				INSPECTION AND TEST PLAN				PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL			
MANUFACTURERS NAME & ADDRESS				ITEM: CONDENSOR AIR EVACUATION PUMP PACKAGE SUB-SYSTEM:				QP NO. QA/BI/QP/006 REV.: 05 DATE: 17.10.2015 PAGE: Page 1 of 4			
St. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE /ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY		REMARKS	
1.	2.	3.	4.	5.	6.	7.	8.	D	M	9.	10.

1.	MAIN PARTS FOR VACUUM PUMP • CASING • IMPELLER • SHAFT	CHEMICAL & MECHANICAL PROPERTIES	MAJOR	CHEMICAL & MECHANICAL	PER HEAT	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	TC	✓	P	V	NO WELD REPAIR PERMITTED
2.	PIPE / FITTINGS (For System Pipe Work)	CHEMICAL & MECHANICAL PROPERTIES	MAJOR	CHEMICAL & MECHANICAL	100%	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	COC	✓	P	V	
3.	PUMP BEARINGS	DIMENSIONS	MAJOR	VISUAL	100%	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	TC	✓	P	V	
4.	IMPELLER	DYNAMIC BALANCING	MAJOR	BALANCING AT RATED SPEED	100%	VENDOR'S STD	VENDOR'S STD	TC	✓	P	V	
5.	SHAFT	UT TEST	MAJOR	CHECK	100%	ASTM A 388	AA0850118 CAT II	TC	✓	P	V	
4a.	HEAT EXCHANGER (SHELL)	VISUAL & DIMENSIONAL	MAJOR	MEASUREMENT / VISUAL	100%	VENDOR'S DRAWING	VENDOR'S DRAWING	-	-	P	-	

MANUFACTURER/SUB CONTRACTOR	CONTRACTOR	LEGEND: I RECORDS IDENTIFIED WITH 'I' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. II M. MANUFACTURER / SUBCONTRACTOR N. CUSTOMER C. CONTRACTOR / NOM. INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER	FOR CUSTOMER	DOC NO.
			REVIEWED BY	APPROVED BY

BHEL			MANUFACTURERS NAME & ADDRESS				INSPECTION AND TEST PLAN				PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL								
Sr. No			COMPONENT / OPERATION		CHARACTERISTICS		CLASS		TYPE OF CHECK		QUANTUM OF CHECK		REFERENCE /ACCEPTANCE NORMS		FORMAT OF RECORD		AGENCY		REMARKS
																	M	C	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.										

6.	INSTRUMENTS TEMP / PRESSURE GAUGES	CALIBRATION AND ACCURACY	MAJOR	CALIBRATION	100%	AS PER VENDOR STD / APPROVED DRAWING / DATASHEET	COC	✓	P	V	clause no 4.1 (a) & (b) are to be witnessed
7.											
7.	PACKAGE ASSEMBLY	HYDROSTATIC TEST PERFORMANCE TEST	MAJOR	PRESSURE TEST	100%	VENDOR'S STD VENDOR'S DATASHEET	TC	✓	P	W	
		PLC		CAPACITY & POWER VS SUCTION PRESSURE PROGRAMME DEMONSTRATION	100%	AS PER APPD WRITE UP VENDOR'S	TC	✓	P	W	IF APPLICABLE
		NOISE		NOISE LEVEL	100%	AS PER APPD WRITE UP APPROVED DATASHEET		✓	P	W	

MANUFACTURER/SUB CONTRACTOR		CONTRACTOR		LEGEND: i. RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. ii. M. MANUFACTURER / SUBCONTRACTOR INSPECTION AGENCY INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		FOR CUSTOMER		DOC NO.	
						REVIEWED BY		APPROVED BY	

BHEL				INSPECTION AND TEST PLAN				PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL			
MANUFACTURERS NAME & ADDRESS				ITEM: CONDENSOR AIR EVACUATION PUMP PACKAGE SUB-SYSTEM:				QP NO. QA/BI/QP/006 REV.: 05 DATE: 17.10.2015 PAGE: Page 4 of 4			
Sr. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE /ACCEPTANCE NORMS	FORMAT OF RECORD	AGENCY M C N		REMARKS	
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.		

	MEASUREMENT	CHECK	STD	TC	✓	P	W	
	VIBRATION	-VIBRATION CHECK	VENDOR'S STD	APPROVED DATASHEET	TC			
	VISUAL / DIMENSIONAL	VISUAL / MEASUREMENT	VENDOR'S STD	APPROVED DATASHEET	TC	✓	P	W
8.	COMPLETE PACKAGE FOR CONFIRMATION OF BHEL APPD. PID	MAJOR VISUAL	100%	AS PER BHEL APPD. PID	TC	✓	P	W
9.	PAINTING & PACKING	MAJOR CHECK	100%	VENDOR'S STD	CHECK	-	P	-

NOTE: - TYPE TESTS - HUMID AIR TEST AND CAVITATION TO BE DONE ONLY ONCE PER PUMP TYPE

Signature
10/10/15

MANUFACTURER/SUB CONTRACTOR		CONTRACTOR		LEGEND: I RECORDS IDENTIFIED WITH 'I' TICK. SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. II M: MANUFACTURER / SUBCONTRACTOR C: CONTRACTOR / NOM. INSPECTION AGENCY N: CUSTOMER INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER	
		FOR CUSTOMER		DOC NO.	
		REVIEWED BY		APPROVED BY	

7

BHEL		MANUFACTURERS NAME & ADDRESS			INSPECTION AND TEST PLAN				PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL			
					ITEM: CONDENSOR AIR EVACUATION PUMP PACKAGE SUB-SYSTEM:				QP NO. QA/BI/QP/006 REV.: 05 DATE: 17.10.2015 PAGE: Page 2 of 4			
Sr. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	REMARKS
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.			

5.	MOTOR	CHEMICAL & MECHANICAL PROPERTIES OF TUBES / TUBE SHEET / SHELL EDDY CURRENT TEST ON TUBES SOUNDNESS OF WELD	MAJOR	CHEMICAL & MECHANICAL ECT	PER HEAT	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	As applicable
		HYDRAUSTATIC TEST	MAJOR	PRESSURE TEST SHELL & TUBE SIDES	100%	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	As applicable
		IDENTITY	MAJOR	VISUAL & MEASUREMENT TEST	100%	IEC 60034 / IEC 34.1 / BES 4999	IEC 60034 / IEC 34.1 / BES 4999	TC	-	P	-	Type Test Of Same Vendor, Model, Rating Shall be Reviewed
		ROUTINE TEST		TEST	100%				✓	P	V	
		TYPE REPORT		TEST	100%				✓	P	V	
		Energy Efficiency		Energy efficiency class -eff 1	100%	IEC: 60034-30/1S 12615	IEC: 60034-30/1S 12615	COC	✓	P	W *	W*: along with routine test HE57016 Appendix C

MANUFACTURER/SUB CONTRACTOR CONTRACTOR 10/06/16		LEGEND: I RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. II M: MANUFACTURER / SUBCONTRACTOR INSPECTION AGENCY INDICATE 'P' PERFORM 'W' WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER		FOR CUSTOMER REVIEWED BY APPROVED BY		DOC NO.	
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PRICE BID FORMAT /PRICE BID SCHEDULE FOR FOREIGN BIDDERS

ENQUIRY NO. B/4222/2016/2155V/2

PACKAGE: CONDENSER AIR EVACUATION PACKAGE

PROJECT: 1X800 MW KRISHNAPATNAM

DATE OF ISSUE OF ENQUIRY: 12/12/2017

ENQUIRY DUE DATE: 03/01/2018

Item No.	Material code & description	Qty.	Quoted Prices on FOB *Basis **per NO/SET	Total Prices of FOB (Unit Prices X Quantity **
1.	Material Code W90716150271 DRG: 31611770039 REV:00 CONDENSER AIR EVACUATION PACKAGE (VACUUM PUMP) FOR SEA WATER-30SCFM SPEC: HE57016 REV: 03	4 Nos.		
2.	Material Code W97716155580 IMPELLER & SHAFT ASSEMBLY (COMPLETE), SUITABLE FOR 30 SCFM VACUUM PUMP SPEC: HE57016 REV: 03	1 No.		
3.	Material Code W97716155059 BEARING FOR VACUUM PUMP (30 SCFM)(1SET=2 NOS) SPEC: HE57016 REV: 03	1 ST		
4.	Material Code W97716155253 COUPLING COMPLETE (FOR VACUUM PUMP OF 30 SCFM) SPEC: HE57016 REV: 03	1 NO		
5.	Material Code W96716155066 MECHANICAL SEAL FOR VACUUM PUMP PACKAGE (30SCFM) (1 SET= 2 NOS) SPEC: HE57016 REV: 03	1 ST		
6.	Material Code W97716155741 PRESSURE GAUGE (SERVICE WATER) DRG: TO SUIT ORIGINAL SUPPLY	2 Nos.		
7.	Material Code W97716155466 TEMPERATURE GAUGE 0- 100 DEG C, FOR VACUUM PUMP HEAT EXCHANGER SIZE: 0 TO 100 DEG C	2 Nos.		
8.	Material Code W97716155822 PRESSURE TRANSMITTER FOR VACUUM PUMP SYSTEM:0-1 BAR ABS SPEC: HE57016 REV: 03	2 Nos.		
9.	Material Code W96716155244 TEMPERATURE TRANSMITTER FOR VACUUM PUMP SPEC: HE57016 REV: 03 DRG: 31611770051	2 Nos.		
10.	Material Code W97716155474 TEMPERATURE SWITCH FOR VACUUM PUMP	2 Nos.		
11.	Material Code W97716155547 LEVEL GAUGE FOR VACUUM PUMP SEPARATOR TANK SPEC: HE57016 REV: 03	2 Nos.		
12.	Material Code W97716155512 LEVEL SWITCH FOR VACUUM PUMP	2 Nos.		

PRICE BID FORMAT /PRICE BID SCHEDULE FOR FOREIGN BIDDERS
ENQUIRY NO. B/4222/2016/2155V/2
PACKAGE: CONDENSER AIR EVACUATION PACKAGE
PROJECT: 1X800 MW KRISHNAPATNAM
DATE OF ISSUE OF ENQUIRY: 12/12/2017
ENQUIRY DUE DATE: 03/01/2018

13.	Total Sea Freight Charges for total quantity of sl. no. 1 to 12 for calculating CFR charges	
14.	Supervision of commissioning: Please quote supervision charges as follows, however evaluation & payment of supervision charges would be done as detailed in "INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY"	
	a. Lumpsum per man day charges at site, including every expense at our site i.e. boarding & lodging, local travel etc.	
	b. Lumpsum per visit charges (to & fro) including travelling time & all expenses up to our project site.	
15.	Third Party Inspection Charges per Condenser Air Evacuation Package	
16.	Third Party Inspection Charges for Spare Items (in terms of %age of quoted prices of spare items)	
17.	Type test Charges for performing type test on one Condenser Air evacuation Package as below:	
	Cavitation Test Charges for One Package	
	Saturated Air Test Charges for one	

* At this place you are required to mention name of FOB Port.

** At this place you are required mention currency of your Quotation.

Note:

1. For evaluation, prices of supervision of commissioning would be considered for 4 working days at site per condenser air evacuation package and 1 visit for one project (i.e. total 16 days and 1 visit for Krishnapatnam project).
2. Type test charges would be considered only, if the new type test is required to be performed. This will be decided after technical scrutiny of your offer and will be informed to you before opening of price bid.
3. Price evaluation of offers would be done on the basis of prices of item no 1 to 16 & 17 (If new types test required to be performed on offered model).

Signature With seal of company

Price bid format /Price bid schedule For Indian Bidders

ENQUIRY NO. B/4222/2016/2155V/2

PACKAGE: Condenser Air evacuation Package

PROJECT: 1X800 MW KRISHNAPATNAM

DATE OF ISSUE OF ENQUIRY: 12/12/2017

ENQUIRY DUE DATE: 03/01/2018

Item No.	Material code & description	Qty.	Quoted Prices on Ex-Works Basis INR per NO/SET	Total Prices on Ex-Works (Unit Prices X Quantity) INR
1.	Material Code W90716150271 DRG: 31611770039 REV:00 CONDENSER AIR EVACUATION PACKAGE (VACUUM PUMP) FOR SEA WATER-30SCFM SPEC: HE57016 REV: 03	4 Nos.		
2.	Material Code W97716155580 IMPELLER & SHAFT ASSEMBLY (COMPLETE), SUITABLE FOR 30 SCFM VACUUM PUMP SPEC: HE57016 REV: 03	1 No.		
3.	Material Code W97716155059 BEARING FOR VACUUM PUMP (30 SCFM)(1SET=2 NOS) SPEC: HE57016 REV: 03	1 ST		
4.	Material Code W97716155253 COUPLING COMPLETE (FOR VACUUM PUMP OF 30 SCFM) SPEC: HE57016 REV: 03	1 NO		
5.	Material Code W96716155066 MECHANICAL SEAL FOR VACUUM PUMP PACKAGE (30SCFM) (1 SET= 2 NOS) SPEC: HE57016 REV: 03	1 ST		
6.	Material Code W97716155741 PRESSURE GAUGE (SERVICE WATER) DRG: TO SUIT ORIGINAL SUPPLY	2 Nos.		
7.	Material Code W97716155466 TEMPERATURE GAUGE 0-100 DEG C, FOR VACUUM PUMP HEAT EXCHANGER SIZE: 0 TO 100 DEG C	2 Nos.		
8.	Material Code W97716155822 PRESSURE TRANSMITTER FOR VACUUM PUMP SYSTEM:0-1 BAR ABS SPEC: HE57016 REV: 03	2 Nos.		
9.	Material Code W96716155244 TEMPERATURE TRANSMITTER FOR VACUUM PUMP SPEC: HE57016 REV: 03 DRG: 31611770051	2 Nos.		
10.	Material Code W97716155474 TEMPERATURE SWITCH FOR VACUUM PUMP	2 Nos.		
11.	Material Code W97716155547 LEVEL GAUGE FOR VACUUM PUMP SEPARATOR TANK SPEC: HE57016 REV: 03	2 Nos.		
12.	Material Code W97716155512 LEVEL SWITCH FOR VACUUM PUMP	2 Nos.		
13.	Freight Charges from Works to Site for total quantity of sl. no. 1 to 12			

Price bid format /Price bid schedule For Indian Bidders

ENQUIRY NO. B/4222/2016/2155V/2

PACKAGE: Condenser Air evacuation Package

PROJECT: 1X800 MW KRISHNAPATNAM

DATE OF ISSUE OF ENQUIRY: 12/12/2017

ENQUIRY DUE DATE: 03/01/2018

14.	Supervision of commissioning: Please quote supervision charges as follows, however evaluation & payment of supervision charges would be done as detailed in "INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY"	
	a. Lumpsum per man day charges at site, including every expense at our site i.e. boarding & lodging, local travel etc.	
	b. Lumpsum per visit charges (to & fro) including travelling time & all expenses up to our project site.	
15.	Type test Charges for performing type test on one Condenser Air evacuation Package as below:	
	Cavitation Test Charges for One Package	
	Saturated Air Test Charges for one	

* At this place you are required to mention name of FOB Port.

** At this place you are required mention currency of your Quotation.

Note:

1. For evaluation, prices of supervision of commissioning would be considered for 4 working days at site per condenser air evacuation package and 1 visit for one project (i.e. total 16 days and 1 visit for Krishnapatnam project).
2. Type test charges would be considered only, if the new type test is required to be performed. This will be decided after technical scrutiny of your offer and will be informed to you before opening of price bid.
3. Price evaluation of offers would be done on the basis of prices of item no 1 to 14 & 15 (If new types test required to be performed on offered model).

Signature With seal of company

ANNEXURE-9

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(s) (whose quote is highest in online sealed bid) may not be allowed to participate in further RA



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)
For Foreign Bidders (Version June-2017, Rev: 01)

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2. ORIGIN OF QUOTATION.
3. SUBMISSION OF TENDER.
4. TENDER OPENING.
5. SPECIFICATION, DRAWINGS & STANDARD.
6. PRICE SCHEDULE.
7. REVERSE AUCTION.
8. DELIVERY TERMS.
9. PENALTY FOR LATE DELIVERY.
10. PAYMENT TERMS.
11. BANK GUARANTEE.
12. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.
13. QUALITY REQUIREMENT.
14. VALIDITY.
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19. FORCE MAJEURE CLAUSE.
20. NON-DISCLOSURE AGREEMENT.
21. SETTLEMENT OF DISPUTES / ARBITRATION.
22. INFORMATION TO THE BIDDERS.
23. NOTE.

1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser).

2. ORIGIN OF QUOTATION.

- a) The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer / agent can also submit the bid on

their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.

- b) An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

3. SUBMISSION OF TENDER.

- a) Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:-

Quotation Against Enquiry No. _____

Dated: _____

Due on: _____

To,
THE HEAD OF MATERIALS MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.

- b) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed; and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- c) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and superscribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received

Quotations / Bids not in accordance with General Instructions and Standard Terms & Conditions are likely to be ignored.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC) For Foreign Bidders (Version June-2017, Rev: 01)

in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.

- d) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is submitted with forwarding letter and duly signed and stamped as mentioned above in clause c.
- e) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site www.bhel.com.
- f) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion of such PMD vendor from BHEL's approved vendor list.
- g) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 5 Crore or more.
- h) In case of open tender, the unregistered bidder shall submit inter alia duly filled-in Supplier Registration Form (SRF) along with the bid. Bidders can download the SRF from www.bhel.com
- i) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.
- j) BHEL may also reduce the Tender Quantity for offering it to Micro & Small Enterprise (MSE) Indian Vendors as per applicable Government of India rules whose prices are within 15% of L1 prices as per directives of Government of India.

4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore bid/quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender specific letter, for price bid opening on that particular day. General authorization letter is not acceptable.

5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry. If these documents are not furnished, the offer is liable to be rejected.

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- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Bidders need to quote their prices on CFR any sea port in Mumbai or FCA basis to the named airport in Euro / USD / JPY / UK Pound / SF / Singapore Dollar or any other Internationally freely tradable currency only. The name of the currency should be clearly indicated in your bids.
- d) Offers received other than CFR basis may result in non-consideration of such bids.
- e) However if BHEL agrees to accept the FOB condition, to arrive at landed cost at our plant / site, the FOB prices shall be loaded for 3% (of FOB Value) towards marine insurance, port handling charges & inland freight or actual freight / port handling charges as per BHEL contract whichever is higher.

f) Basis of Evaluation for Bid / Quotation in foreign currency:

- I. Currency exchange rate (TT selling rates of SBI) for evaluation of the bid/quotation received in foreign currency will be as follows:
- II. Single part bid – Date of tender opening.
- III. Two / Three part bid – Date of part 1 opening.
- IV. Reverse auction – Date of part-1 opening.

NB: Financial evaluation of L1, L2 ----- status will be on the basis of Landed Cost to BHEL.

g) Evaluation of Indian Agents Commission:

- I. BHEL prefers to deal directly with foreign bidder, wherever required, for procurement of Goods. However if the Foreign Principal desires to avail services of an Indian Agent then the Principal should ensure compliance to applicable guidelines.
- II. The FOB / CIF price quoted will be deemed to be inclusive of Indian Agency commission. Agency commission if payable shall be converted to Indian Rupees at TT buying rates of exchange ruling on tender opening date which shall not be subjected to any further exchange rate variation, as disclosed by the bidder in his quoted FOB / CIF price will be paid in Indian Rupees on receipt & acceptance of Materials or it's installation at destination, as the case may be. The lower of the TT buying rate prevailing on the date of technical bid opening shall be considered for computation of Agency commission.
- III. In a tender either the Indian Agent on behalf of Principal / OEM or the Principal / OEM itself can bid, but both cannot bid simultaneously for same item / product in the same Tender. If both OEM and its authorized agent submit their bids

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separately in that case only the offer of OEM can be considered as an exception.

h) While submitting your bids please clearly indicate:

- I. Expected weight of goods (lots wise).
- II. The size of packed goods.
- III. Whether the goods can be dispatched in containers?
- IV. Port of Loading.
- V. Port of Discharge.

7. REVERSE AUCTION.

- a) 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 for RA. Detailed guidelines available at our site www.bhel.com
- b) 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. 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.

8. DELIVERY TERMS.

- a) Goods shall be dispatched by sea, unless stated otherwise in the tender enquiry or purchase order.

- b) In the event of bidder offering CFR delivery terms for delivery in FCL (Full Container Load), the bidder shall provide 21 days' time free of detention for General Purchase Container / High Cube Container and 14 days for the other types from the date of delivery at delivery port. Wherever the detention free period offered is less than the above specified period, the consequential cost at port of clearance shall be to the account of the bidder. Number of detention free days must be mentioned on Bill of Lading (BL).
- c) In case of CFR delivery, Port congestion charges or any additional charges claimed by shipping line till delivery at destination port shall be to the bidder's account.
- d) Specifically confirm your agreement to change the mode by Air at BHEL's request as per mutually agreed terms even after placement of Purchase Orders.
- e) The Trans-shipment is not permissible in case of Break Bulk Cargo. In rest of the case Trans-shipment condition in BHEL purchase order / letter of credit will be as per Uniform Custom and Practice for documentary credits, UCP 600 of International Standard Bank proceed re-issued by International chamber of Commerce (ICC).
- f) No demurrage / godown rent will be payable to the vendor / vendor's transporter for any delay in payments attributable to the vendor.
- g) The shipping line should be ready to move the containers to consignees nominated CFS (Container Freight Station) yard and Indian agent of shipping line should issue Cargo Arrival Notice (CAN) 7 days in advance for filing the IGM (Import General Manifest) at discharge port.

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- h) In case of CFR contract, bidder to supply the material through a Certified Sea worthy vessel.
- i) A certificate of origin (COO) sanctioned in country of origin from chamber of commerce of the manufacturing country is mandatory to be provided. However a certificate of origin (COO) from the countries under the restricted list of Govt. of India will not be acceptable.
- j) For reasons of delay in receipt of documents from suppliers or due to the same being found to be incomplete, and / or faulty, the suppliers shall be responsible to reimburse in all demurrages / wharfages, if any paid by BHEL (for stated reasons).
- k) **The invoices being issued by shipping lines must be in the name of BHEL. Otherwise, BHEL will have to forego Input Credit on GST.**
- l) While booking the shipment, bidder to also finalize **destination charges** and the same should appear over BL or agreed tariff to be provided to BHEL before arrival of shipment.
- m) If cargo is stuffed in container then the same should be allowed to be moved to CFS of importers choice without any additional charges.
- n) Load port charges shall be settled by the supplier and not be passed on to BHEL in form of destination charges.
- o) NNDs (Non Negotiable Documents) (preferably with OBLs) should be sent at least 7 days in advance i.e. 7 days before the arrival of vessel so as to enable BHEL to move the containers to JWC CFS.
- p) **Information related to OBL / AWB Documents:**
- I. Consignee name and address should be same as mentioned in the Purchase order.
- II. Notify party: Name and address will be as follows :(For discharge port Mumbai or Nhava Sheva)
Bharat Heavy Electricals Limited
14th Floor World Trade Centre-1, Cuffe Parade, Colaba, Mumbai -400005
Email: msseahwr@bhel.in &
ppximx@bhelhwr.co.in (in case of Sea Shipments)
Email: msair@bhel.in and
ppximx@bhelhwr.co.in (in Case of Air shipments)
For latest updating please refer our web site:
www.bhelhwr.co.in
- III. OBL should clearly mention the Indian agent address and contact details.
- IV. OBL should be issued as per UCP 600.
- V. In case of incoterms other than FOB, OBL should mention the container detention free period.
- VI. In case of placement of an Order, BHEL requests bidder to supply one Original Bill of Lading / AWB directly to their Mumbai office with other non-negotiable documents to ensure timely clearance of goods. The other Original Bill of Ladings may be routed through bank based on the other agreed terms and conditions of purchase order.

9. PENALTY FOR LATE DELIVERY.

- a) Date of delivery will be considered as per the delivery terms mentioned in the Purchase Order. Penalty will be applicable on total order value @0.5% per week or part thereof subject to maximum of 10% of the PO value unless otherwise specified in Special Conditions of tender enquiry. Acceptance / Non Acceptance of this CONDITION

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must be specifically mentioned in your quotation. Any deviation from this will be loaded accordingly i.e. BHEL shall load maximum penalty under penalty for late delivery Clause, to the extent the same is not agreed by the bidder, for the purpose of evaluation.

- b) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.
- c) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- d) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- e) The delivery date for penalty purpose will be the Bill of Lading Date / Air way bill.

10. PAYMENT TERMS.

- a) BHEL's standard payment term is Payment after Receipt and Acceptance of Material / Item at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.
- b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.
- c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.
- d) Where the payments are through bank, the documents may be presented for negotiation through BHEL designated banks which will be

specified in Purchase order. Documents should be submitted within 5 days of vessel sailing and receipt of OBL from shipping line.

- e) In case BHEL agrees for payment through LC, the same shall be irrevocable, unconfirmed and will be opened 30 days prior to the scheduled delivery and will be valid for a period of 60 days.

11. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit / performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website www.bhelhwr.co.in. However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

12. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

- a) Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken away by the Seller at his cost and replaced on

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Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) In case the material is rejected, then date of replacement will be considered as the actual date of delivery.
- c) The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG/refund of amount paid.

13) QUALITY REQUIREMENT.

Your bid / quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

14. VALIDITY.

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

15. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.
- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for, then latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

16. TRANSIT INSURANCE.

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- a) Transit Insurance will be covered by BHEL under its open Marine Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR / GR / BL / AWB, Invoice value etc.) to Finance department (Store bill Section), BHEL Ranipur Haridwar (Uttarakhand -India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

17. PHYTOSANITARY CERTIFICATE:

- a) As per the Indian Law, all consignments being imported into India by air/sea require a phytosanitary certificate from the country of origin-if articles have been packed with wooden packaging materials. This is mandatory. Please confirm in your offer/dispatch documents that the required phytosanitary certificate will be submitted.
- b) Packaging material means any kind of material of plant origin used for packing which include hay, straw wood shavings, wood chips, saw dust, wood waste, wooden pallets, dunnage mats, wooden packages, coir pith, peat or sphagnum moss etc.

18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part

thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.

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- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.
- i) Change in law / government. Regulation making the performance impossible.

The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement;
- b) mitigate the effect of any Force Majeure Event; and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing

with the sellers located in such zone / region/ country then BHEL reserves the right to cancel the order.

20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

21. SETTLEMENT OF DISPUTES / ARBITRATION.

Any dispute / difference arising out of or in connection with this contract, including any question regarding its existence, validity or termination, shall be referred to and finally resolved by arbitration under the Arbitration and Conciliation Act, 1996 of India by a Sole Arbitrator to be appointed with mutual consent of the parties. Such Sole Arbitrator shall be either a retired judge of Supreme Court or High Court or District Court of India or some Advocate having practiced in Indian Courts. The seat or place of arbitration shall be New Delhi, India. The language to be used in the arbitration shall be English. The governing law of the contract shall be the substantive law of India. In case the parties fail

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to agree on the appointment of arbitrator within 2 months of the notice invoking arbitration by one party, then the arbitrator shall be appointed in accordance with the Arbitration and Conciliation Act, 1996 of India.

JURIDICTION: The courts of New Delhi, India, shall have exclusive jurisdiction.

22. INFORMATION TO THE BIDDERS.

- a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website www.bhelhwr.co.in. The user ID & password can be obtained by sending a request to concerned purchase executives.
- b) Intimate your change in mail address or communication address or changes, if any, by email to ppx_idx@bhelnhr.co.in giving your bidder Code.
- c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site www.bhelhwr.co.in.
- d) Copy of this Tender Enquiry is being sent through the post/ Courier / E-mail or by any existing means.
- e) Invoice description and Unit of measurement should be strictly in accordance with Purchase order.
- f) Unit of measurement for dimension and weight should be in metric system only.

23. NOTE.

- a) Special conditions of enquiry, if enclosed By BHEL, will supersede the respective standard / general terms of enquiry.

- b) Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
- c) In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of supervision of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guidelines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
- d) The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.

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For Indian Bidders (Version June-2017,Rev: 01)

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1. GENERAL.

These general terms & conditions shall apply to all the Tender Enquiries, notice inviting tenders, request for quotations concerning the supply of goods and / or rendering of services to Bharat Heavy Electricals Ltd., HEEP, Haridwar (hereinafter referred to as BHEL or the Purchaser).

2. ORIGIN OF QUOTATION.

- a) The quotation should preferably be from the principal bidder. However tender specific authorized registered dealer / agent can also submit the bid on their behalf, failing which the quotation is liable to be ignored. BHEL prefers to deal directly with the principal manufacturers.

- b) An agent cannot quote on behalf of more than one principal in the same Tender Enquiry.

3. SUBMISSION OF TENDER.

- a) Bid / Quotation must be enclosed in sealed cover on which tender enquiry number and the due date MUST BE written and be invariably sent under REGISTERED POST / SPEED POST / COURIER / Dropped in the Tender Box: addressed as follows:-

Quotation Against Enquiry No. _____

Dated: _____

Due on: _____

To,

**THE HEAD OF MATERIALS MANAGEMENT,
Heavy Electrical Equipment Plant,
Bharat Heavy Electricals Limited,
HARIDWAR-249403 (Uttarakhand), INDIA.**

- b) In case of Three / Two Part Bid, technical bid containing technical offer, duly signed and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid but without prices.
- c) The bid / quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored. Tender received through authorized E-mail is also acceptable. However, in time submission of tender in tender box shall be the responsibility of the bidder, sent through any mode. Documents submitted with the offer / bid shall be signed and stamped in each page by authorized representative of the bidder.
- d) Any additional documents submitted by supplier / bidder, during processing of registration application / tender or after placement of order shall not be accepted unless it is

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BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)

For Indian Bidders (Version June-2017,Rev: 01)

submitted with forwarding letter and duly signed and stamped as mentioned above in clause c.

- e) The bids of the bidders who are on the banned list and also the bids of the bidders, who engage the services of the banned firms, shall be rejected. The cutting / overwriting in the bid / offer must be duly attested by the signatories to the bid. The list of firms banned by BHEL is available on BHEL web site www.bhel.com.
- f) Being PMD vendor, if you are not quoting against this tender enquiry, please send your regret letter positively for our reference with valid reasons for not participating in the tender enquiry. Repeated lack of response on the part of bidder may lead to deletion such PMD vendor from BHEL's approved vendor list.
- g) The bidders will submit Integrity Pact, duly signed by its authorized signatory, along with their bids wherever estimated tender value is Rs. 5 Crore or more.
- h) In case of open tender, the unregistered bidder shall submit inter alia duly filled-in Supplier Registration Form (SRF) along with the bid. Bidders can download the SRF from www.bhel.com
- i) BHEL reserves the right to award tendered quantities among more than one bidder (after acceptance of L1 price by the other bidders). BHEL can also consider awarding of part of the tendered quantity to other than L-1 bidder at L1 counter offered rates, if the quantity offered by the L-1 bidder is less than the quantity tendered for.

4. TENDER OPENING.

Tender opening is scheduled to start in the Tender Room at 2:00 PM, on the due date. Therefore bid / quotations must reach this office / tender Box latest by 1:45 PM on due date. Only participating bidders are allowed to attend tender opening. **TENDERS RECEIVED AFTER THE SPECIFIED TIME OF THEIR 'SUBMISSION' WILL BE TREATED AS LATE TENDERS AND SHALL NOT BE CONSIDERED UNDER ANY CIRCUMSTANCES.** The bidders or their authorized representatives may be allowed to attend tender opening if duly authorized by their principals, through a tender

specific letter, for price bid opening on that particular day. General authorization letter is not acceptable.

5. SPECIFICATION, DRAWINGS & STANDARD.

- a) Bidders must give their detailed specification in the quotation along with relevant technical literature / catalogue etc. against the tender enquiry.
- b) The Bid should be accompanied with relevant copies of catalogues, drawings or specification as per tender enquiry. If these documents are not furnished, the offer is liable to be rejected.
- c) Wherever national / international (N/IN) standards are referred, the latest N/IN standards are to be followed. Mention year & date of standard revision that shall be followed for the supply.
- d) All Drawings and Standards are proprietary of BHEL. It must not be used in anyway detrimental to the interest of the company.

6. PRICE SCHEDULE.

- a) Kindly quote your prices in figures and words both. In case of any discrepancy in value, the prices quoted in words shall be considered for evaluation and establishing L1 status.
- b) Prices quoted should not be more than the prices quoted to any other BHEL units / offices / divisions. Vendor to submit copy of latest Purchase Order placed by any unit of BHEL for similar items in the technical bid. In case no order has been placed on such items, specific confirmation that no order has been placed on such items should be provided.
- c) Prices should be quoted on F.O.R. Destination basis. Transit insurance shall be arranged by BHEL and not to be included in the prices. The offers quoted on other than F.O.R destination basis may result in non consideration of such bids.

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- d) In case BHEL accepts the EX-Works prices, such offers will be loaded by 1.5% of EX-Works value towards freight or with actual freight charges as per BHEL freight rate contract whichever is higher.
- e) In case of Indigenous items covered by DGS & D Rate Contract, the bidders should submit latest valid copy of the rate contract along with bid / quotation
- f) Applicable **IGST / CGST / SGST** and any other statutory levy should be indicated separately and clearly in the bid / quotation.
- g) Bidders can dispatch goods through any Indian Bank Association approved transporters having their branch at HARIDWAR / destination. If material is dispatched through other than Indian Bank Association approved transporter, material to be delivered on door delivery BHEL Stores basis.
- h) In case of dispatch of material through any other unapproved transporter, payment shall be made only after receipt of material and any additional charges payable to the transporter shall be to the bidder's account.
- i) No demurrage / godown rent will be payable to the vendor / vendor's transporter for any delay in payments attributable to the vendor.

NB: Financial evaluation of L1, L2 Status will be on the basis of Landed Cost to BHEL.

7. REVERSE AUCTION.

- a) 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 for RA. Detailed guidelines available at our site www.bhel.com
- b) 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. 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.

8. DELIVERY TERMS.

- a) Goods shall be delivered on 'FOR Destination' basis to the named destination unless otherwise called for in the tender enquiry.
- b) Loading on account of 3rd party inspection charges in case of Indian bidders shall be 0.20%.

9. PENALTY FOR LATE DELIVERY.

- a) Date of delivery will be considered as per the delivery terms mentioned in the Purchase Order. Penalty will be applicable on total order value @0.5% per week or part thereof subject to maximum of 10% of the PO value unless otherwise specified in Special Conditions of tender enquiry. Acceptance / Non Acceptance of this condition must be specifically mentioned in your quotation. Any deviation from this will be loaded accordingly i.e. BHEL shall load maximum penalty under penalty for late delivery Clause, to the extent the same is not agreed by the bidder, for the purpose of evaluation.
- b) Bidders are requested to quote the best delivery meeting the delivery requirements. BHEL reserves the right to reject the offers not meeting BHEL's delivery requirement.
- c) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- d) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- e) **DELIVERY IN CASE OF REJECTION:** In case the material is rejected, then date of replacement will be considered as the actual date of delivery.
- f) **DELIVERY AGAINST BANK DOCUMENTS:** In case payment terms quoted by bidder are documents through bank, and

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the delivery terms being "FOR Haridwar / FOR Transporter Go-down" then date of delivery will be date of intimation by transporter / bidder of delivery of material at Haridwar for the penalty purpose.

- g) Where the payments are through bank, the documents may be presented for negotiation to BHEL authorized / nominated bank.

10. PAYMENT TERMS.

- a) BHEL's standard payment term is Payment after receipt and acceptance of materials / items at HEEP, BHEL-Store or at desired destination unless otherwise specified in Special Terms attached to the tender enquiry.
- b) BHEL reserves the right to accept or reject the offer of the bidder who quotes the payment term other than BHEL's standard payment term.
- c) Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar.

11. TAXES & DUTIES.

- a) The bidder to specify in their offer (part 1 bid) the category of their registration under GST like Registered, Unregistered and composite dealer.
- b) The provisional GST registration number of Bharat Heavy Electrical Ltd, Heavy Electricals Equipment Plant, Ranipur, Haridwar is "05AAACB4146P1ZL" with state Code as "05" and State Name as "Uttarakhand".
- c) Please quote our provisional GST registration number in all invoices raised for supply of goods and services under GST regime and also ensure filing of timely return and payment of tax and compliance of other applicable provisions on supplier under GST regime.
- d) No GST will be reimbursed to unregistered or composite dealer. In the event, any GST is quoted by composite dealer, the same shall be added to the cost of supply in evaluating the bid.

- e) Since, input credit of GST will be available to BHEL-Haridwar only after correct filing of return and payment of applicable GST by supplier, reimbursement of GST shall be made by BHEL-Haridwar on matching of vendor inputs at GST portal, ensuring availability of input credit to BHEL Haridwar. Payment of GST will be made to vendor after matching of input credit and vendor to ensure submission of their invoices along with consent to accept payment of tax after such matching in all cases where bills are submitted directly to BHEL-Haridwar or through bank or under LC or through any other mode.
- f) In the event of any disallowance of input credit or applicability of interest or any other financial liability arises on BHEL-Haridwar due to any default of supplier under GST, such implication shall be to supplier's account.
- g) In the event of any change in the status of the vendor after the submission of the bid but before the supply, GST applicable at the time of supply or in the bid, based on the registration status of the vendor, whichever is lower shall be payable.
- h) Where ever applicable If PAN (Permanent Account Number) of the recipient is not available, income tax is deductible either at the normal rate or at the rate of 20 percent, whichever is higher as per Section 206AA of Indian Income Tax Act 1961.
- i) The bidder shall clearly indicate HSN (*Harmonised System Nomenclature*) / SAC (*Service Accounting Code*), its description and applicable rate of GST for each item in his techno-commercial bid.
- j) Statutory Variation in Taxes & duties as applicable at the time of supply shall be payable. However, in the event of no change in law but bidder quoting certain tax structure in bid document which is lower than the applicable one, such amount shall be the maximum amount of tax that can be claimed by bidder.
- k) IMPORTED GOODS OFFERED BY INDIAN BIDDERS AGAINST DEALER INVOICE: Wherever the material being offered is imported, the bidder must quote the prices inclusive of IGST. The rate and value of IGST as included in

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the price must be indicated separately. In case quantum of IGST is not mentioned by the bidder the same will not be considered for evaluation. However, bidder will have to pass on the benefit of IGST to BHEL at the time supply.

- i) In case of directly dispatchable items to Customer's Site, BHEL-Haridwar will inform the GST registration number of the respective customer which must be mentioned on the vendor's invoice. Vendor to ensure availability of such information from BHEL-Haridwar before dispatch of any material. However while filing GSTN-1, BHEL Haridwar GSTN number to be quoted.

Note: - Vendors must ensure compliance of all the applicable rules and procedure as envisaged in the GST Regime. Any loss to BHEL-Haridwar due to fault / non-compliance by the vendor will be to the vendor's account.

12. BANK GUARANTEE.

In case the bank guarantees are required to be deposited towards security deposit/performance guarantee or for any other purpose as per the terms of this tender enquiry, such bank guarantees of the requisite value in the denominated currency of the purchase order should be from one of the Indian branch of BHEL consortium banks and the bank guarantee should be in the proforma as prescribed by BHEL. The proforma of bank guarantee and the list of consortium banks are displayed at BHEL website www.bhelhwr.co.in. However, in case the bank guarantee is not from BHEL consortium banks, then the bidder has to get the bank guarantee confirmed from one of the Indian branch of BHEL consortium banks and the bank charges for such confirmation will be borne by the bidder.

13. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS.

Goods shall comply with the specifications for material, workmanship and performance. Unless otherwise specified, the warranty shall be for a period of 18 months from the date of receipt. If the delivery is found non-compliant during the warranty period, leading to rejection, the Seller shall arrange free replacement / repair of goods, within one month from the date of intimation or any mutually agreed period. The rejected goods shall be taken

away by the Seller at his cost and replaced on Delivered Duty Paid (DDP) (FOR - BHEL Stores / designated destination basis) within such period. In the event of the Seller's failure to comply, Purchaser may take action as appropriate, including Repair / Replenish rejected goods & disposal of rejections, at the risk & cost of the Seller. In case the defects attributable to Seller are detected during processing of the goods at BHEL or at our subcontractor's works, the Seller shall be responsible for free replacement / repair of the goods as required by BHEL.

- b) **RETURN OF REJECTED MATERIAL FOR REPLACEMENT:** The bidder shall have to pay 5% incidental charges while taking back supplied material if it is found rejected on receipt. The rejected material shall be sent back only after receipt of replacement / submission of BG/refund of amount paid.

14. QUALITY REQUIREMENT.

Your bid/quotation should have specific confirmation regarding meeting all our quality requirements such as. (i) Test Certificate (TC), (ii) Guarantee Certificate (GC) / Warranty Certificate (WC), (iii) Quality Plan (QP) (if applicable); and (iv) Pre-Dispatch Inspection at your works (if applicable).

15. VALIDITY

The quotation should be valid for a minimum period of 90 days effective from the date of opening of tender, unless otherwise specified in the tender enquiry.

16. RIGHT OF ACCEPTANCE.

- a) **BHARAT HEAVY ELECTRICALS LIMITED HARIDWAR** reserves the right to reject any or all the bids / quotations without assigning any reason thereof. BHEL also reserves the right to increase or decrease the tendered quantities. Bidders should be prepared to accept order for reduced quantity without any extra charges.
- b) Any discount / revised offer / bids submitted by a bidder on its own shall be considered, provided it is received on or before the due date and time of offer / bid submission (Part-1). Conditional discounts shall not be considered for evaluation of tenders.

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- c) Unsolicited discounts / revised offers / bids given after Part-1 bid opening shall not be accepted. No change in price will be permitted within the validity period asked for in the tender enquiry.
- d) In case of changes in scope and / or technical specification and / or commercial terms & conditions having price implication, techno-commercially acceptable bidders shall be asked by BHEL to submit the impact of such changes on their price bids. In case a bidder opts to submit revised price bid instead of impact called for then the latest price bid shall prevail. However in both situations, original price bid will be necessarily opened.
- e) The bidder whose bid is technically not accepted will be informed & EMD wherever submitted shall be returned after finalization of contract. EMD shall be forfeited in the event of bidder opting out after tender opening.
- f) BHEL reserves the right to short close the existing Purchase Order / Rate Contract / Work Order or any extension thereof at any stage.

17. TRANSIT INSURANCE.

- a) Transit Insurance will be covered by BHEL under its open Insurance Policy. Seller shall inform dispatch particulars (Purchase Order, RR/GR/, Invoice value etc.) to "Finance department (Store bill Section), BHEL Ranipur Haridwar (Uttarakhand -India) with value of consignment to the Purchaser within 07 days of dispatch for BHEL to arrange insurance coverage in its policy. Failure on the part of seller to inform dispatch particulars will make him liable to pay for any transit damages / losses suffered by the Purchaser.
- b) If Quoted Prices are inclusive of transit insurance, no weightage shall be given while evaluating the bids for Cost of Insurance, being in BHEL Scope.

18. RISK PURCHASE.

In case of abnormal delays (beyond the maximum late delivery period as per Penalty clause) in supplies / defective supplies or non-fulfillment of any other terms and

conditions given in Purchase Order, BHEL may cancel the Purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier. BHEL will take all reasonable steps to get the material from alternate source at optimum cost. If bidder does not agree to the above Risk Purchase Clause, BHEL reserves the right to reject the offer. In case for compelling reasons BHEL accepts the offer without acceptance of this clause by the bidder and in the eventuality of Risk Purchase, appropriate action will be taken as per BHEL extant rules. This will be without prejudice to any other right of BHEL under the contract.

19. FORCE MAJEURE CLAUSE.

Notwithstanding any other thing contained anywhere else in the contract or PO (Purchase Order), In case the discharge of obligation under the contract by either party is impeded or made unreasonably onerous, neither party shall be considered in breach of the contract to the extent that performance of their respective obligation is prevented by an event of Force Majeure that arises after the effective date (PO date).

In the above clause, Force Majeure means an event beyond the control of the parties to the contract which prevents a party from complying with any obligation of the contract including but not limited to:

- a) Act of God (Such as but not limited to earthquake, drought, tidal waves, floods etc.).
- b) War (whether war be declared or not), Hostilities Invasion, Act of foreign enemy etc.
- c) Rebellion, revolution, insurrection, civil war etc.
- d) Contamination of Radio Activity from any nuclear fuel or from any other nuclear waste or any other hazardous materials.
- e) Riots, commotions, strike unless restricted to the employees of supplier.
- f) Acts of terrorism.
- g) Other unforeseeable circumstances beyond the control of the parties and which the affected party cannot avoid even by using its best efforts.
- h) Cancellation of contract by customer.
- i) Change in law/ government. Regulation making the performance impossible.

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The party claiming to be affected by force majeure shall notify the other party in writing immediately without delay on the intervention and on the cessation of such circumstances.

Irrespective of any extension of time, if an event of force majeure occurs and its effect continues for more than 180 days the affected party shall have right to cancel the contract.

As soon as reasonably practicable following the date of commencement of a Force Majeure Event, and within a reasonable time following the date of termination of a Force Majeure Event, either Party invoking it shall submit to the other Party reasonable proof of the nature of the Force Majeure Event and of its effect upon the performance of the Party's obligations under this Agreement.

The party shall, and shall ensure that its Subcontractors shall, at all times take all reasonable steps within their respective powers and consistent with Good Operating Practices (but without incurring unreasonable additional costs) to:

- a) Prevent Force Majeure Events affecting the performance of the party's obligations under this Agreement.
- b) mitigate the effect of any Force Majeure Event and
- c) Comply with its obligations under this Agreement.

If the war like situation has developed in a country where a seller's works is located in this P.O. or there is political instability and Indian Embassy located in that country forbids or advises for not having any business dealing with the sellers located in such zone / region/ country then BHEL reserves the right to cancel the order.

20. NON-DISCLOSURE AGREEMENT.

All Drawing and Technical Documents relating to the product or it's manufacture submitted by one party to the other, prior or subsequent to the formation of contract, shall remain property of the submitting party. Drawing, technical documents or other technical information received by one party, shall not without the consent of the other party, be used for any other purpose than that, for which they were provided. Such technical information shall not without the consent of the submitting party, otherwise be used or copied, reproduced, transmitted or communicated to a third party. Patterns supplied by BHEL will remain BHEL's property which shall be returned by the

bidder on demand to BHEL. Bidder shall in no way share or use such intellectual property of BHEL to promote his own business with others. BHEL reserves the right to claim damages from the bidder, or take appropriate penal action as deemed fit against the bidder, for any infringement of the provisions contained herein.

21. SETTLEMENT OF DISPUTES / ARBITRATION.

In all cases of dispute the matter shall be referred for ARBITRATION by sole arbitrator to be appointed by the Unit Head of Bharat Heavy Electricals Ltd., at HARIDWAR. The award of the Arbitrator shall be final and binding on both the parties. The place of Arbitration shall be Haridwar.

JURISDICTION: The courts of Haridwar, India, shall have exclusive jurisdiction.

22. WHARFAGE / DEMURRAGE RESPONSIBILITY.

In the event of delay in receipt of documents by Manager (Stores-Shipping) BHEL-Haridwar and in case where dispatches are made through Unapproved Transporter the sole responsibility for wharfage /demurrage for such delay shall be that of supplier.

23. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE'S) BENEFITS.

- a) "MSE Suppliers can avail the intended benefits only if they submit along with the offer, attested copies of either EM II certificate having deemed validity (**five years** from the date of issue of acknowledgement in EM II) or valid NSIC certificate or EM II certificate along with attested copy of a CA certificate (Format enclosed at annexure-1 where deemed validity of EM II certificate of five years has expired) applicable for the relevant financial year (latest audited). Date to be reckoned for determining the deemed validity will be the date of bid opening (Part 1 in case of two part bid). Non submission of such documents will lead to consideration of their bid at par with other bidders. No benefit shall be applicable for this enquiry if any deficiency in the above required documents is found or the requisite documents are not submitted before price bid opening. If the tender is to be submitted through e-procurement portal, then the above required documents are to be

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uploaded on the portal. Documents should be notarized or attested by a Gazetted officer."

- b) Any new supplier will be eligible for registration with BHEL as MSE supplier provided at least any one of the following documents are submitted along with application for registration :-
- c) Valid NSIC Certificate or
- d) Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
- e) EM II certificate along with attested copy of CA Certificate (as per prescribed format at annexure-A) applicable for the relevant financial year (latest audited), where the deemed validity of EM II is over.
- f) However, credentials of all MSE suppliers will be verified before advancing the intended benefits.
- g) MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.
- h) In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1 bidder, then BHEL can offer 20% of quantity of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15 % band and the same is accepted by more than one MSE bidders then 20% quantities of respective items will be considered for ordering on proportionate basis amongst MSE bidders.
- i) While distributing the 20% quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering

favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR rating.

- j) In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost .
- k) In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR rating shall be given preference.
- l) If L1 bidder is MSE bidder, entire quantity will be given to such MSE bidder only.
- m) Note: It may however be noted that MSE guidelines as on date (Date of Technical Bid Opening Part-1) shall prevail

24. INFORMATION TO THE BIDDERS.

- a) Purchase related information is available at our Business-to-Business (B2B) Portal available on our website www.bhelhwr.co.in The user ID & password can be obtained by sending a request to concerned purchase executives.
- b) Intimate your change in mail address or communication address or changes, if any, by email to ppx_idx@bhelhwr.co.in giving your bidder Code.
- c) Please resolve your rejections and unexecuted overdue purchase order immediately which are posted at our B2B Portal, which can be visited through our site www.bhelhwr.co.in
- d) Copy of this Tender Enquiry is being sent through the post.

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- a) Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard/general terms of enquiry.
- b) Any other Standard terms and Conditions of the bidder attached/referred against the tender enquiry will be treated as null and void ab initio.
- c) In order to protect the commercial interests of BHEL, it becomes necessary to take action against suppliers / contractors by way of supervision of business dealings, who either fail to perform or are in default without any reasonable cause, cause loss of business / money / reputation, indulged in malpractices, cheating, bribery, fraud or any other misconducts or formation of cartel so as to influence the bidding process or influence the price etc. Guide- lines for Suspension of Business Dealings with Suppliers / Contractors shall prevail over which is available at BHEL website <http://www.bhel.com>
- d) The bidder along with its associate / collaborators / sub-contractors / sub-vendors / consultants / service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL-Management about any fraud or suspected fraud as soon as it comes to their notice.

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