

	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/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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INDEX

Document description	Page No. of PDF file
NIT : MATERIAL DETAILS AND INSTRUCTION TO BIDDERS	Pg. No. 2 to 8
Terms and Conditions of PPP-MII-Order-2017	Pg. No. 9 to 11
TERMS AND CONDITIONS (in addition to GISTC)	Pg. No. 12 to 17
General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC) For Foreign Bidders	Pg. No. 19 to 30
General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC) For Indian Bidders	Pg. No. 31 to 42
PQR and Other cross referred documents of PQR	Pg. No. 43 to 52
Technical Specification for condenser Air Evacuation Package HE57016 rev 03	Pg. No. 53 to 79
Drawing No. 31611770059 rev 00	Pg. No. 80 to 81
Drawing No. 31611770061 rev 00	Pg. No. 82 to 83
Quality Plan QA/BI/QP/006, REV.06	Pg. No. 84 to 87

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1707 / 4175	ENQUIRY NO. B/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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NIT: MATERIAL DETAILS AND INSTRUCTION TO BIDDERS

1. SCOPE OF ENQUIRY

Sealed Bids are invited from bidders for the supply of Condenser Air Evacuation Package (Vacuum Pump) for 1X660MW PANKI TPS EXTN, UPRVUNL Project as per requirement mentioned below:

Sl. No.	Material Code & Item Description	Total Quantity	LOT Quantity & Date of Delivery
1.	W90716150310 DRG: 31611770059 REV:00 CONDENSER AIR EVACUATION PACKAGE(VACUUM PUMP PKG)	02 Nos	Lot-1: 2 Nos, Dly.: 04/08/2020
2.	W96716155473 COMPLETE VACUUM PUMP(BARE SHAFT VACUUM PUMP,40 SCFM AT 1"HG) SPEC: HE57016 REV: 03	1 NO	1 NO, Dly: 30/12/2021
3.	W97716155334 PRESSURE TRANSMITTER FOR VACUUM PUMP: 0-1 BAR ABS SPEC: HE57016 REV: 03 SIZE: 0-1 BAR ABS, DIM.: -	2 NO	2 NO, Dly: 30/12/2021
4.	W97716155466 TEMPERATURE GAUGE 0-100 DEG C,FOR VACUUM PUMP HEAT EXCHANGER SIZE: 0 TO 100 DEG C DIM.: -	2 NO	2 NO, Dly: 30/12/2021
5.	W96716155244 TEMPERATURE TRANSMITTER FOR VACUUM PUMP SPEC: HE57016 REV: 03	1 NO	1 NO, Dly: 30/12/2021
6.	W97716155512 LEVEL SWITCH FOR VACUUM PUMP SIZE: - DIM.: --	1 NO	1 NO, Dly: 30/12/2021
7.	W96716155490 FLOW INDICATOR CUM SWITCH FOR VACUUM PUMP SPEC: HE57016 REV: 03 SIZE: -	1 NO	1 NO, Dly: 30/12/2021
8.	W97716155741 DRG: TO SUIT ORIGINAL SUPPLY REV:00 PRESSURE GAUGE (SERVICE WATER)-	2 NO	2 NO, Dly: 30/12/2021
9.	W97716155547 LEVEL GAUGE FOR VACUUM PUMP SEPARATOR TANK SPEC: HE57016 REV: 03 SIZE: TO SUIT ORIGINAL SUPPLY DIM.: -	2 NO	2 NO, Dly: 30/12/2021

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10.	W97716155474 TEMPERATURE SWITCH FOR VACUUM PUMP SIZE: - DIM.: -	1 NO	1 NO, Dly: 30/12/2021
11.	W97716155849 DRG: TO SUIT ORIGINAL SUPPLY REV:00 AIR FLOW METER (ROTAMETER) FOR VACUUM PUMP SYSTEM SPEC: HE57016 REV: 03	1 NO	1 NO, Dly: 30/12/2021
12.	W96716155457 DIFFERENTIAL PRESSURE GAUGE FOR VACUUM PUMP PACKAGE DUPLEX FILTER SPEC: HE57016 REV: 03 SIZE: -	1 NO	1 NO, Dly: 30/12/2021
13.	W96716155210 DIFFERENTIAL PRESSURE SWITCH FOR VACUUM PUMP. SPEC: HE57016 REV: 03	1 NO	1NO, Dly: 30/12/2021
14.	W90716155028 DRG: 31611770061 CONDENSER AIR EVACUATION PACKAGE (VACUUM PUMP PKG) SPEC: HE57016 REV: 03	02 Nos	Lot-1: 2 Nos, Dly.: 04/08/2020
15.	W97716155903 COMPLETE VACUUM PUMP (BARE SHAFT VACUUM PUMP, 30 SCFM AT 1" HG) SPEC: HE57016 REV: 03	01 Nos	Lot-1: 1 Nos, Dly.: 31/12/2021

2. PROJECT INFORMATION:

Project Name	1X660MW PANKI TPS EXTN, UPRVUNL
Project Address	1X660MW PANKI TPS EXTN, UPRVUNL

3. EARNEST MONEY DEPOSIT (EMD)

3.1 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)	USD 3000 or Equivalent foreign currency	Refundable

3.2 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, UTTARAKHAND, 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

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1707 / 4175	ENQUIRY NO. B/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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3.3 Bidders already registered at BHEL Hardwar (i.e. PMD Vendors) for this package are exempted from submission of the EMD.

3.4 MSE Suppliers/Central / State – PSUs / Government departments are exempted from submission of the EMD.

3.5 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.

3.6 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.

4. PRE-QUALIFICATION REQUIREMENT (PQR)

The Pre-Qualification Requirements have been compiled and enclosed 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.

Important Note: Bidders should ensure completeness and correctness of all supporting documents of PQR along with their offer. BHEL reserve the right to close PQR within 30 days of opening of techno-commercial Bids. Offers of Bidder / Bidders, who do meet PQR i.e. do not complete the PQR documentation within 30 days of opening of techno-commercial bid, may be ignored and no-further correspondence shall be entertained thereafter.

5. SUBMISSION OF OFFER

5.1 Only English version of all documents would be valid & binding.

5.2 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/ Technical Requirements 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.

5.3 Name of vendor's dealing person with Contact No(s), Email ID and Address of correspondence shall be provided in the bid.

5.4 Tenders are to be submitted in Two Parts and Part-I (Techno-Commercial Bid along with 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:

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

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1707 / 4175	ENQUIRY NO. B/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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- Earnest Money Deposit (EMD)/details of EMD in case of E-Payment.
- Bidders are required to furnish requisite details 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 enclosed
- Complete Technical offer with relevant drawings/ documents etc.
- “MATERIAL DETAILS AND INSTRUCTION TO BIDDERS”, Annexure-A (Additional terms and conditions) 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) and reply for each clause of Annexure-A are to be necessarily submitted along with the offer. Deviations if any are to be listed out separately. Please note that in case no-deviation sheet is received along with offer, it will be presumed that all terms and conditions mentioned in “INSTRUCTION TO BIDDERS & SPECIAL TERMS OF ENQUIRY”, annexure-A and “GISTC (General Instructions and Standard Terms & Conditions against Tender Enquiry)” shall be acceptable to you and your offer will be processed accordingly.
- Endorser QAP
- 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
- ***Documents for taking up Customer approval*** (as per the format Annexure- C)

B. PART-II: PRICE-BID: Containing Prices and to be submitted in original, strictly as per enquiry conditions for complete scope of tender enquiry

5.5 Following shall be superscripted 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 5.4 [B])

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

5.6 Parts – I & II shall be submitted in separate sealed covers duly superscripted as indicated above and shall be enclosed further in a main cover duly sealed and superscripted as:

“OFFER FOR (ITEM NAME) AGAINST **ENQUIRY NO. B/4222/2018/3364V/1 DUE ON**
CONTAINING PART-I & PART-II Bids”. Vendor’s full name and address should be clearly mentioned on the envelope

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

5.8 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 /

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 1707 / 4175	ENQUIRY NO. B/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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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.

5.9 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.

5.10 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.

5.11 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.

5.12 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 3 above. The Pre-Qualification requirements have been compiled in enclosed.

5.13 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.

5.14 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.

5.15 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@bhel.in Tel: +91 1334 28 5773	Mr. S S Panwar Designation: DGM (PPX-BOI) 4th Floor, Main Administrative Building HEEP, BHEL Hardwar- 249403 Uttarakhand, India Email ID: sspanwar@bhel.in Tel: +91 1334 28 1707
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- 5.16** Bidders shall be allowed in the tender room in area identified for bidders and only one authorized representative from each bidder shall be allowed.
- 5.17** 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.
- 5.18** 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.
- 5.19** BHEL prefers to deal directly with the principal manufacturers/OEM. However, if the OEM/ Principal insists on engaging the services of an agent, the same can be allowed only thru a tender specific authorization letter issued by the principal/OEM. The acceptance of any such offer would be at the discretion of BHEL.

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).

Moreover, either the agent could bid on behalf of the manufacturer/ supplier or the manufacturer/ supplier could bid directly but not both. In case bids are received from both the manufacturer/ supplier and the agent, bid received from the agent shall be ignored.

Vendors operating from BHEL quarters, unauthorized colonies on BHEL Land and Dharamshalas/ Hotels shall not be considered, hence such vendors need not apply.

6. RIGHT OF ACCEPTANCE

- 6.1** 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.
- 6.2** 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.
- 6.3** Unsolicited discounts/revised offers given after enquiry opening (i.e. Part-I bid opening) shall not be accepted.
- 6.4** 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).
- 6.5** 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.

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6.6 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.

6.7 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 finalise 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.

6.8 No correspondence shall be entertained from the tenderers after opening of Part-II (Price bid), except clarifications (if any) asked by BHEL in writing.

7. IMPORTANT NOTE

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.

For and on behalf of BHEL, Hardwar

**S. S. Panwar
DGM (PPX-BOI)**

	PPX-BOI DEPARTMENT BHARAT HEAVY ELECTRICALS LIMITED HEEP: HARDWAR-249 403 (Uttarakhand) FAX: +91 1334 226084/226462 TEL: +91 1334 28 5773	ENQUIRY NO. B/4222/8/3364V1 PACKAGE: Condenser Air Evacuation Package (Vacuum Pump Package) PROJECT: 1X660MW PANKI TPS EXTN, UPRVUNL DATE OF ISSUE OF ENQUIRY: 16/04/2019 ENQUIRY DUE DATE: 15/05/2019
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Terms & Conditions for PPP-MII Order 2017

- **Tender No:** B/4222/2018/3364V/1
- **Item Description:** Condenser Air Evacuation Package (Vacuum Pump Package)
- **Due Date of tender:** 15/05/2019

For this procurement, Public Procurement (Preference to Make in India), {PPP-MII} Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by respective Nodal Ministry shall be applicable even if issued after issue of this Tender Enquiry but before finalization of contract/ PO/ WO against this tender enquiry.

- For this tender enquiry, the margin of Purchase Preference under PPP-MII Order-2017 shall be 20%
(Margin of purchase preference' means the maximum extent to which the price quoted by a local supplier may be above the L1 for the purpose of purchase preference).
- For this tender enquiry, the Minimum Local content under PPP-MII Order-2017 shall be 50%.
Local content' means the amount of value added in India which shall, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all customs duties) as a proportion of the total value, in percent.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable, even if issued after issue of this Tender Enquiry but before finalization of contract/ PO/ WO against this tender enquiry.

A. Eligibility of Bidders:

Bidders required to take purchase preference under PPP-MII Order-2017 are required to submit following documents / confirmation along with the Part-1 of their offer:

1. Bidders are required to declare themselves as “**local supplier**” in Part-1 of Offer.
“Local supplier' means a supplier or service provider whose product or service offered for procurement meets the minimum local content as defined above”
2. In support of above declaration bidders are necessarily required to submit following certificate along with Part-1 offer:
 - a. The Local supplier at the time of bidding shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

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Certificate shall be submitted in enclosed format.

In case bidder's declaration / certificate found to be false at any stage of tender / after award of contract, necessary action will be taken by BHEL against such bidder as per BHEL's extended rules and provisions of PPP-MII order-2017.

B. Modalities of working / awarding contract:

- I. Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract will be awarded to L1.
- II. If L1 is not from a local supplier, the lowest bidder among the local suppliers, will be invited to match the L1 price subject to local supplier's quoted price falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.
- III. In case such lowest eligible local supplier fails to match the L1 price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on, and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

On the letterhead of statutory auditor or cost auditor of the company (in the case of companies) or a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies

Certificate

Subject: Certificate for Minimum Local Content under Notification No. P-45021/2/2017-BE-II dt. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated 28.05.2018 of Government of India.

In line with Government Public Procurement Order No. P-45021/2/2017-BE-II dt. 15.06.2017 & P-45021/2/2017-PP (BE-II) dated 28.05.2018, we hereby certify that we M/s _____(supplier name) are local supplier meeting the requirement of minimum local content (50%) as defined in above orders for the Offer against Enquiry No. _____

Details of location at which local value addition will be made in India is as follows:

Sl. No.	Location Detail	% age of Local content (i.e. Local Value addition made at the location)

We also understand, false declarations will be in breach of the Code of Integrity under Rule 175(1)(I)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.

Seal and Signature

of statutory auditor or cost auditor of the company (in the case of companies) or a practicing cost accountant or practicing chartered accountant (in respect of suppliers other than companies)



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

ENQUIRY NO. B/4222/8/3364V1
PACKAGE: Condenser Air Evacuation Package
(Vacuum Pump Package)
PROJECT: 1X660MW PANKI TPS EXTN,
UPRVUNL
DATE OF ISSUE OF ENQUIRY: XXX
ENQUIRY DUE DATE: XXXX

36

These Terms and Conditions are in addition to the General instructions and standard terms & conditions (GISTC) as enclosed

Sl. No	Terms	Description	Confirmation of vendors
1.	Confirmation to General Instructions and standard terms & conditions	Please submit signed and stamped copy of Confirmation to General Instructions and standard terms & conditions (enclosed) as your acceptance to these terms and conditions. Deviation to "General Instructions and standard terms & conditions", if any, shall be submitted along with offer in separate documents. Please note that in case no- deviation sheet of "General Instructions and standard terms & conditions", is received along with offer, it will be presumed that all terms and conditions mentioned in "General Instructions and standard terms & conditions" shall be acceptable to you and your offer will be processed accordingly.	
2.	Evaluation criteria	The evaluation would be done on the basis of total landed cost to BHEL up Project site (i.e. 1X660MW PANKI TPS EXTN, UPRVUNL Project Site), considering all items and services covered in enquiry taken together. Total landed cost up site includes Material Value, freight charges up to site, custom handling charges, Insurance, TPI charges, Taxes & Duties etc..	
3.	Validity	Confirm that the validity of the offer shall be 180 days from the due date of opening of Techno-Commercial offers. Please note that BHEL reserves the right to ignore the offers quoting validity less than 180 days from EOD (Enquiry Opening Date).	
4.	Basis of Quotation	For Foreign Bidders: Please quote your prices of CFR NAHVA SHEVA Port Mumbai Basis. The prices are necessarily to be quoted on CFR NAHVA SHEVA Port Mumbai. For evaluation (i.e. calculating total landed cost to BHEL upto project site) inland freight will be loaded in line with GISTC. For Indian Bidders: Please quote your prices on Ex-works freight prepaid basis upto Panki site. Inland freight from Works to 1X660MW PANKI TPS EXTN, UPRVUNL Project Site Should necessarily be quoted separately.	
5.	Supervision of Commissioning.	Please note that vendor's competent representative is required for Supervision of erection & commissioning of the equipment at our project site. Please confirm to quote your charges for Supervision of Erection &	

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

ENQUIRY NO. B/4222/8/3364V1
PACKAGE: Condenser Air Evacuation Package
(Vacuum Pump Package)
PROJECT: 1X660MW PANKI TPS EXTN,
UPRVUNL
DATE OF ISSUE OF ENQUIRY: XXX
ENQUIRY DUE DATE: XXXX

		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 (Lump Sum, including every expense of travel like VISA, Air Fare etc...). Please note that for evaluation purpose charges for 4 days, per condenser air evacuation package at site and 1 visit for 1 project unit shall be considered. 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. Please inform whether TDS is included in quoted prices of Supervision? Please confirm to depute your representative to our site within 15 days form the intimation from BHEL. Please note that BHEL will deduct tax (TDS) from your bill of supervision (if Included by bidders) as per rules and regulations of Government of India, at the time of payment of supervision and furnish Tax Deduction at Source (TDS) Certificate. If TDS is not included in the prices, loading of the same will be done for evaluation. Please inform your PAN No if available and provide a copy of PAN Card	
6.	Engineering Document/ Document approval	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.	
7.	Bank Guarantee	Kindly confirm your acceptance to submit PBG (performance bank guarantee) for 5% 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.	
8.	Payment Terms	Payment terms shall be as per GISTC. Please confirm your acceptance for the payment terms of GISTC. "Receipt and Acceptance" wherever referred in payment terms clause of GISTC may be treated as "Receipt of material at site".	



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		In case of deviation in payment terms w.r.t. tender conditions, offer shall be evaluated after loading on account of deviation in payment terms as per extended rules of BHEL.	
9.	Penalty Clause	In case of delay in supply of material beyond the agreed contractual delivery, Penalty for Late Delivery would be applicable @ 0.5 % of the undelivered portion per week of delay or part thereof subject to a maximum of 10% of the total order value. Please confirm. 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).	
10.	QUALITY REQUIREMENTS & THIRD PARTY INSPECTION	Please confirm and endorse (with sign and stamp) BHEL SQP "QA/BIQP/006, Rev.06. SQP shall be sent to customer for their approval. For Material Code W90716150310: Inspection shall be done by BHEL nominated inspection agency and End Customer as per final customer approved Quality Plan. Please confirm. End customer may witness inspection at supplier's works at customer's cost. However, supplier is required to inform schedule of inspection one month in advance for deputation of customer's representative. In case of delay in deputation of customer's representative delivery shall be re-scheduled accordingly. For all other items covered in Enquiry: Inspection shall be done by BHEL nominated inspection agency and End Customer as per Customer approved Quality Plan of Condenser Air Evacuation Package (Vacuum Pump) wherever applicable. In case, item is not appearing in the customer approved quality plan, then test certificates / certificate of compliance (COC) shall be submitted for the same. Please confirm. The tentative scope of Third Party Inspection would be as per enclosed Quality Plan QA/BI/QP/006, REV.06 (enclosed). Please submit your quality plan for review by BHEL. For Indian Bidders: Inspection charges by Third party inspection agency shall be to BHEL's account. BHEL shall pay directly to TPI, however for evaluation purpose, TPI charges would be loaded as per rate contract of BHEL with TPI. Please confirm. However, all coordination with TPI for arranging inspection shall be done by supplier. Please confirm. 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.	



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11.	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.	
12.	Delivery	Please note that material is required as per the deliveries mentioned in lot date of enquiry. Please quote your deliveries accordingly in no. of weeks from the date of PO including the time required for approval of documents. 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. Please note that following Time would be needed by BHEL during processing of PO at different stages. Please quote your delivery from the date of PO, considering the time required by BHEL for different activities as mentioned below: • Date of LR/Bill of Lading shall be treated as date of actual delivery. Please confirm. • Document approval time: 30 Days would be needed by BHEL from the date of submission of complete and correct documents. In case of delay in document approval by BHEL, delivery shall be re-scheduled accordingly. • For deputation of customer's Inspector for witnessing Inspection: 30 Days Prior notice is required by BHEL. In case delay by BHEL in deputation of customer's representative, delivery shall be re-scheduled accordingly. • MDCC issuance Time: 7 Days would be needed by BHEL for issuance of MDCC after receipt of complete test certificates in line with Quality plan. Please confirm date of LR,GR/RR/bill of Lading as applicable shall be considered as date of delivery.	
13.	Guarantee	Guarantee shall be 36 months from the date of dispatch or 24 months from the date of commissioning whichever is earlier. Guarantee certificate is to be provided along with shipping documents. Please confirm.	
14.	Type Test requirement.	Please submit your type test report for both type tests (i.e. Cavitation & Humid air test), for the type test conducted not more than five years prior to the date of bid opening. 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.	



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		Please quote your type test charges (Separately for both the type tests i.e. Cavitation & Humid air test). Decision on ordering of Type test charges will be finalized during techno-commercial scrutiny of offers and will be informed to you at the time of intimation of price bid opening.	
15.	Packing Instruction / Details	Please confirm that main condenser Air Evacuation package and all other items covered in enquiry should be packed in separate boxes. Please confirm that each item in the box of spares items must be tagged with the same description as per packing list. Detail of each spare should be mentioned in the packing list. Please confirm.	
16.	Operation & Maintenance Manual	O&M manuals are required in 20 nos Hard copies and 3 CD ROMS. You 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.	
17.	Special Condition	To resolve the vacuum pump related issue, vendor 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. 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.	
18.	Additional Technical Conditions	DESIGN DATA IS AS UNDER: (A) CONDENSER-1: i) COOLING WATER DESIGN INLET TEMP. = 33 DEG C ii) CONDENSER DESIGN BACK PRESSURE = 53.887 mm Hg (0.07326 ATA) iii) WATER QUALITY= NORMAL WATER (B) CONDENSER-2: i) COOLING WATER DESIGN INLET TEMP. = 33 DEG C ii) CONDENSER DESIGN BACK PRESSURE = 65.612 mm Hg (0.0892 ATA) iii) WATER QUALITY= NORMAL WATER Please note that Revised Condenser Air Evacuation Package (Vacuum Pump) Specification, HE57016 Rev. 03 to be referred for all reference and use.	
19.	Customer Approval Condition	Please note that procurement shall be done through customer approved vendors only. The bidders who are not registered with BHEL for supply of Condenser Air Evacuation package needs to submit following informations/documents for taking up their approval from end customer:- - Name & address of vendor (Manufacturer) where the item will be manufactured with complete address. - Address of registered office. - Manufacturing facilities (List of machines, Special Process Facilities, Material handling etc.)	



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- Testing facilities (List of testing equipment).
- Supply reference list including recent supplies.
- Product satisfactory Performance feedback letter/Certificate/End user feedback.
- Copy of ISO:9001 certificate (if any)
- Product technical catalogue for proposed item (if available)

With the above information BHEL will approach end customer for approval of PQR & technically qualified bidders.

Price bid of only those bidders will be opened to whom customer will accord their approval.

20. Integrity Pact

(a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. Following Independent External Monitors (IEMs) on the present panel have been appointed by BHEL with the approval of CVC to oversee implementation of IP in BHEL.

Sl.	IEM	Address	Email
1.	Shri D.R.S Chaudhary AS (Retd.)	E-1/164, Area Colony Bhopal 462016 (MP.)	dilip.chaudhary@icloud.com
2.	Mrs. Pravin Tripathi IA & AS (Retd.)	D-243, Anupam Gardens, Lane 1B, Neb Sarai, Sainik Farms, New Delhi- 110 068	pravin.tripathi@gmail.com

(b) The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory) along with techno-commercial bid (Part-I, in case of two/ three part bid). Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification.

(c) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to any of the above IEM(s). All correspondence with the IEMs shall be done through email only

Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc. on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department's officials whose contact details are provided below:

Details of contact person(s)-

Mr. Manoj Kumar Designation: Dy. Manager (PPX-BOI) 4 th Floor, Main Administrative Building	Mr. S. S. Panwar Designation: DGM (PPX-BOI) 4 th Floor, Main Administrative Building HEEP, BHEL
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DATE OF ISSUE OF ENQUIRY: XXX
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		HEEP, BHEL Hardwar- 249403 Uttarakhand, India Email ID: manojy@bhel.in Tel: +91 1334 28 5773	Hardwar- 249403 Uttarakhand, India Email ID: sspanwar@bhel.in Tel: +91 1334 28 1707													
21.	Additional Conditions for Assessment	BHEL reserves the right to visit supplier's works to ensure the capability / capacity of execution of PO. Please confirm. Suppliers shall submit the experienced manpower details specific to Manufacturing and Quality. Suppliers shall indicate their annual installed capacity for the tendered specification & it shall be more than the tendered quantity. Detail of installed capacity shall be submitted in following format: <table border="1"> <thead> <tr> <th>Total Annual Installed Capacity (No. of Vacuum Pump Packages)</th> <th>Capacity Booked for the offered delivery period</th> <th>Balance Capacity</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> Financial Soundness: - Indigenous suppliers shall submit Audited copies of annual reports (Balance Sheets), Profit & loss statement for the last four years (or from date of incorporation whichever is less). - Foreign suppliers shall submit latest D&B report / credit reform report. Please submit details of installed testing/inspection facility along with annual capacity of testing in following format. <table border="1"> <thead> <tr> <th>Total Annual Capacity of Testing facility</th> <th>Booked Capacity for the offered delivery period</th> <th>Balance Capacity</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> BHEL reserves the right to consider / Not-consider the offers based on the evaluation of documents submitted for the Pre-Qualification Criteria and clause no 21 of this document. BHEL also reserves the right to have on-site assessment of the facilities at supplier's works during the bid evaluation.			Total Annual Installed Capacity (No. of Vacuum Pump Packages)	Capacity Booked for the offered delivery period	Balance Capacity				Total Annual Capacity of Testing facility	Booked Capacity for the offered delivery period	Balance Capacity			
Total Annual Installed Capacity (No. of Vacuum Pump Packages)	Capacity Booked for the offered delivery period	Balance Capacity														
Total Annual Capacity of Testing facility	Booked Capacity for the offered delivery period	Balance Capacity														

(Prepared by)

Govind Singh Rawat
(Dy. Engineer; PPX-BOI)

(Checked by) 08/04/2019

Manoj Kumar
(Dy. Manager; PPX-BOI)

(Reviewed by)

S.S. Panwar
(DGM; PPX-BOI)



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)
For Foreign Bidders (Version Jan-2019,Rev: 03)

Table of Contents

1. GENERAL	1
2. ORIGIN OF QUOTATION.....	1
3. SUBMISSION OF TENDER	1
4. TENDER OPENING	2
5. SPECIFICATION, DRAWINGS & STANDARD	3
6. PRICE SCHEDULE	3
7. REVERSE AUCTION	4
8. DELIVERY TERMS.....	4
9. PENALTY FOR LATE DELIVERY	5
10. PAYMENT TERMS.....	6
11. BANK GUARANTEE	7
12. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS	7
13. QUALITY REQUIREMENT	7
14. VALIDITY.....	7
15. RIGHT OF ACCEPTANCE	7
16. TRANSIT INSURANCE	8
17. PHYTOSANITARY CERTIFICATE	8
18. RISK PURCHASE.....	8
19. FORCE MAJEURE CLAUSE.....	8
20. NON-DISCLOSURE AGREEMENT	9
21. SETTLEMENT OF DISPUTES/ARBITRATION	9
22. INFORMATION TO THE BIDDERS	10
23. MAKE IN INDIA (GOVT-NOTIFICATION)	10
24. NOTE	11

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). In case of placement of order these conditions will become part of purchase order until unless the deviations are specifically agreed by BHEL.

2. ORIGIN OF QUOTATION.

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

3. SUBMISSION OF TENDER.

- 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.

- TENDER BOX is located at TENDER ROOM, Room No. - 415, 4th Floor, Main Admin. Building, BHEL-HEEP, Haridwar.

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



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- c) 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.
- d) The bid / quotation must be posted before due date, keeping allowance for postal transit time. 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.
- e) 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.
- 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.
- k) In case of e-Tendering (Online bidding through e portal), offline bid submitted in hard copy or in any other form by the vendor / supplier will not be accepted and will be rejected out rightly. Only e-portal bid will be accepted.

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 on that particular day. General authorization letter is not acceptable.

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



BHARAT HEAVY ELECTRICALS LIMITED

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General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)
For Foreign Bidders (Version Jan-2019,Rev: 03)

Note: - Foreign bidders willing to attend the bid opening has to provide the requisite documents to the concerned Purchase executives for arranging gate pass for them.

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) 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) In case the vendor quotes the prices on CFR basis and BHEL accepts the delivery term on CFR, 0.25 % (of CFR Value) towards port handling charges & 1.5 % (of CFR Value) towards inland freight or actual freight charges as per BHEL freight rate contract whichever is higher, shall be loaded in the prices for ascertaining the landed cost to decide the comparative status of the prices.
- e) However, if BHEL agrees to accept the FOB delivery terms, the FOB prices shall be loaded 2.0% (of FOB Value) towards sea freight, 0.25% (of FOB Value) towards port handling charges & 1.5% (of FOB value) towards inland freight for ascertaining the landed cost to decide the comparative status of the prices.
- f) **Basis of Evaluation for Bid / Quotation in foreign currency:**
 1. Currency exchange rate (TT selling rates of SBI) for evaluation of the bid / quotation received in foreign currency will be as follows:
 2. Single part bid – Date of tender opening.
 3. Two / Three-part bid – Date of part 1 opening.
 4. Reverse auction – Date of part-1 opening.

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

g) Evaluation of Indian Agents Commission:

1. 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.
2. 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

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BHARAT HEAVY ELECTRICALS LIMITED

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For Foreign Bidders (Version Jan-2019,Rev: 03)**

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.

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

h) While submitting your bids please clearly indicate:

1. Expected weight of goods (lots wise).
2. The size of packed goods.
3. Whether the goods can be dispatched in containers?
4. Port of Loading.
5. 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) 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.
- c) 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).
- d) Any demurrage / Godown Rent payable to the Port Authorities due to any delay attributed by the supplier will be recovered from supplier's account.
- e) A certificate of origin (COO) sanctioned in country of origin from chamber of commerce of the manufacturing country is to be provided mandatorily. However, a certificate of origin (COO) from the countries under the restricted list of Govt. of India will not be acceptable.
- f) 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).
- g) Load port charges shall be settled by the supplier and not be passed on to BHEL in form of destination charges.
- h) 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.

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

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).

- i) 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.
- j) 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.
- k) In case of CFR contract, bidder to supply the material through a Certified Sea worthy vessel.
- l) **The invoices being issued by shipping lines must be in the name of BHEL. Any loss in GST due to submission of discrepant document will be recovered from supplier / vendor.**
- m) 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.
- n) If cargo is stuffed in container, then the same should be allowed to be moved to CFS of importers choice without any additional charges.
- o) NNDs (Non Negotiable Documents) (preferably with OBLs) should be sent to BHEL as detailed in para "p" (below), 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@bhelh.in (in case of Sea Shipments)

Email: msair@bhel.in and ppximx@bhel.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 shipments 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 BHEL-Mumbai office (Address at Para "p-II") with other non-negotiable documents to ensure timely clearance of goods. The other Original Bill of Ladings (BL) may be routed through bank based on the other agreed terms and conditions of purchase order.

9. PENALTY FOR LATE DELIVERY.

a) Where items of Purchase Order are independently usable.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on the value of respective delayed supplies subject to a maximum of 10% of the value of respective delayed supplies. Value of delayed supplies will mean the Gross Value payable to the vendor (Before LD) against such supplies excluding taxes and duties.

b) Where the total items are required for a main equipment and items are interdependent.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on total value of Purchase Order subject to maximum of 10% of the total value of Purchase

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

Order. Purchase Order value for this purpose shall be the Total Gross Value payable to the vendor (Before LD) excluding taxes and duties.

“In case of CFR shipment where BHEL accepts the date of inspection as the date of delivery for the purpose of penalty, the vendor has to ensure the shipment within 30 days for containerized cargo and 45 days maximum for Break bulk cargo from the date of inspection. Any delay, beyond this period, which is not attributable to BHEL shall be considered for application of penalty.”

“In case of FOB shipment, vendor has to intimate the readiness of cargo after inspection to BHEL nominated Freight forwarder minimum 15 days in advance for containerized cargo and 30 days in advance for Break bulk cargo before the FOB delivery date. The delay in shipment due to late intimation to BHEL nominated freight forwarder and not attributable to BHEL will be considered for application of penalty”.

- c) 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.
- d) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- e) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- f) 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) 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.
- d) 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.
- e) In case of payment after receipt and acceptance of material, 100% payment will be made within 75 days from the date of invoice subject to submission of non-discrepant documents within 15 days of supply as per terms and conditions of Purchase Order. In case any discrepancy found in the documents, BHEL will notify the same to vendor within 7 days of receipt. Vendor has to clear all the discrepancies in one go within 7 days thereafter else the payment may get delayed.

The loading criteria for the different payment terms shall be as under;

Payment Terms		Days of Loading
After Receipt & Acceptance of material within 75 days of supply.		No Loading
Against Delivery at BHEL-Stores Haridwar.		45
Against documents through bank (CAD):		45
Letter of Credit (LC)		120
Usance LC	No Loading if usance period is > 120 Days.	
	Loading of days difference i.e difference between 120 days and usance period if the usance period is < 120 days.	
Advance	Delivery Period + 120 Days -Advance Payment Days	

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

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 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

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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 Foreign Bidders (Version Jan-2019,Rev: 03)**

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.

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

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

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.

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 the 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

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

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 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.

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

22. INFORMATION TO THE BIDDERS.

- 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.
- Intimate your change in mail address or communication address or changes, if any, by email to AGM(SDX/MM) giving your bidder Code.
- 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.
- Copy of this Tender Enquiry is being sent through the post/ Courier / E-mail or by any existing means.
- Invoice description and Unit of measurement should be strictly in accordance with Purchase order.
- Unit of measurement for dimension and weight should be in metric system only.

23. MAKE IN INDIA (GOVT-NOTIFICATION).

- This tender enquiry shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 of government of INDIA. Accordingly, the minimum local content, the margin of purchase preference and the procedure for preference to make in INDIA shall be adhered.

- Default purchase preference shall be 20% to local suppliers with default minimum local content of 50% for all items / works / services unless any of the Nodal Ministry has prescribed, or prescribe in future lower or higher percentage of purchase preference and/or local content in respect of any items / works / services in which case the purchase preference and/ or local content for that particular items / works / services shall be as prescribed by the Nodal Ministry.

- Vendor to specifically confirm if they are local supplier or not as per above mentioned notification. Accordingly, the local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

'Local Supplier' means a supplier or service provider whose product or service offered for procurement meets the minimum local content. 'Local Content' means the mount of value added in India, which shall, unless otherwise prescribed, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.

- In cases of Procurement for a Value in Excess of Rs. 10 Crores, the Local Supplier shall be required to provide a Certificate from the Statutory Auditor or Cost Auditor of the Company (in the case of companies) or from a practicing Cost Accountant or practicing Chartered Accountant (in respect of suppliers other than companies) giving the percentage of Local Content.
- Requirement of Purchase Preference: Purchase preference shall be given to local suppliers in all procurements undertaken in the manner specified hereunder-
 - "In Procurement of Goods, Services or Works in respect of which the Nodal Ministry has communicated that there is sufficient local capacity and local competition, and where the estimated value of procurement is Rs. 50 lakhs or less, only local suppliers shall be eligible. If the estimated value of procurement of such goods or services or works is more than Rs. 50 lakhs, the provisions of

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

- below sub-paragraph b or c, as the case may be, shall be apply”.
- b) “In the procurements of goods or work which are not covered by above paragraph a and which are divisible in nature, the following procedure shall be followed”;
- i) Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract for full quantity will be awarded to L1.
- ii) If L1 bid is not from a local supplier, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the local suppliers will be invited to match the L1 price for the remaining 50% quantity subject to the local suppliers quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such local supplier subject to matching the L1 price. In case such lowest eligible local supplier fails to match the L1 price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preferences shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the L1 bidder.
- c) “In procurements of goods or works not covered by sub-paragraph E.a) and which are not divisible and in procurement of services where the bid is evaluated on price alone, the following procedure shall be followed”:-
- i) Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract will be awarded to L1
- ii) If L1 is not from a local supplier, the lowest bidder among the local suppliers will be invited to match the L1 price subject to local supplier’s quoted price, falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.
- iii) In case such lowest eligible local supplier fails to match the L1 price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

- F. “For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract / PO / WP against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable.”

- G. Procurements where estimated value to be procured is less than Rs. 5 lakhs shall be exempted from GOI order No. P-45021/2/2017-PP (BE-II) dated 28.05.2018

For Further details, please refer GOI order no. P-45021 / 2 / 2017 - PP (BE-II) dated 28.05.2018.

24. 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. 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

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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 Foreign Bidders (Version Jan-2019,Rev: 03)

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.

- a) "BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life / permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below;

1. **Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.

2. **Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing / operation and works incidental thereto at BHEL factories/ **offices and precincts** thereof , project execution , erection and commissioning, services, repairs and maintenance, trouble shooting, serving , overhaul, renovation and retrofitting , trial operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises/ project sites.

3. **Compensation in respect of each of the victims:**

- (i) In the event of death or **permanent disability** resulting from **Loss of both limbs:** Rs. 10,00,000/- (Rs. Ten Lakh).
(ii) In the event of **other permanent disability:** Rs. 7,00,000/- (Rs. Seven Lakh).

Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2(l) of the Employees Compensation Act, 1923."

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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 Jan-2019, Rev: 03)

Table of Contents

1. GENERAL	1
2. ORIGIN OF QUOTATION	1
3. SUBMISSION OF TENDER	1
4. TENDER OPENING	2
5. SPECIFICATION, DRAWINGS & STANDARD	2
6. PRICE SCHEDULE	3
7. REVERSE AUCTION	3
8. DELIVERY TERMS	4
9. PENALTY FOR LATE DELIVERY	4
10. PAYMENT TERMS	4
11. TAXES & DUTIES	5
12. BANK GUARANTEE	6
13. GUARANTEE / WARRANTY AND CORRESPONDING REPAIRS / REPLACEMENT OF GOODS	6
14. QUALITY REQUIREMENT	6
15. VALIDITY	6
16. RIGHT OF ACCEPTANCE	6
17. TRANSIT INSURANCE	7
18. RISK PURCHASE	7
19. FORCE MAJEURE CLAUSE	7
20. NON-DISCLOSURE AGREEMENT	8
21. SETTLEMENT OF DISPUTES / ARBITRATION	8
22. WHARFAGE / DEMURRAGE RESPONSIBILITY	8
23. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE'S) BENEFITS	8
24. INFORMATION TO THE BIDDERS	10
25. MAKE IN INDIA (GOVT-NOTIFICATION)	10
26. NOTE	11

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). In case of placement of order these conditions will become part of Purchase Order (P.O) until unless the deviations are specifically agreed by BHEL.

2. ORIGIN OF QUOTATION.

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

3. SUBMISSION OF TENDER.

- 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.**

- TENDER ROOM is located at: Room No. - 415, 4th Floor, Main Admin. Building, BHEL-HEEP, Haridwar.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

- c) 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.
- d) The bid / quotation must be posted before due date, keeping allowance for postal transit time. 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.
- e) 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.
- f) 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.
- g) 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.
- h) 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.
- i) 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
- j) 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.
- k) In case of e-Tendering (Online bidding through e-portal), offline bid submitted in hard copy or in any other form by the vendor / supplier will not be accepted and will be rejected outrightly. Only e-portal bid will be accepted.

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 on that particular day. General authorization letter is not acceptable.

Note: - Foreign bidders willing to attend the bid opening has to provide the requisite documents to the concerned Purchase executives for arranging gate pass for them.

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.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

- 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.
- 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) Any demurrage / godown rent payable to the transporter / or to godown's owner due to any delay attributed by the supplier shall be recovered from supplier's account.

NB: Financial evaluation of L1, L2Status 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.

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 Indian Bidders (Version Jan-2019, Rev: 03)

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) Where items of Purchase Order are independently usable.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on the value of respective delayed supplies subject to a maximum of 10% of the value of respective delayed supplies. Value of delayed supplies will mean the Gross Value payable to the vendor (Before LD) against such supplies excluding taxes and duties.

b) Where the total items are required for a main equipment and items are interdependent.

Penalty for Late Deliveries shall be applicable @0.5% per week or part thereof on total value of Purchase Order subject to maximum of 10% of the total value of Purchase Order. Purchase Order value for this purpose shall be the Total Gross Value payable to the vendor (Before LD) excluding taxes and duties.

- c) 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.
- d) Commencement of delivery period shall be reckoned from the date of PO / LOI or any other agreed milestone.
- e) Bidder shall deliver the goods in the manner and schedule agreed under the terms and conditions of Purchase order.
- f) **DELIVERY IN CASE OF REJECTION:** In case the material is rejected, then date of replacement will be considered as the actual date of delivery.

g) **DELIVERY AGAINST BANK DOCUMENTS:** In case payment terms quoted by bidder are documents through bank, and 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.
- d) 100% payment along with taxes, freight & insurance will be made after receipt and acceptance of material and within 75 days from the date of invoice subject to submission of non-discrepant documents within 15 days of supply as per terms and conditions of Purchase Order. In case any discrepancy found in the documents, BHEL will notify the same to vendor within 7 days of receipt. Vendor has to clear all the discrepancies in one go within 7 days thereafter else the payment of vendor may get delayed.
- e) For MSEs (covered under MSME Act) which are registered and periodically renewed with BHEL, the payment will be made within 45 days or as prescribed in the relevant act.
- f) Adherence to the above time schedule of payment is contingent upon Vendor complying with GST Rules w.r.t availment of Input Tax Credit by BHEL.
- g) In case GST credit is delayed / denied to BHEL, due to non / delayed receipt of goods and / or tax invoice or expiry of the timeline prescribed in GST Law for availing such ITC, or any other reason not attributable to BHEL, GST amount shall be

**BHARAT HEAVY ELECTRICALS LIMITED**

HEEP-HARIDWAR, UTTARAKHAND (249403)

General Instructions and Standard Terms & Conditions for bidding against Tender Enquiry (GISTC)**For Indian Bidders (Version Jan-2019, Rev: 03)**

recoverable from Vendor along with interest levied / leviable on BHEL.

- h) The taxes and duties that are reimbursed would be the ones applicable as on the contractual Purchase order delivery date or the amount actually paid whichever is less.

i) The loading criteria for the different payment terms shall be as under;

Payment Terms	Days of Loading
After Receipt & Acceptance of material within 75 days of supply.	No Loading
Against Delivery at BHEL-Stores Haridwar.	45
Against documents through bank (CAD):	45
Letter of Credit (LC)	120
Usance LC	No Loading if usance period is > 120 Days.
	Loading of days' difference i.e. difference between 120 days and usance period if the usance period is < 75 days.
Advance	Delivery Period + 120 Days - Advance Payment Days.

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.

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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 Jan-2019, Rev: 03)

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 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.

l) 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.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

- 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 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.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

- 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.

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.

JURIDICITION: 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



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

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) or vendor has to give Udyog Adhar Memorandum (UAM). 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 require document are to be uploaded on the portal. Documents should be notarized or attested by a Gazetted officer. **UAM need not required to be notarized or attested.**

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: -

1. Udyog Adhar Memorandum (UAM).
2. Valid National Small Industries Commission (NSIC) Certificate.
3. Entrepreneurs Memorandum part II (EM II) certificate (valid based on deemed validity of 5 years) or
4. 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.
5. However, credentials of all MSE suppliers will be verified before advancing the intended benefits.
6. 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.
7. 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 **25%** 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 **25%**

quantities of respective items will be considered for ordering on proportionate basis amongst MSE bidders.

8. There will be minimum of **3%** reservation for women owned MSEs within the above mentioned 25% reservation.
9. The reservation for MSEs owned by SC/ST will be **6.25%** { 25% out of target of 25% - refer para 4 of Public Procurement Policy for the Micro and Small Enterprises(MSEs)}.
10. The definition of MSEs owned by Women Entrepreneurs is clarified as under:
 - a) In case of proprietary MSE, proprietor shall be Woman.
 - b) In case of partnership MSE, the Woman partners shall be holding at least 51% of share in the unit.
 - c) In case of Private Limited companies, at least 51% share shall be held by Women promoters.
11. The definition of MSEs owned by SC/ST is clarified as under:
 - a) In case of proprietary MSE, proprietor(s) shall be SC/ST.
 - b) In case of partnership MSE, the SC/ST partners shall be holding at least 51% of shares in the unit.
 - c) In case of Private Limited companies, at least 51% share shall be held by SC/ST promoters.
12. While distributing the **25%** 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.
13. 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.
14. 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.



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

15. If L1 bidder is MSE bidder, entire quantity will be given to such MSE bidder only.

16. 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 AGM (SDX/MM) 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.

25. MAKE IN INDIA (GOVT-NOTIFICATION).

A. This tender enquiry shall be governed by notification no. P-45021/2/2017-PP (BE-II) dated 28.05.2018 of government of INDIA. Accordingly, the minimum local content, the margin of purchase preference and the procedure for preference to make in INDIA shall be adhered.

B. Default purchase preference shall be 20% to local suppliers with default minimum local content of 50% for all items / works / services unless any of the Nodal Ministry has prescribed, or prescribe in future lower or higher percentage of purchase preference and/or local content in respect of any items / works / services in which case the purchase preference and/ or local content for that particular items / works / services shall be as prescribed by the Nodal Ministry.

C. Vendor to specifically confirm if they are local supplier or not as per above mentioned notification. Accordingly, the local supplier at the time of tender, bidding or solicitation shall be required to provide self-certification that the item offered meets the minimum local content and shall give details of the location(s) at which the local value addition is made.

'Local Supplier' means a supplier or service provider whose product or service offered for procurement meets the minimum local content. 'Local Content' means the mount of value added in India, which shall, unless otherwise prescribed, be the total value of the item procured (excluding net domestic indirect taxes) minus the value of imported content in the item (including all custom duties) as a proportion of the total value, in percent.

D. In cases of Procurement for a Value in Excess of Rs. 10 Crores, the Local Supplier shall be required to provide a Certificate from the Statutory Auditor or Cost Auditor of the Company (in the case of companies) or from a practicing Cost Accountant or practicing Chartered Accountant (in respect of suppliers other than companies) giving the percentage of Local Content.

E. Requirement of Purchase Preference: Purchase preference shall be given to local suppliers in all procurements undertaken in the manner specified hereunder-

a. "In Procurement of Goods, Services or Works in respect of which the Nodal Ministry has communicated that there is sufficient local capacity and local competition, and where the estimated value of procurement is Rs. 50 lakhs or less, only local suppliers shall be eligible. If the estimated value of procurement of such goods or services or works is more than Rs. 50 lakhs, the provisions of below sub-paragraph b or c, as the case may be, shall be apply".

b. "In the procurements of goods or work which are not covered by above paragraph a and which are divisible in nature, the following procedure shall be followed";

i) Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract for full quantity will be awarded to L1.

ii) If L1 bid is not from a local supplier, 50% of the order quantity shall be awarded to L1. Thereafter, the lowest bidder among the local suppliers will be invited to match the L1 price for the remaining 50% quantity subject to the local suppliers quoted price falling within the margin of purchase preference, and contract for that quantity shall be awarded to such local supplier subject to matching the L1 price. In case such lowest eligible local supplier fails to match the L1 price or accepts less than the offered quantity, the next higher local supplier within the margin of purchase preferences shall be invited to match the L1 price for remaining quantity and so on, and contract shall be awarded accordingly. In case



BHARAT HEAVY ELECTRICALS LIMITED

HEEP-HARIDWAR, UTTARAKHAND (249403)

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

For Indian Bidders (Version Jan-2019, Rev: 03)

some quantity is still left uncovered on local suppliers, then such balance quantity may also be ordered on the L1 bidder.

- c. "In procurements of goods or works not covered by subparagraph E.a) and which are not divisible and in procurement of services where the bid is evaluated on price alone, the following procedure shall be followed":-
- Among all qualified bids, the lowest bid will be termed as L1. If L1 is from a local supplier, the contract will be awarded to L1
 - If L1 is not from a local supplier, the lowest bidder among the local suppliers will be invited to match the L1 price subject to local supplier's quoted price, falling within the margin of purchase preference, and the contract shall be awarded to such local supplier subject to matching the L1 price.
 - In case such lowest eligible local supplier fails to match the L1 price, the local supplier with the next higher bid within the margin of purchase preference shall be invited to match the L1 price and so on and contract shall be awarded accordingly. In case none of the local suppliers within the margin of purchase preference matches the L1 price, then the contract may be awarded to the L1 bidder.

- F. "For this procurement, Public Procurement (Preference to Make in India), Order 2017 dated 15.06.2017 & 28.05.2018 and subsequent Orders issued by the respective Nodal Ministry shall be applicable even if issued after issue of this NIT but before finalization of contract / PO / WP against this NIT.

In the event of any Nodal Ministry prescribing higher or lower percentage of purchase preference and/ or local content in respect of this procurement, same shall be applicable."

- G. Procurements where estimated value to be procured is less than Rs. 5 lakhs shall be exempted from GOI order No. P-45021/2/2017-PP (BE-II) dated 28.05.2018

For Further details, please refer GOI order no. P-45021 / 2 / 2017 - PP (BE-II) dated 28.05.2018.

26. NOTE.

- Special conditions of enquiry, if enclosed by BHEL, will supersede the respective standard / general terms of enquiry.
 - Any other Standard terms and Conditions of the bidder attached / referred against the tender enquiry will be treated as null and void ab initio.
 - 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>
 - 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.
 - "BHEL shall recover the amount of compensation paid to victim(s) by BHEL towards loss of life / permanent disability due to an accident which is attributable to the negligence of contractor, agency or firm or any of its employees as detailed below;
- Victim:** Any person who suffers permanent disablement or dies in an accident as defined below.
 - Accident:** Any death or permanent disability resulting solely and directly from any unintended and unforeseen injurious occurrence caused during the manufacturing / operation and works incidental thereto at BHEL factories/ **offices and precincts** thereof , project execution , erection and commissioning, services, repairs and maintenance, trouble



BHARAT HEAVY ELECTRICALS LIMITED

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For Indian Bidders (Version Jan-2019, Rev: 03)

shooting, serving , overhaul, renovation and retrofitting , trial operation, performance guarantee testing undertaken by the company or during any works / during working at BHEL Units/ Offices/ townships and premises/ project sites.

3. Compensation in respect of each of the victims:

(i) In the event of death or **permanent disability** resulting from

Loss of both limbs: Rs. 10,00,000/- (Rs. Ten Lakh).

(ii) In the event of **other permanent disability:** Rs. 7,00,000/- (Rs. Seven Lakh).

4. Permanent Disablement: A disablement that is classified as a permanent total disablement under the proviso to Section 2(I) of the Employees Compensation Act, 1923."

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 & 6 (as applicable), along with the technical offer for proven criteria stipulated below.

Pre-Qualification Requirements		Vendors Confirmation Indicating page no. where documents are placed
Note: Clause No 2.0 is meant for Indian bidder who does not qualify as per clause no 1.0.		
1.0	Bidder/Vendor (QEM i.e. Qualified Equipment Manufacturer) should have designed, manufactured, tested, supplied and commissioned 'Condenser Air Evacuation package' (Liquid Ring Vacuum Pump package) as per HEI (Performance Standard for Liquid Ring Vacuum Pumps), for at least one (1) numbers Purchase Order (PO) 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. Above referred POs should be placed within seven years from date of enquiry. 'Condenser Air Evacuation package' (Liquid Ring Vacuum Pump package) should be in successful operation for a period not less than one (1) year, as on date of enquiry.	
1.1	If Condenser Air evacuation package model offered for this enquiry is different from clause 1.0 above, then additionally, the offered Vacuum pump either should have been Type Tested (Cavitation & Saturated Air test) or been in successful operation for Power plant application for at least one year as on date of enquiry.	
1.2	Vendor (Qualified Equipment manufacturer) should have minimum following in-house manufacturing and testing facility. (i) Rotor balancing facility (ii) Performance test facility Bidder to provide supporting document against clause 1.0, 1.1 & 1.2 as per clause A & B of Annexure-1.	
2.0	An Indian JV/ Subsidiary company or a company having collaboration can also offer, provided that it has a valid Technical collaboration or licensing agreement (for design/engineering, manufacturing, testing and supply of such equipment), in India with a Qualified Equipment Manufacturer (QEM) who meets the requirements stipulated at clause 1.0 above.	
2.1	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.	
2.2	In addition, the Indian JV/ subsidiary Company or a company having collaboration with 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 enquiry	
2.3	The Indian bidder should have the designed, manufactured & Tested of above referred Equipment as per QEM/Collaborator practice.	
2.4	Indian Bidder should have in-house Performance test facility at their works.	
	Bidder to provide supporting document against clause 2.0, 2.1, 2.2, 2.3 & 2.4 as per clause C of Annexure-1	

Navin
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Documents/Details to be submitted for proven criteria mentioned in clause 1.0 & 2.0 of PQR:**A. For Clause 1.0 & 1.2 of PQR: Qualified Equipment Manufacturer (QEM)**

Bidder to submit following documents in support of above confirmation:

- Copy of Un-Priced Purchase Order (PO), placed within seven years from date of enquiry.
- Test certificates for performance test of complete Vacuum pump package for capacity & power Vs Suction pressure, duly co-relating PO No. / Serial no of Package. This Test certificate should be issued by third party inspection agency or acceptance by Customer/end user.
- Copy of end user certificate issued on letter head as per Annexure-2 for successful operation for one year for PO given at sl no (a).
- Details of Vacuum pump package as per Annexure-3 supplied against PO given at sl no (a) for which end user is being furnished.
- Annexure-5, signed and stamped by bidder in support of clause no 1.2.
- Bidders, who have supplied the Condenser Air Evacuation package against PO given at sl no (a) to BHEL, need not furnish Test Certificate, end user certificate & Annexure-3.

B. For Clause 1.1 of PQR: Qualified Equipment Manufacturer (QEM)

Bidder to submit following documents in support of above confirmation:

- Copies of Un-Priced Purchase Order (PO), placed within seven years from date of enquiry.
- Test certificates for performance test of complete Vacuum pump package for capacity 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.
- Copy of PO & Performance test certificate are not to be furnished by bidder qualifying through Type Test criteria. These bidders need to furnish only Type Test (Cavitation & Saturated air test) report witnessed by third party for offered Vacuum pump package.
- Copy of end user certificate issued on letter head as per Annexure-2 for successful operation for one year for PO given at sl no (a).
- Details of Vacuum pump package as per Annexure-3 supplied against PO given at sl no (a)

C. For Clause 2.0 of PQR:

Bidder to submit followings:

- Documents mentioned against clause no. A & B as above to meet the requirements stipulated at clause 1.0 for QEM.
- Details of Indian Subsidiary/JV Company/Collaborating company as per Annexure-4.
- MOU/ certificate of collaboration/ licensing agreement for design, engineering, manufacturing, testing and supply of referred equipment in India.
- Copy of Un-priced purchase order (PO) against clause 2.1 of PQR.
- Copy of commissioning certificate with acceptance from end user. duly co-relating P.O No. / Serial no of Package.
- Details of Vacuum pump package as per Annexure-3 supplied against PO given at sl no (d).
- Bidder to furnish certificate in support of clause no 2.3 from the collaborator/ licensor/ QEM.
- Annexure-6, signed and stamped by bidder in support of clause no 2.4.

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by my INXE

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 :

Email ID :

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, HEER, 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.....

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	Motor i. Type ii. Manufacturer iii. Rating iv. Origin of country	

Signature of authorized signatory.....

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 promoter) 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 a 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.....

(To be furnished by Bidder on its letter head)

ANNEXURE-5

Date:

Details of minimum in-house manufacturing & Testing facility for Vacuum pump package

This is to certify that M/s..... has following minimum in-house facilities for manufacturing of and Testing of Vacuum pump package:

- 1. Rotor balancing facility:
 - 1.1. Details of Rotor dynamic balancing M/c.....
- 2. Performance test facility
 - 2.1. Details of complete set up of performance test facility along with set up photographs (as separate attachment)

Signature :
Name of the Signatory :
Designation :
Phone No :
Email :
Seal & Stamp of the Organization :

(Note: If letter head is in language other than English then translation in English shall be written below header.)

(To be furnished by Indian Bidder on its letter head)

ANNEXURE-6

Date:

Details of minimum in-house Performance Testing facility for Vacuum pump package

This is to certify that M/s..... has following minimum in-house Testing facility of Vacuum pump package:

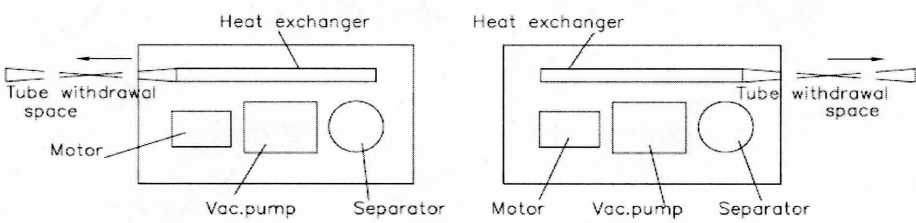
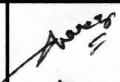
1. Performance test facility
- 1.1. Details of complete set up of performance test facility along with set up photographs (as separate attachment).

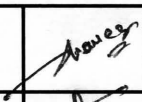
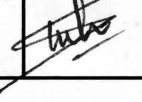
Signature :
Name of the Signatory :
Designation :
Phone No :
Email :
Seal & Stamp of the
Organization :

(Note: If letter head is in language other than English then translation in English shall be written below header.)

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 1 का 27 Page 1 of 27	
SUPERSEDES INVENTORY NO					
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 सूचना भारत भारती लोहे व इस्पात लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रकाशन के बिना भारत भारती लोहे व इस्पात लिमिटेड की अनुमति के बिना नहीं किया जाये।					
TECHNICAL SPECIFICATION FOR CONDENSER AIR EVACUATION PACKAGE UNIT (VACUUM PUMP)					
दिनांक एवं हस्ताक्षर SIGN & DATE 23/4/16					
सामग्री सूची संख्या INVENTORY NO. P-5778					
TSX QAX सहमत विभाग AGREED DEPTT.	DEEPAK S.K CHAUHAN VISHNU SHARMA NAME	DEEPAK S.K CHAUHAN VISHNU SHARMA DATE & SIGNATURE	अनुवादक TRANSLATED BY निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY पर्यवेक्षणकर्ता SUPERVISED BY	नाम NAME SHAVEZ KHAN SHIVA KANT SHASHI KANT	दिनांक एवं हस्ताक्षर SIGNATURE & DATE 18/4/2016 18/04/2016 19/04/2016
SUPERSEDES			स्वीकृति APPROVED : S.K.BAVEJA, AGM (HXE&PED)		
REV.NO. Dt. CHANGE ADVICE NO.	03 18/04/2016 HXE-16-02	निर्माण PREPARED : HXE		जारी ISSUED : TSX	दिनांक DATE :28/09/93
			GR NO. 8.30		

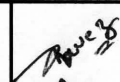
दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016			
				पृष्ठ 3 का 27 Page 3 of 27			
सामग्री सूची नं. को INVENTORY NO.	SUPERSEDES INVENTORY	Out of the scope of supply, Vacuum pump, Vacuum pump Motor & Seal water recirculation pump are critical sub system for which Pre-Qualification Requirements(PQR) need to be complied. 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. 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. 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. 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. 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. 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. 3.10 All components, including spares and spare-assemblies, (if any) of all the pumps and accessories, shall be completely interchangeable. 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). 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. 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. 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					
सामग्री सूची नं. INVENTORY NO.	REV. NO: .03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/4/2016	जांचकर्ता CHECKED BY	SHIVA KANT	18/4/16

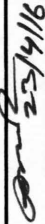
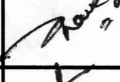
दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 4 का 27 Page 4 of 27	
सुपरसेड्स INVENTORY	3.21 Of the two vacuum pump packages, required per TG set(2x100% design),tube withdrawal space of heat exchanger in one shall be from inlet end and in the other, from outlet end (as indicated below):				
सामग्री सूची संख्या को प्रतिबिम्बित करता है					
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	4.0 MATERIAL OF CONSTRUCTION:				
स्वत्वधिकार एवं गोपनीय इस प्रयोग में की गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की संपत्ति है। इसका प्रयोग एवं प्रसारण रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	A. FOR NORMAL WATER APPLICATION: 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 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.				
दिनांक एवं हस्ताक्षर SIGN & DATE	B. FOR SEA WATER APPLICATION: 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 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.				
सामग्री सूची संख्या INVENTORY NO.	C. Duplex strainer with DPS & DPI is to be provided at CW inlet of Heat Exchanger : - Material (for normal water application): SS 316, for filter body & element. - 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	
18/04/16					

निम्न एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 5	का 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.			
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	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 $\pm 0.5\%$.			
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	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.			
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	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.			
REV. NO: .03		निर्माणकर्ता WORKED BY	SHAVEZ KHAN		12/4/2016
सामग्री सूची संख्या INVENTORY NO.	REV. NO: .03	जांचकर्ता CHECKED BY	SHIVA KANT		18/4/16

निर्माण एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)	HE 57016	
			पृष्ठ 6	का 27
सामग्री सूची संख्या INVENTORY NO.	सुपरसेड INVENTORY	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.		
सामग्री सूची संख्या INVENTORY NO.	सुपरसेड INVENTORY	9.0 ROUTINE TESTS:	9.1 Following minimum tests shall be carried-out:	
			a) All rotating parts of pumps shall be dynamically balanced as per ISO: 1940, G 6.3. b) Shafts shall be subjected to Ultra-Sonic test. After finish machining, shaft shall be subjected to Magnetic Particle or Dye-Penetrant test. Reference & acceptance norms for NDT to be informed for our review / approval. c) 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. d) 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. e) 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. f) Functional test of the package for demonstrating that the requisite functions/ interlocks are being performed by the pump and all the accessories. g) 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. h) Dry Air performance test at 1", 2" & 3" Hg (a) to prove the capacity at guaranteed conditions to be carried out. i) 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. j) 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. k) 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. l) Completeness of Vacuum pump package to be ensured before shipment of Vacuum pump package.	
सामग्री सूची संख्या INVENTORY NO.	सुपरसेड INVENTORY	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.	
सामग्री सूची संख्या INVENTORY NO.	सुपरसेड INVENTORY	REV. NO.: .03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN
सामग्री सूची संख्या INVENTORY NO.	सुपरसेड INVENTORY		जांचकर्ता CHECKED BY	SHIVA KANT

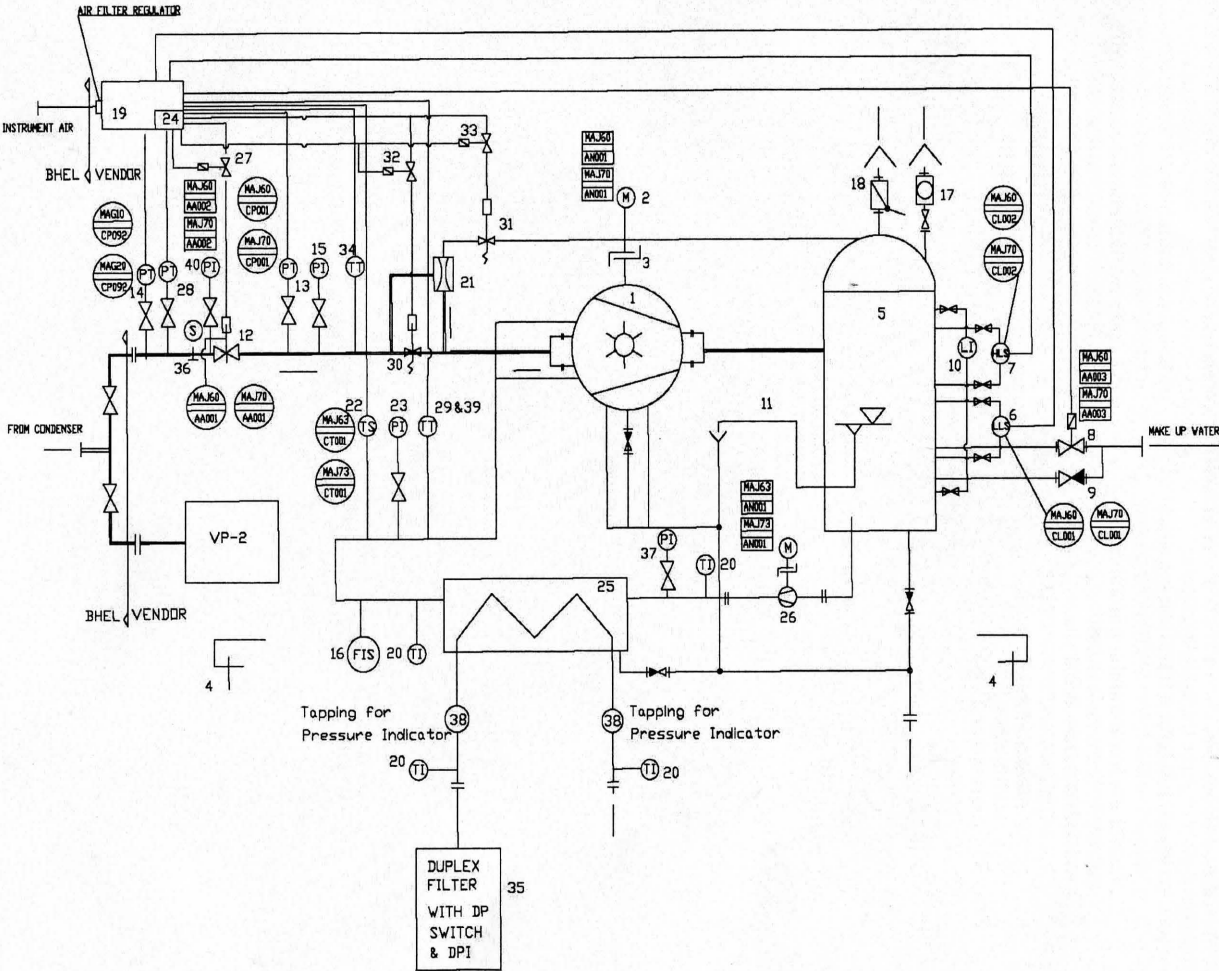
निष्पत्ति एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 7	का 27
SUPERSEDES INVENTORY		10. TYPE TEST : a) Type test-1 : Supplier shall demonstrate by carrying out visual cavitation test that pump will be operating 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 . 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. 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.			
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निष्पत्ति एवं हस्ताक्षर SIGN & DATE	23/4/16				
सामग्री सूची संख्या INVENTORY NO.	REV. NO.: 03	निर्माणकर्ता WORKED BY		SHAVEZ KHAN	18/4/2016
P-5778		जांचकर्ता CHECKED BY		SHIVA KANT	18/4/16

निष्कर्ष एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 8 Page 8	का 27 of 27
सामग्री सूची संख्या को अधिलेखित करना है	SUPERSEDES INVENTORY	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.			
निष्कर्ष एवं हस्ताक्षर SIGN & DATE 23/4/16	REV. NO.: 03				
सामग्री सूची संख्या INVENTORY NO. P-5778			निर्माणकर्ता WORKED BY SHAVEZ KHAN		18/4/2016
			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 9 का 27 Page 9 of 27	
सुपरसेड्स INVENTORY सामग्री सूची संख्या को अवधिमान प्रदान है	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.				
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	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.				
स्वत्व अधिकार एवं गोपनीय इस दस्तावेज में की गई प्रतियां भारत भारती लैबोरेटरीज लिमिटेड की संपत्ति हैं। इसका प्रयोग एवं प्रसारण के बिना या बिना की प्रतियां के बिना ही प्रसारित करने से निषेध है।	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.				
दिनांक एवं हस्ताक्षर SIGN & DATE 	REV. NO: .03				
सामग्री सूची संख्या INVENTORY NO. P-5770	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	 18/4/2016		

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016 पृष्ठ 10 का 27 Page 10 of 27	
सुपरसेडस INVENTORY सामग्री सूची नम्बर को अतिरिक्तित्व करना है	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)				
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	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 गोपनीय इस दस्तावेज में दी गई जानकारी भारत भारती लिमिटेड की संपत्ति है इसका प्रयोग एवं प्रसारण रूप में किसी भी प्रकार प्रसारित करने से निषेधित है					
दिनांक एवं हस्ताक्षर SIGN & DATE 25/4/16					
सामग्री सूची संख्या INVENTORY NO. 25778	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	
				पृष्ठ 11 का 27 Page 11 of 27	
सामग्री सूची संख्या को INVENTORY NO.	सामग्री सूची संख्या को INVENTORY NO.	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.			
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.		20.0 ADDITIONAL TECHNICAL INFORMATION: 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 <u>ANNEXURE:</u> 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 इस प्रयोग में की गई प्रतियां भारत के विद्युत विनिर्माण निगम की संपत्ति हैं। इनका प्रयोग एवं प्रसारण के बिना या बिना की अनुमति के बिना न होना चाहिए।	निष्पन्न एवं हस्ताक्षर SIGN & DATE	23/4/16			
सामग्री सूची संख्या INVENTORY NO.	REV. NO: .03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/4/2016	18/4/16
सामग्री सूची संख्या INVENTORY NO.		जांचकर्ता CHECKED BY	SHIVA KANT		

सामग्री सूची संख्या INVENTORY NO. P-5778		दिनांक एवं हस्ताक्षर SIGN & DATE 23/4/16		स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की सम्पत्ति है। इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाय।		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		सामग्री सूची संख्या को अधिकृत करता है SUPERSEDES INVENTORY		दिनांक एवं हस्ताक्षर SIGN & DATE			
REV. NO.: 03		CONDENSER AIR EVACUATION SYSTEM 										HE 57016 पृष्ठ 12 का 27 Page 12 of 27	
निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY		SYSTEM FLOW DIAGRAM उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR) APPENDIX-A											
SHAVEZ KHAN													
SHIVA KANT													
18/4/16		18/4/2016											

निम्न एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 13 का 27 Page 13 of 27	
सुपरसेड INVENTORY	माली सूची संख्या को अधिकृतित 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.			
माली सूची संख्या INVENTORY NO. 125728	REV. NO: .03	निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016	18/4/16

सामग्री सूची संख्या INVENTORY NO.		दिनांक एवं हस्ताक्षर SIGN & DATE		स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग जो कि कंपनी के हित में हानिकारक हो न किया जाय।		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		सामग्री सूची संख्या को अधिकृतित करना है		SUPERSEDES INVENTORY		दिनांक एवं हस्ताक्षर SIGN & DATE	
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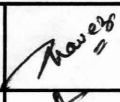
उत्पाद क्रय विनिर्देश (शीट : हरिद्वार)

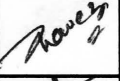
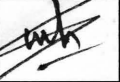
PRODUCT PURCHASE SPECIFICATION

HE 57016

पृष्ठ 14 फॉ 27

Page 14 of 27

HE 57016 पृष्ठ 15 का 27 Page 15 of 27		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)				मी एम डी एल 		दिनांक एवं हस्ताक्षर SIGN & DATE		सामग्री सूची संख्या INVENTORY NO.	
SUPERSEDES INVENTORY		सामग्री सूची संख्या को प्रतिस्थापित करता 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.		स्वत्वाधिकार एवं गोपनीयता इस दस्तावेज में दी गई सूचना भारत के भारतीया विद्युत नियंत्रण अधिनियम के तहत गोपनीय है। इसका उपयोग केवल उद्देश्य के लिए ही किया जाना चाहिए।		दिनांक एवं हस्ताक्षर SIGN & DATE		सामग्री सूची संख्या INVENTORY NO.	
APPENDIX-C INDUCTION MOTOR – SPECIFICATION 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.											
REV. NO: .03				निर्माणकर्ता WORKED BY		SHAVEZ KHAN				18/4/2016	
				जांचकर्ता CHECKED BY		SHIVA KANT				18/4/16	

निम्न एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016 पृष्ठ 16 का 27 Page 16 of 27	
SUPERSEDES INVENTORY सामग्री सूची संख्या को अधिकृतिक करता है	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				
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स्वत्वधिकार एवं गोपनीय इस प्रवेश में दी गई सूचना भारत हीवी एलेक्ट्रिकल लिमिटेड की संपत्ति है। इसका प्रयोग एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।					
निम्न एवं हस्ताक्षर SIGN & DATE 25/4/16					
सामग्री सूची संख्या INVENTORY NO. P-5778	REV. NO: 03		निर्माणकर्ता WORKED BY जांचकर्ता CHECKED BY	SHAVEZ KHAN SHIVA KANT	 18/4/2016  18/4/16

निर्माण एवं हस्ताक्षर SIGN & DATE सामग्री सूची संख्या INVENTORY NO. P-5778	स्वत्वाधिकार एवं गोपनीय यह प्रवेश से की गई प्रतियां भारत की पोलिटेक्निक लिमिटेड की संपत्ति हैं। इनका प्रयोग एवं प्रसारण रूप से किसी भी तरह प्रयोग, जो कि कंपनी के हित में हानिकारक हो न किया जाए।	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	SUPERSEDES INVENTORY सामग्री सूची संख्या को प्रतिस्थापित करना है	निर्माण एवं हस्ताक्षर SIGN & DATE 	उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)	HE 57016 पृष्ठ 17 का 27 Page 17 of 27				
				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="0"> <tr> <td>Motor rating</td> <td>Dimension of terminal boxes</td> </tr> <tr> <td></td> <td>(min distance between centre of stud and gland plate in mm)</td> </tr> <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> </table>	Motor rating	Dimension of terminal boxes		(min distance between centre of stud and gland plate in mm)
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									
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				REV. NO: .03						
निर्माणकर्ता WORKED BY SHAVEZ KHAN				जांचकर्ता CHECKED BY SHIVA KANT						
18/4/16				18/4/16						

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 18	का 27
सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		निर्माणकर्ता WORKED BY	SHAVEZ KHAN
सामग्री सूची संख्या INVENTORY NO.		जांचकर्ता CHECKED BY		SHIVA KANT	18/4/2016
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		10.3 Terminal box shall be suitable for both top and bottom entry of cables.			
सामग्री सूची संख्या INVENTORY NO.		10.4 Unless otherwise approved, the terminal box shall be capable of being turned through 360 degree in steps of 90 degrees.			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		10.6 Suitable tinned brass compression type cable glands and cable lugs shall be supplied by the contractor to match owner's cables.			
सामग्री सूची संख्या INVENTORY NO.		10.7 Marking of all terminals shall be in accordance with IS-4728.			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		11.0 RATING PLATES:			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		11.2 In addition to above, the rating plates shall indicate the following:			
सामग्री सूची संख्या INVENTORY NO.		a) Temperature rise in deg.C under normal working conditions.			
सामग्री सूची संख्या INVENTORY NO.		b) Phase sequence corresponding to the direction of rotation for the application.			
सामग्री सूची संख्या INVENTORY NO.		c) Bearing identification number (in case of ball /roller bearing) and recommended lubricant.			
सामग्री सूची संख्या INVENTORY NO.		12.0 TESTS:			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		12.2 In addition, the following tests shall also be carried out.			
सामग्री सूची संख्या INVENTORY NO.		a) Motors shall be designed to withstand 1.2 times the maximum rated speed for 2 minutes duration as specified in IS: 325.			
सामग्री सूची संख्या INVENTORY NO.		b) Measurement of vibration shall be carried out as specified in IS: 12075.			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		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.			
सामग्री सूची संख्या INVENTORY NO.		12.5 <u>QA and Inspection (Electric motor) :</u>			
सामग्री सूची संख्या INVENTORY NO.		Visual /dimension:		Y	
सामग्री सूची संख्या INVENTORY NO.		Resistance measurement:		Y	
सामग्री सूची संख्या INVENTORY NO.		IR measurement before and after HV test:		Y	
सामग्री सूची संख्या INVENTORY NO.		HV test:		Y	
सामग्री सूची संख्या INVENTORY NO.		Reduced voltage no load running :		Y	
सामग्री सूची संख्या INVENTORY NO.		No load test:		Y	
सामग्री सूची संख्या INVENTORY NO.		Phase sequence, terminal marking and Direction of Rotation:		Y	
सामग्री सूची संख्या INVENTORY NO.		Vibration measurement:		Y	
सामग्री सूची संख्या INVENTORY NO.		Over speed test, 120% of rated speed, for 2 min:		Y	
सामग्री सूची संख्या INVENTORY NO.		SC test/ locked rotor test :		Y	

विचार एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 19 का 27 Page 19 of 27	
SUPERSEDES INVENTORY	APPENDIX-D VACUUM PUMP : DATA SHEET & CHARACTERISTICS CURVES (To be filled in & submitted with the bid)				
मासकी सूची में मंत्रा को अपडेटिंग करना है	I GENERAL :				
	1. Duty : Condenser Air Evacuation System 2. Type : Liquid Ring Type 3. Manufacturer's name : 4. Model No. : 5. Country of origin : 6. Quantity per unit : 7. Project :				
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.	II SCOPE OF SUPPLY : (Refer system flow diagram at Appendix-A, for identification of various parts /components)				
	1. Vacuum Pump Yes 2. Main drive motor with space heater Yes 3. Coupling with coupling-guard Yes 4. Combined base plate (with foundation bolts, nuts, shims, washers) Yes 5. Air water separator Yes 6. Water level gauge (on separator) Yes 7. Rotameter with isolating valve Yes 8. Check valve at separator outlet (with silencer, if required) Yes 9. High & low level switches for alarm/ annunciation Yes 10. Seal water make-up solenoid valve Yes 11. Seal water float operated over flow valve/ overflow drain loop Yes 12. System inlet valve Yes 13. Pressure Transmitters (inlet & outlet of butterfly valve) Yes 14. Pressure Transmitter for stand by pump operation Yes 15. Vacuum gauge with valve Yes 16. Air ejector system Yes/No 17. Anti-cavitation device with control Yes 18. Instrument air filter - regulator Yes 19. Seal water recalculation pump with motor Yes 20. Heat exchanger (shell & tube type) Yes/No (Tube O.D. shall not be less than 5/8") 21. Heat Exchanger (Plate Type) Yes/No 22. Pressure gauge with valve Yes/No 23. Seal water Flow indicator meter Yes (for seal water flow measurement) 24. Seal water flow switch Yes 25. Seal water temperature switch Yes 26. Temperature gauge with thermo well Yes (at all the four terminals of the heat exchanger) 27. Terminal box Yes 28. Necessary valves/piping/ instruments etc. Yes (to make the system complete) 29. Companion flanges with gaskets, fasteners etc. Yes (for purchaser's terminal points) 30. Strainer in seal water line Yes				
स्वत्वधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी एलेक्ट्रिकल लिमिटेड की सम्पत्ति है। इसका प्रयोग एवं आशयस्य रूप से किसी भी तरह प्रयोग जो कि कंपनी के हित में हानिकारक हो न किता जाय।					
विचार एवं हस्ताक्षर SIGN & DATE 18/4/16					
मासकी सूची संख्या INVENTORY NO. P-5778	REV. NO: .03		निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016 18/4/16

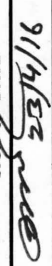
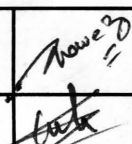
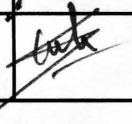
दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
				पृष्ठ 20 का 27 Page 20 of 27	
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	31. Temperature transmitter in suction line Yes 32. Temperature transmitter in seal water line Yes 33. Inlet screen in suction line Yes 34. Pressure gauge with valve after R/C pump Yes 35. Duplex filter with DPI and DPS Yes/No 36. Items not included above (list the items)			
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.		III DESIGN AND PERFORMANCE :			
स्वत्वाधिकार एवं गोपनीय इस प्रलेख में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की संपत्ति है इसका प्रयोग एवं अवलोकन केवल में किया जा सकता है अन्य किसी भी व्यक्ति को इस सूचना के हिल में हस्तान्तरण नहीं किया जाये।		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.			
सामग्री सूची संख्या INVENTORY NO.	दिनांक एवं हस्ताक्षर SIGN & DATE	REV. NO.: 03	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/4/2016
सामग्री सूची संख्या INVENTORY NO.	दिनांक एवं हस्ताक्षर SIGN & DATE		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	
सामग्री सूची संख्या INVENTORY NO.		SUPERSEDES INVENTORY		पृष्ठ 21 का 27 Page 21 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.		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					
दिनांक एवं हस्ताक्षर SIGN & DATE		दिनांक एवं हस्ताक्षर SIGN & DATE		दिनांक एवं हस्ताक्षर SIGN & DATE		दिनांक एवं हस्ताक्षर SIGN & DATE	
सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		निर्माणकर्ता WORKED BY		SHAVEZ KHAN	
सामग्री सूची संख्या INVENTORY NO.				जांचकर्ता CHECKED BY		SHIVA KANT	

निम्न एवं हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
सामग्री सूची संख्या INVENTORY NO.		SUPERSEDES INVENTORY				पृष्ठ 22 का 27 Page 22 of 27	
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स्वत्वधिकार एवं गोपनीय इस प्रलेख में की गई सूचना भारत भारती लिमिटेड की संपत्ति है। इसका उपयोग एवं प्रसारण के बिना या अन्य किसी भी रूप में बिना भारत भारती लिमिटेड के लिखित अनुमति के किया जाना नहीं चाहिए।							
निम्न एवं हस्ताक्षर SIGN & DATE							
सामग्री सूची संख्या INVENTORY NO.							
REV. NO.: .03							
निर्माणकर्ता WORKED BY							
जांचकर्ता CHECKED BY							
HE 57016							
SHAVEZ KHAN							
SHIVA KANT							
18/4/2018							
18/4/2018							

निम्न एवं हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
सामग्री सूची संख्या INVENTORY NO.		SUPERSEDES INVENTORY		पृष्ठ 23 का 27 Page 23 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.		8. Air flow meter (Rota meter) a. Manufacturer b. Type c. Model No. d. Range (must be at least 1.5 times the pump capacity at 76.0 mm Hg abs. suction pressure) kg/ hr e. Size 9. Check Valve (at separator outlet) a. Manufacturer b. Model No. c. Size mm NB d. Seat material 10. Seal water make up solenoid valve a. Manufacturer b. Model No. c. Size mm NB d. Seat material e. Voltage f. wattage rating 11. Float operated seal water over flow valve (if provided) a. Manufacturer b. Model No. c. Size mm NB d. Seat material 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					
सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		निर्माणकर्ता WORKED BY		SHAVEZ KHAN	
सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		जांचकर्ता CHECKED BY		SHIVA KANT	

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016 पृष्ठ 24 का 27 Page 24 of 27	
सामग्री सूची संख्या को अधिकृतित करना है SUPERSEDES INVENTORY	15. Gear oil (if applicable). - Manufacturer - Type - Quantity: - Quantity during Commissioning - Quantity during Continuous running V. GUARANTEED PERFORMANCE : - 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 - Total Power consumption at motor terminals at condenser design point (including seal water pump) KW Bidder is liable to pay as penalty an amount /kw (if specified in the Annexure) for extra power consumption over the guaranteed value. - Pump down time to evacuate vol. shown in the Annexure from atm. pressure to 10" Hg abs. Minutes - Noise level dbA - Vibration level mm/s VI. TESTS and INSPECTION : Will all the tests, inspection and test certificates, detailed in the specification be conducted /furnished. Yes / No If no, please furnish details of non-compliance. VII. WEIGHTS and SPACE REQUIREMENTS : - Weights - Complete package (dry) kg - Complete package (operating) kg - Pump alone kg - Motor alone kg - Heaviest component to be lifted in operation & maintenance. kg - Floor space required mm - Maintenance space required. VIII. CHARACTERISTICS CURVES: (as per clause no.18.6)				
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स्वत्वधिकार एवं गोपनीय इस प्रतीक में की गई सूचना भारत हिंदी एलेक्ट्रिकल लिमिटेड की संपत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप से किसी भी तरह प्रयोग ओ कि कमती के हित में हस्तिकारक हो न किया जाए।					
दिनांक एवं हस्ताक्षर SIGN & DATE 23/4/16					
सामग्री सूची संख्या INVENTORY NO. R-5798	REV. NO: .03		निर्माणकर्ता WORKED BY SHAVEZ KHAN	जांचकर्ता CHECKED BY SHIVA KANT	18/4/2016 18/4/16

निमाक एवं हस्ताक्षर SIGN & DATE				उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)		HE 57016	
सामग्री सूची संख्या को अधिकृतित करना है		SUPERSEDES INVENTORY		पृष्ठ 25 का 27 Page 25 of 27		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)					
स्वत्वाधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत हेवी एलेक्ट्रिकल लिमिटेड की सम्पत्ति है इसका प्रत्यक्ष एवं अप्रत्यक्ष रूप में किसी भी तरह प्रयोग जो कि कंपनी के हित में हानिकारक हो न किया जाए।		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. _____					
निमाक एवं हस्ताक्षर SIGN & DATE 		REV. NO: .03		निर्माणकर्ता WORKED BY SHAVEZ KHAN			
सामग्री सूची संख्या INVENTORY NO. P-57798				जांचकर्ता CHECKED BY SHIVA KANT			

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 26 का 27 Page 26 of 27			
स्वतंत्रताधिकार एवं गोपनीयता 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.		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.					
सामग्री सूची संख्या INVENTORY NO.		REV. NO.: 03		निर्माणकर्ता WORKED BY		SHAVEZ KHAN	
सामग्री सूची संख्या INVENTORY NO.		जांचकर्ता CHECKED BY		SHIVA KANT		18/4/2016	

दिनांक एवं हस्ताक्षर SIGN & DATE		उत्पाद क्रय विनिर्देश (हीप : हरिद्वार) PRODUCT PURCHASE SPECIFICATION (HEEP: HARIDWAR)	HE 57016										
सामग्री सूची संख्या INVENTORY NO.	SUPERSEDES INVENTORY	41. Motor paint shade. 42. Motor earthing point. 43. a) Heating time constant. b) Cooling time constant.	पृष्ठ 27 का 27 Page 27 of 27										
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स्वत्वधिकार एवं गोपनीय इस दस्तावेज में दी गई सूचना भारत हेवी एलेक्ट्रिकल्स लिमिटेड की संपत्ति है इसका प्रयोग एवं अवलोकन केवल उसी व्यक्ति द्वारा ही किया जा सकता है जो कि कंपनी के हित में हो।		IV. GA DRAWINGS OF MOTOR & TERMINAL BOX : V. CHARACTERISTIC CURVES (AT 80 %, 100% & 110 % OF RATED VOLTAGE) <table style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: right;">Curve No.</th> </tr> </thead> <tbody> <tr> <td>1. Current v/s speed</td> <td style="text-align: right;">1. -----</td> </tr> <tr> <td>2. Torque v/s speed</td> <td style="text-align: right;">2. -----</td> </tr> <tr> <td>3. Thermal with stand curve</td> <td style="text-align: right;">3. -----</td> </tr> <tr> <td>4. Current v/s time</td> <td style="text-align: right;">4. -----</td> </tr> </tbody> </table>			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. -----
	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. -----												
दिनांक एवं हस्ताक्षर SIGN & DATE	REV. NO: 03												
सामग्री सूची संख्या INVENTORY NO.	निर्माणकर्ता WORKED BY	SHAVEZ KHAN	18/11/2016										
सामग्री सूची संख्या INVENTORY NO.	जांचकर्ता CHECKED BY	SHIVA KANT	18/11/2016										

6500/L1191C

ON SHAWMO/first meeting

पक्ष को संक्षेप / FIRST ANGLE PROJECTION

सभी विमां निर्दिष्ट न हों / ALL DIMENSIONS ARE IN mm.

पक्ष को संक्षेप (4) / FROM 38 (8)

CONDENSER AIR EVACUATION PACKAGE UNIT (VACUUM PUMP PACKAGE)

General Note : Data mentioned in this document supersedes the concerned clauses of BHEL Specification HE57016.

I. DESIGN DATA :

(No. of Condensers per Unit /TG set: Two)

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 : 6.50 Deg C
- 5) Condenser back pressure : 0.07326 ATA (53.887 mmHg-o)
- 6) Condenser cooling water temp : 33 Deg C
- 7) Cooling water Quality : Normal Water

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

B. All flanges to be as per ANSI.B16.5

II. CAPACITY OF PUMP (as per HEI) :

- 1) Design capacity (Holding) : 20 SCFM at 1" Hg abs at design ITD (6.50 deg C)
- 2) Air+Steam mixture temperature: Sub-cooled by 4.17 °C
- 3) Volume to be evacuated (approx.) : 2000 m³ (Per condenser)
- 4) Time for initial evacuation : As per HEI (condenser)
- 5) Hogging capacity, each pump : as per requirement of HEI plus 20% margin

III. Material of construction (Normal Water):

Clause no 4.2.A should be read as : Heat Exchanger (Shell & Tube Type) Or Alternatively

Heat Exchanger: Plate Type shall also be offered.
Plates shall be of SS,TP 316.
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.

IV. Vendor to supply Heavy-duty, self-undercutting anchor bolts (Foundation Bolts) along with Vacuum pump package. No Pockets shall be provided in concrete foundation for anchor bolts.

V. INDUCTION MOTOR (APPENDIX-C) :

- i. Clause no 2.5 should be read as : Degree of protection for Motors and cable-boxes shall be IP 55.
- ii. LV Motors : Up to including 200 KW (415 V)
- iii. MV Motors : Above 200 KW (3.3 KV)

VI. Power consumption-evaluation criteria :

Bidder's bid shall be loaded with @5.84 lakh/KW over 138 KW of indicated auxiliary power consumption at Condenser design point in its offer.

W90716150310

उत्पाद को प्रकार या ग्राहक/प्रायोजन को नाम
TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT
VACUUM PUMP PACKAGE

भारत हेवी इलेक्ट्रिकल्स लिमिटेड, गान्धी, रायपुर, छत्तीसगढ़	
BHARAT HEAVY ELECTRICALS LIMITED, RAIPUR, HARDWAR	
आपका नाम	SHIVA
आपका पता	SHIVA
आपका फोन	NAVEEN
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18
आपका पता	SD
आपका फोन	10/09/18
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18

आपका नाम	SHIVA
आपका पता	SHIVA
आपका फोन	NAVEEN
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18
आपका पता	SD
आपका फोन	10/09/18
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18

आपका नाम	SHIVA
आपका पता	SHIVA
आपका फोन	NAVEEN
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18
आपका पता	SD
आपका फोन	10/09/18
आपका ईमेल	SD
आपका जन्म तिथि	10/09/18

A3 आकार/A3 SIZE

6500/L1191C
ON SHIMADZU/India Inventions

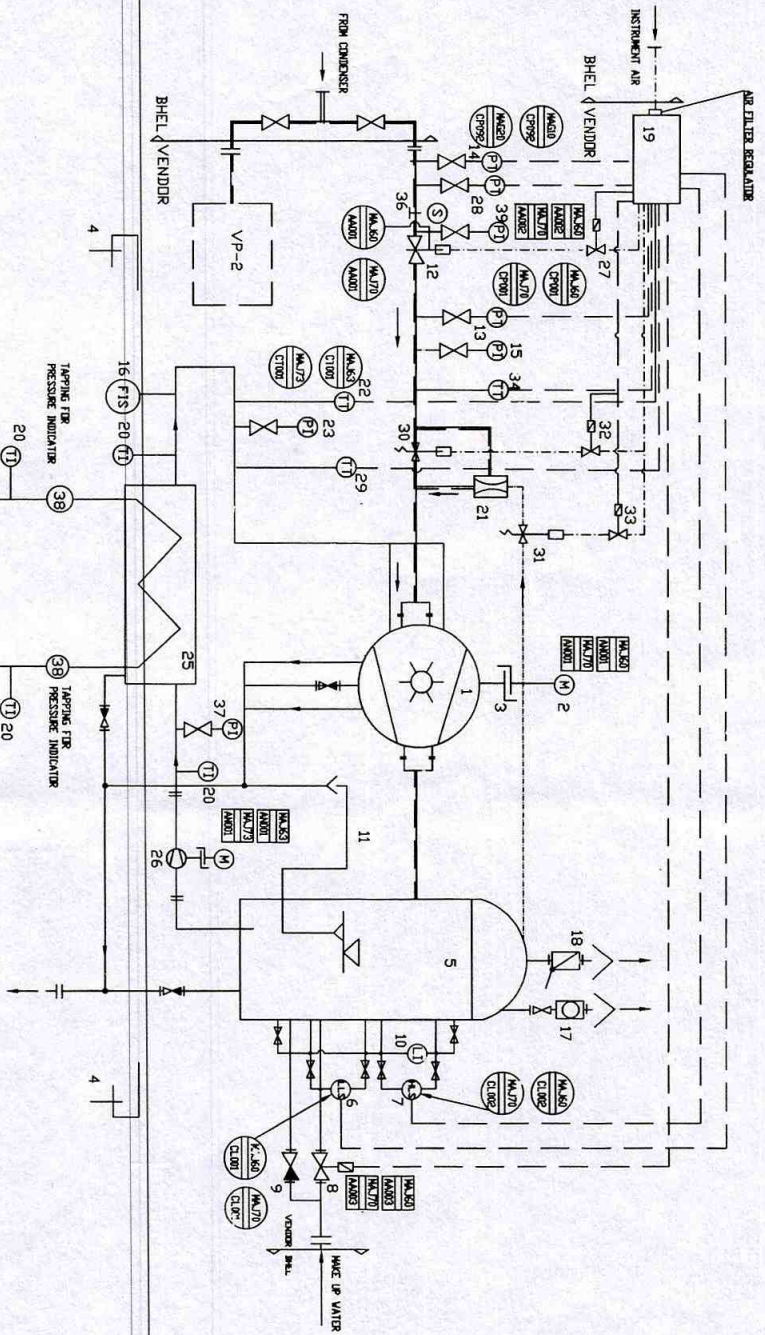
CONDENSER AIR EVACUATION SYSTEM

प्रकार का प्रक्षेप/प्रथम कोण प्रक्षेपण ALL DIMENSIONS ARE IN mm.

पृष्ठ संख्या (60)/पृष्ठ संख्या (38)

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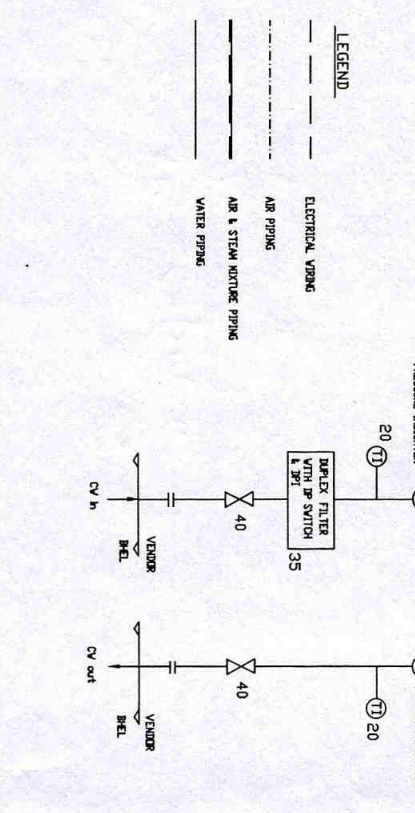
प्रतिलिखित एवं गोपनीय
इस प्रलेख में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रत्यक्ष या अप्रत्यक्ष रूप से किसी भी तरह
प्रयोग नहीं किया जाए, जो कम्पनी के हित में हानिकारक हो



ITEM DESCRIPTION

- VACUUM PUMP, 2-STAGE (OR 1-STAGE)
- COUPLING
- FOUNDATION BOLT+NUT+WASHER
- SEPARATOR
- LOW LEVEL SWITCH WITH ISOLATION VALVE
- HIGH LEVEL SWITCH WITH ISOLATION VALVE
- MAKUP WATER INLET VALVE
- MAKUP WATER BYPASS VALVE
- LEVEL INDICATOR WITH ISOLATION VALVE
- OVERFLOW SYPHON LOOP
- STEADY INLET VALVE WITH OPEN/CLOSE LIMIT SWITCH
- PRESSURE TRANSMITTER FOR INLET VALVE OPEN
- PR. TRANSMITTER FOR STANDBY PUMP OPEN
- PRESSURE INDICATOR WITH VALVE
- SEAL WATER FLOW SWITCH CUM INDICATOR
- AIR FLOW METER (FLOWMETER)
- AIR OUTLET CHECK VALVE WITH HANDLE
- JUNCTION BOX (REFER DRG. NO.)
- TEMPERATURE INDICATOR
- ELECTOR (IF APPLICABLE)
- TEMP. TRANSMITTER FOR SEAL WATER
- PRESSURE INDICATOR WITH VALVE
- HEAT EXCHANGER (SHELL & TUBE/PLATE TYPE)
- SEAL WATER PUMP WITH MOTOR
- SOLENOID VALVE (24 V DC)
- PR. TRANSMITTER FOR ELECTOR (IF APPLICABLE)
- TEMP. TRANSMITTER FOR SEAL WATER FOR ELECTOR (IF APPLICABLE)
- BI-PASS VALVE FOR ELECTOR (IF APPLICABLE)
- MOTOR AIR VALVE FOR ELECTOR (IF APPLICABLE)
- SOLENOID VALVE (24 V DC) FOR ELECTOR (IF APPLICABLE)
- SOLENOID VALVE (24 V DC) FOR ELECTOR (IF APPLICABLE)
- TEMPERATURE TRANSMITTER IN SUCION LINE
- DUPLEX FILTER WITH DRS & DRI
- TEMPERARY INLET SCREEN
- PRESSURE INDICATOR WITH VALVE
- TAPPING FOR PRESSURE INDICATOR
- PRESSURE INDICATOR WITH VALVE
- ISOLATION VALVE

सूची नं. सूची नं. INVENTORY NO.	हस्ताक्षर और तिथि/SIGN & DATE	संदर्भ संकेत/REFERENCE DRG. NO.
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उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		VACUUM PUMP PACKAGE	
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, राणपुर, हरियाणा BHARAT HEAVY ELECTRICALS LIMITED, RANIPUR, HARYANA		श्रीवा, सी.डी. SHIVA, S.D.	
प्रमाण/SCALE		भारत भारती BHARAT BHARTI	
कोड/COE		श्रीवा, सी.डी. SHIVA, S.D.	
वजन (KG)		श्रीवा, सी.डी. SHIVA, S.D.	
कार्ड नं./CARD NO.		श्रीवा, सी.डी. SHIVA, S.D.	
P&ID - CONDENSER AIR EVACUATION SYSTEM		श्रीवा, सी.डी. SHIVA, S.D.	
31611770059		श्रीवा, सी.डी. SHIVA, S.D.	
22.23.24		श्रीवा, सी.डी. SHIVA, S.D.	

A3 माप/33 SIZE

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प्रतिलिखित एवं गोपनीय
इस दस्तावेज में दी गई सूचना भारत भारी इलेक्ट्रिकल्स लिमिटेड की
संपत्ति है। इसका प्रयोग या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

1900/L1191C
ON SHMRAO/HEV/HE57016

पहला दृष्टिकोण / FIRST ANGLE PROJECTION

सभी विमाएँ निर्दिष्ट हैं / ALL DIMENSIONS ARE IN MM.

पृष्ठ संख्या 38 (01)/FORM 38 (B)

CONDENSER AIR EVACUATION PACKAGE UNIT (VACUUM PUMP PACKAGE)

General Note : Data mentioned in this document supersedes the concerned clauses of BHEL Specification HE57016.

I. DESIGN DATA :

(No. of Condensers per Unit /TG set: Two)

A. 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 : 10.24 Deg C
- 5) Condenser back pressure : 0.0892 ATA (65.612 mmHg-a)
- 6) Condenser cooling water temp : 33 Deg C
- 7) Cooling water Quality : Normal Water

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

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

II. CAPACITY OF PUMP (as per HEI) :

- 1) Design capacity (Holding) : 20 SGFM at 1" Hg abs at design ITD (6.50 deg C) Sub-cooled by 4.17 °C
- 2) Air+Steam mixture temperature: 2000 m3 (Per condenser)
- 3) Volume to be evacuated (approx.) : As per HEI (condenser)
- 4) Time for initial evacuation : (with two pumps in operation) as per requirement of HEI
- 5) Hogging capacity, each pump : plus 20% margin
—At 10inch Hg(a)

III. Material of construction (Normal Water):

Clause no 4.2.A should be read as : Heat Exchanger (Shell & Tube Type) Or Alternatively

Heat Exchanger: Plate Type shall also be offered.
Plates shall be of SS,TP 316.
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.

IV. Vendor to supply Heavy-duty, self-undercutting anchor bolts (Foundation Bolts) along with Vacuum pump package. No Pockets shall be provided in concrete foundation for anchor bolts.

V. INDUCTION MOTOR (APPENDIX-C) :

- i. Clause no 2.5 should be read as : Degree of protection for Motors and cable— boxes shall be IP 55.
- ii. LV Motors : Up to including 200 KW (415 V)
- MV Motors : Above 200 KW (3.3 KV)

VI. Power consumption evaluation criteria :

Bidder's bid shall be loaded with 05.84 lakh/KW over 106 KW of indicated auxiliary power consumption at Condenser design point in its offer.

W90716155028

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

भारत भारी इलेक्ट्रिकल्स लिमिटेड, गान्धी, नई दिल्ली		ग्राहक/परियोजना का नाम	
BHARAT HEAVY ELECTRICALS LIMITED,		VACUUM PUMP PACKAGE	
RANIPUR, HARDWAR		CUSTOMER/PROJECT	

क्र.सं.	नाम	पद	दिनांक	हस्ताक्षर
1	SHIVA	SA	10/03/19	
2	SHIVA	SA	10/03/19	
3	NAVEEN	SA	10/03/19	

डिप्टी. HXE कोड / CODE	अनुपात/SCALE	भारत भारी इलेक्ट्रिकल्स लिमिटेड, गान्धी, नई दिल्ली	ग्राहक/परियोजना का नाम
ANNEX. TO HE57016	—	—	—
शीट/कागज	शीट का वजन (KG)	अनुपात/SCALE	शीट का वजन (KG)
ANNEX. TO HE57016	—	—	—

A3 शीट/A3 SIZE

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सम्पत्तिकरण एवं गोपनीय
इस दस्तावेज में दी गई सूचना भारत हेवी इलेक्ट्रिकल्स लिमिटेड की
सम्पत्ति है। इसका प्रयोग या अप्रत्यक्ष रूप में किसी भी तरह
प्रयोग नहीं किया जाए जो कंपनी के हित में हानिकारक हो।

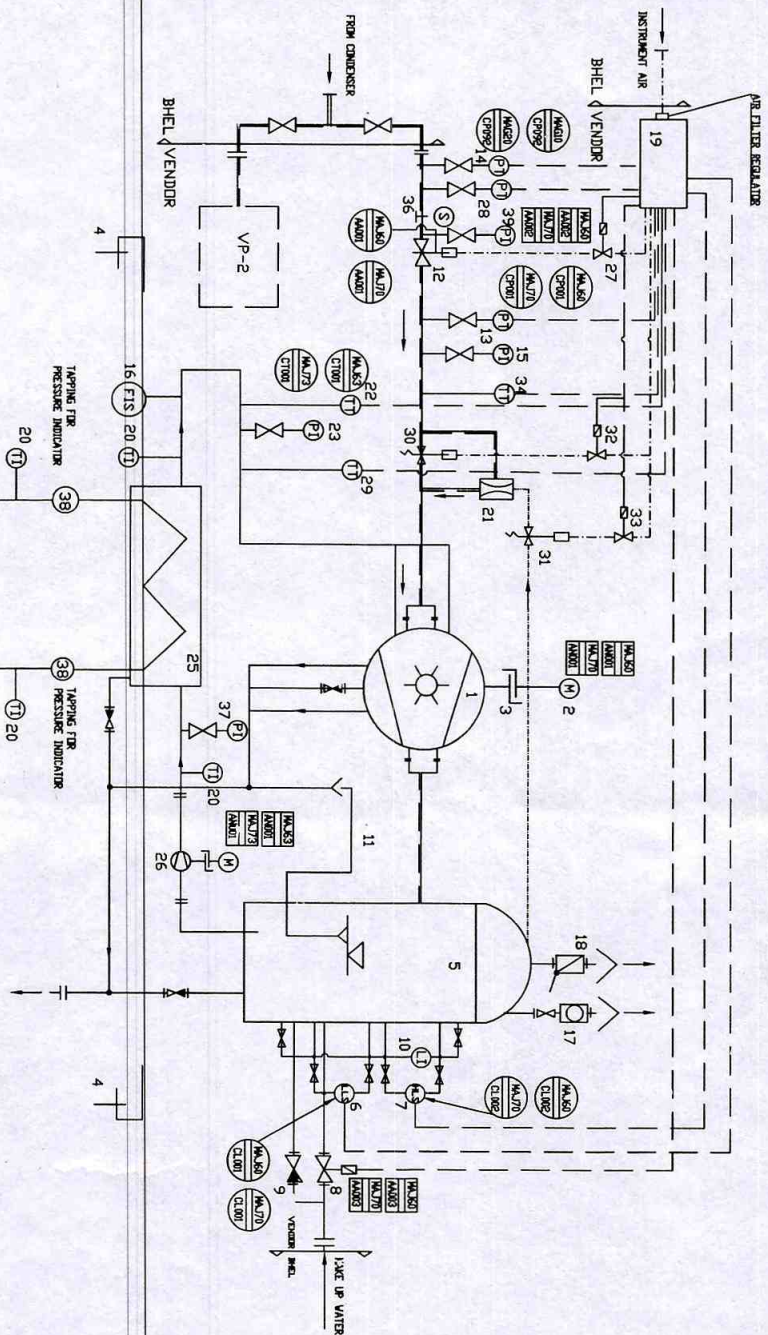
1900/L1191C ON SHAWMO/first angle projection

प्रकार कोण प्रक्षेपण / FIRST ANGLE PROJECTION

सभी आयाम निर्दिष्ट हैं। / ALL DIMENSIONS ARE IN mm.

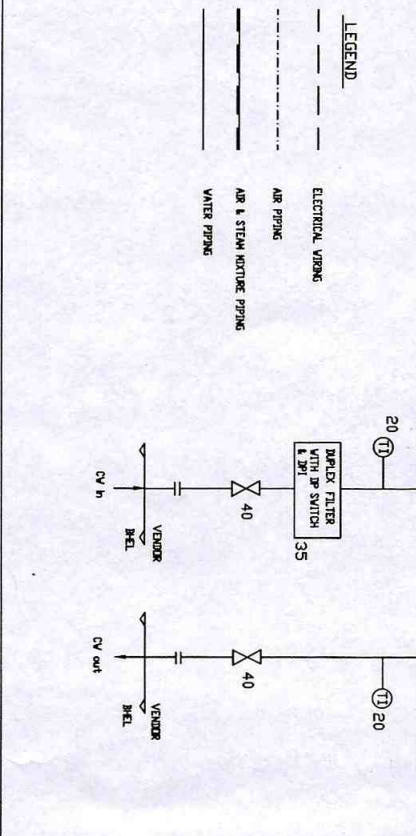
पत्र सं. 88 (2) / FORM 38 (0)

CONDENSER AIR EVACUATION SYSTEM



ITEM DESCRIPTION	
1.	VACUUM PUMP, 2-STAGE (OR 1-STAGE)
2.	MOTOR
3.	COUPLING
4.	FOUNDATION BOLT+NU+WASHER
5.	SEPARATOR
6.	LOW LEVEL SWITCH WITH ISOLATION VALVE
7.	HIGH LEVEL SWITCH WITH ISOLATION VALVE
8.	MAKUP WATER INLET VALVE
9.	MAKUP WATER BYPASS VALVE
10.	LEVEL INDICATOR WITH ISOLATION VALVE
11.	OVERFLOW Siphon 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 COIL INDICATOR
17.	AIR FLOW METER (ROTAMETER)
18.	AIR OUTLET CHECK VALVE WITH HANDLE
19.	TEMPERATURE INDICATOR
20.	TEMPERATURE INDICATOR
21.	EJECTOR (IF APPLICABLE)
22.	TEMP. TRANSMITTER FOR SEAL WATER
23.	PRESSURE INDICATOR WITH VALVE
24.	SOLENOID VALVE (24 V DC)
25.	HEAT EXCHANGER (SHELL & TUBE/PLATE TYPE)
26.	SEAL WATER PUMP WITH MOTOR
27.	SOLENOID VALVE (24 V DC)
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.	MOVIE AIR VALVE FOR EJECTOR (IF APPLICABLE)
32.	SOLENOID VALVE (24 V DC) FOR EJECTOR (IF APPLICABLE)
33.	SOLENOID VALVE (24 V DC) FOR EJECTOR (IF APPLICABLE)
34.	TEMPERATURE TRANSMITTER IN SECTION LINE
35.	BUCKET FILTER WITH OPS & DRI
36.	TEMPORARY INLET SCREEN
37.	PRESSURE INDICATOR WITH VALVE
38.	TAPPING FOR PRESSURE INDICATOR
39.	PRESSURE INDICATOR WITH VALVE
40.	ISOLATION VALVE

समस्त नमूना नम्बर INVENTORY NO.	हस्ताक्षर और दिनांक/SIGN & DATE	संदर्भ नमूना नम्बर REFERENCE DRG. NO.
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उत्पाद का प्रकार या ग्राहक/परियोजना का नाम TYPE OF PRODUCT OR NAME OF CUSTOMER/PROJECT		VACUUM PUMP PACKAGE	
भारत हेवी इलेक्ट्रिकल्स लिमिटेड, राँची, झारखंड BHARAT HEAVY ELECTRICALS LIMITED, RAIPUR, JHARKHAND		श्रीवा SHIVA	
डिप्ट. / CODE		श्रीवा SHIVA	
श्रीवा / TITLE		श्रीवा SHIVA	
P&ID - CONDENSER AIR EVACUATION SYSTEM		श्रीवा SHIVA	
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श्रीवा / TITLE		श्रीवा SHIVA	
P&ID - CONDENSER AIR EVACUATION SYSTEM		श्रीवा SHIVA	

BHEL		MANUFACTURERS NAME & ADDRESS		STANDARD QUALITY PLAN				PROJECT:			
				ITEM: CONDENSER AIR EVACUATION PACKAGE SUB-SYSTEM:				PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL			
QP NO.QA/BI/QP/006 REV.: 06 DATE: 26.10.2018 PAGE: Page 1 of 4		QUANTUM OF CHECK		TYPE OF CHECK		REFERENCE /ACCEPTANCE NORMS		FORMAT OF RECORD		REMARKS	
2.		3.		4.		5.		6.		7.	
8.		9.		10.							

Sr. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	MAJOR	CHEMICAL & MECHANICAL	PER HEAT	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	TC	√	P	V	V	V	NO WELD REPAIR PERMITTED
1.	MAIN PARTS FOR VACUUM PUMP • CASING • IMPELLER • SHAFT	EXAMINATION OF MACHINED SURFACES	MAJOR	MAJOR	CHEMICAL & MECHANICAL	100%	ASME VIII DIV 1 APPENDIX 7	DRAWING/ VENDOR'S STD	DRAWING / DATASHEET	TC	√	P	V	V	V	NO WELD REPAIR PERMITTED
2.	PIPE / FITTINGS (For System Pipe Work)	CHEMICAL & MECHANICAL PROPERTIES	MAJOR	MAJOR	CHEMICAL & MECHANICAL	one sample per heat	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	DRAWING / DATASHEET	COG	√	P	V	V	V	
3.	PUMP BEARINGS	DIMENSIONS MAKE/TYPE and review of supplier test certificates	MAJOR	MAJOR	VISUAL	100%	AS PER APPROVED DRAWING / DATASHEET	AS PER APPROVED DRAWING / DATASHEET	DRAWING / DATASHEET	TC	√	P	V	V	V	
4.	IMPELLER	DYNAMIC BALANCING	MAJOR	MAJOR	BALANCING AT RATED SPEED	100%	ISO 1940	ISO 1940, G6.3	DRAWING / DATASHEET	TC	√	P	V	V	V	
5.	SHAFT	UT TEST	MAJOR	MAJOR	CHECK	100%	ASTM A 388	AA0850118 CAT II	DRAWING / DATASHEET	TC	√	P	V	V	V	
4a.	HEAT EXCHANGER (TUBE / SHELL OR	VISUAL & DIMENSIONAL	MAJOR	MAJOR	MEASUREMENT / VISUAL	100%	VENDOR'S DRAWING	VENDOR'S DRAWING	DRAWING / DATASHEET	-	-	P	-	-	-	

LEGEND: ! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. ! 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 REVIEWED BY APPROVED BY		DOC NO.	
MANUFACTURER/SUB CONTRACTOR Rishi Kumar 27/10/18					

BHEL	MANUFACTURERS NAME & ADDRESS		STANDARD QUALITY PLAN				PROJECT:				
			ITEM: CONDENSER AIR EVACUATION PACKAGE		QP NO.QA/BI/QP/006 REV.: 06 DATE: 26.10.2018 PAGE: Page 2 of 4		PACKAGE: TG CONTRACT NO.: CONTRACTOR: BHEL				
	SUB-SYSTEM:		TYPE OF CHECK		QUANTUM OF CHECK		REFERENCE /ACCEPTANCE NORMS		FORMAT OF RECORD		
Sr. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	5.	6.	7.		8.		9.	
1.	2.	3.	4.	5.	6.	7.		8.		9.	

PLATE TYPE)	CHEMICAL & MECHANICAL PROPERTIES OF TUBES /TUBE SHEET / SHELL	MAJOR	CHEMICAL & MECHANICAL	PER HEAT	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	V	100% UT on shell or tube plate if the thickness is 25mm and above
	EDDY CURRENT TEST ON TUBES	MAJOR	ECT	100%	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	V	As applicable
	SOUNDNESS OF WELD	MAJOR	X RAY OF BUTT WELDS	10%	APPROVED DRAWING / DATASHEET ASME V	APPROVED DRAWING / DATASHEET ASME V	APPROVED DRAWING / DATASHEET ASME VIII DIV 1	TC	✓	P	V	V	As applicable
	HYDRAUSTATIC TEST	MAJOR	PRESSURE TEST SHELL & TUBE SIDES	100%	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	APPROVED DRAWING / DATASHEET	TC	✓	P	V	V	As applicable
5.	MOTOR	MAJOR	VISUAL & MEASUREMENT TEST	100%	IEC 60034 / IEC 34.1 / BES 4999	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			100%					✓	P	V	V	
	TYPE REPORT			100%					✓	V	V	V	

MANUFACTURER/SUB CONTRACTOR	CONTRACTOR <i>Bhish Kumar</i> 27/10/18	LEGEND:		FOR CUSTOMER		DOC NO.	
		RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION.		REVIEWED BY		APPROVED BY	
		M: MANUFACTURER / SUBCONTRACTOR I: INSPECTION AGENCY N: CUSTOMER W: WITNESS AND 'V' VERIFICATION ALL 'W' INDICATED IN COLUMN 'N' SHALL BE 'CHP' OF CUSTOMER					

BHEL		MANUFACTURERS NAME & ADDRESS			STANDARD QUALITY PLAN				PROJECT:			
					ITEM: CONDENSER AIR EVACUATION PACKAGE				PACKAGE: TG			
					SUB-SYSTEM: TYPE OF CHECK				CONTRACT NO.:			
					QUANTUM OF CHECK				CONTRACTOR: BHEL			
Sr. No	COMPONENT / OPERATION	CHARACTERISTICS	CLASS	3.	4.	5.	6.	7.	FORMAT OF RECORD			REMARKS
1.	2.								M	C	N	10.

6.	INSTRUMENTS TEMP / PRESSURE GAUGES	CALIBRATION AND ACCURACY	MAJOR	CALIBRATION	100%	AS PER VENDOR STD / APPROVED DRAWING / DATASHEET	COC	✓	P	V	
7.	PACKAGE ASSEMBLY	HYDROSTATIC TEST	MAJOR	PRESSURE TEST	100%	AS PER APPROVED PERFORMANCE TEST	TC	✓	P	W	W
		PERFORMANCE		CAPACITY &	100%	PROCEDURE, DATA SHEET & DRAWING	TC	✓	P	W	W
		TEST		POWER VS SUCTION							
	PLC			PRESSURE PROGRAMME DEMOSTRATION	100%	AS PER APPD WRITE UP	TC	✓	P	W	W
	NOISE MEASUREMENT VIBRATION			NOISE LEVEL CHECK VIBRATION CHECK	100%	APPROVED DATASHEET	TC	✓	P	W	W
	VISUAL/ DIMENSIONAL			VISUAL / MEASUREMENT	100%	APPROVED DATASHEET	TC	✓	P	W	W

LEGEND:		FOR CUSTOMER		DOC NO.
MANUFACTURER/SUB CONTRACTOR	CONTRACTOR	REVIEWED BY	APPROVED BY	
	RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. 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			

