



BHARAT HEAVY ELECTRICALS LIMITED
HEEP HARIDWAR INDIA-PIN 249403
FAX NO: 0091 1334 226462
PHONE NO: 0091 1334 284658

Tender No.: **T/4300/17/0966N/1**

The Heavy Electricals Equipment Plant (HEEP) located in Haridwar, India is one of the major manufacturing plants of Bharat Heavy Electricals Ltd. The core business of HEEP includes design and manufacture of large steam and gas turbines, turbo generators and so on.

Sealed tenders with the Tender No. and opening date clearly super scribed on the cover are invited from the manufacturers (registered as well as unregistered) for the supply of the following items:-

S. No.	Tender No.	Description of Item	Qty	Delivery Schedule	Opening Date
1	T/4300/17/0966N/1	W93310201015 DRG: 21020160999 REV:00 FORGING FOR IP ROTOR SHAFT ALLOY 617M AS PER TDC NO. TDC-AUSC-IPR-001 ROUGH MACHINED SPEC: ALLOY 617M REV: 00	1 No.	31.01.2018	03.08.2017

1. VENDORS TO QUOTE BEST POSSIBLE DELIVERY.
2. PRE QUALIFICATION REQUIREMENT AS PER ANNEXURE-I.
3. MANUFACTURING PLAN AND TEST SAMPLE LOCATION TO BE SUBMITTED WITH OFFER.
4. QUALITY REQUIREMENT AS PER ANNEXURE III.
5. RELEVANT DRAWING AND DOCUMENTS AS PER ANNEXURE II.

The tender documents can be downloaded from our web site www.bhel.com or www.bhelhwr.co.in or www.tenders.gov.in, after downloading the tender documents from web site, while submitting the tender as detailed in ***"Instruction to Bidders"***, intending vendors must remit tender fee of Rs. 2,000.00 for indigenous vendors (or equivalent amount in foreign currency for foreign vendors) against each tender if documents (in hard copies) are required from BHEL. Vendors must also remit the requisite EMD Rs 2,00,000/- (Rupees Two Hundred thousand only) in the form of Cash (as permissible under Income Tax Act) / Pay Order / Demand draft. In case of foreign bidders e-payment may also be accepted as EMD. **If EMD is not submitted along with offer, then the offer may not be considered.**

Micro & Small Enterprises (MSEs) are exempted from submission of EMD & tender fees. Documents as detailed in GENERAL INSTRUCTIONS AND STANDARD TERMS & CONDITIONS (GISTC) hoisted on our website www.bhelhwr.co.in are to be submitted for availing exemption from submission of EMD & Tender Fees.

Central / State – PSUs / Government departments are exempted from submission of EMD subject to approval by BHEL management.

The date for opening of tender shall be 03.08.2017 Tenders will be received up to **1.45 P.M.** on **03.08.2017** and opened on the same day at 2.00 P.M. in the Tender Room. **Please note that tender received after due date**

& time (1.45 PM on 03.08.2017) will not be REPEAT will not be opened. BHEL will not be responsible for any type of postal / courier delay.

Amendments/Corrigendum, if any, will be hosted on our web site only. Other terms and conditions will be as per tender documents. The total quantity may undergo change at the time of ordering.

Foreign and Indigenous bidders against open tender will necessarily have to obtain class – III DSCs. Procedure for application is available on www.bhel.com.

Documents submitted with the offer/bid by the bidder (original supplier) shall be signed and stamped in each page by authorized representative of the bidder. Documents not signed and stamped in each page by the authorized signatory of the bidder, shall neither be accepted nor considered for evaluation of the bid.

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

Any vendor who is under hold (for the item)/ delisted/ banned with BHEL on date of opening of Part – 1 will not be allowed to quote for this tender. In case their offer is received, it may be outrightly rejected.

Please submit your offer only for the above requirement subject to our **GENERAL INSTRUCTIONS AND STANDARD TERMS & CONDITIONS (GISTC)**. Please visit our site www.bhelhwr.co.in for General Instructions and Standard Terms & Conditions (GISTC) for Tender Enquiries. **All the bidders/vendors must ensure compliance of these GISTC.**

BIDS shall be opened at 2.00 PM on the due date in the presence of authorized representative of the bidders who may like to be present. The authorized representative should bring authority letter from their parent company (Manufacturer) for the specific tender no. attending the bid opening.

Unregistered vendors may please visit our site www.bhel.com for filing up the Supplier Registration Form. Copy of filled Supplier Registration Form (SRF) may be submitted along with the offer.

KINDLY READ “INSTRUCTIONS TO BIDDERS.” QUOTATION NOT IN ACCORDANCE WITH THE INSTRUCTIONS ARE LIABLE TO BE DISQUALIFIED AND IGNORED.

INSTRUCTIONS TO BIDDERS FOR OPEN TENDER

DEFINITION

Registered Vendors - Are those who are registered with BHEL, Haridwar for Megawatt rating/ Size/ Weight of tendered items in respective material grade or machining of such items.

Un-registered Vendors - Are those who are not registered with BHEL, Haridwar for Megawatt rating/ Size/ Weight of tendered items in respective material grade or machining of such items.

ESSENTIAL INSTRUCTIONS

* Un-registered vendors may be approved by BHEL, if found suitable, on the basis of data furnished by them in Supplier Registration Form (SRF) for Foreign Vendors or Indigenous Vendors (as applicable).

* BHEL team may visit the vendor (s) works for verification of capability and capacity claimed in tender documents/offer (s).

* The tenders shall be submitted in three parts in separate sub-envelopes clearly super scribing type of bid, tender no., due date and the name of vendor with full contact details.

❖ Part I –

- Tender fee (if hard copy insisted from BHEL)
- Earnest Money Deposit
- Documents as detailed in GISTC by MSE Supplier for availing benefits intended for MSE suppliers.
- Duly filled Non Disclosure Agreement (Annexure IV)
- Information required as per Prequalifying requirement (Annexure I) and necessary documents.
- Duly filled integrity pact as per Annexure V

❖ Part II –

- Techno- Commercial Bid - it should be replica of price bid (copy of price bid without price part).
- Quality plan in requisite format as per scope of inspection detailed in Annexure III.

❖ Part III –

- Price Bid.

All the sub-envelopes (Part-I, Part- II & Part-III) to be put in a single covering envelope indicating tender no., due date and the name of vendor, e-mail id, with full contact details. Offer should be complete in all respect (i.e. Part-I, Part- II & Part-III). BHEL may decide to ignore the offer in case of submission of incomplete offer.

* Please submit your offer according to General Instructions and Standard Terms & Conditions (GISTC) for Tender Enquiries. Please visit our site www.bhelhwr.co.in for GISTC. All the bidders/vendors must ensure compliance of these GISTC (VERSION: APRIL-16, REV. 00). GISTC (VERSION: APRIL-16, REV. 00) can also be referred by login to B2B Portal for Vendors.

Integrity Pact (IP)

(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. A panel of Independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.

The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial 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.

Details of IEM for this tender is furnished below:

Name Mr. V V R Sastry

Address Ex CMD/ BEL

Email: sastryvvr@gmail.com

(b) 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 the IEM mentioned in the tender.

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. For all clarifications/ issues related to the tender, Please contact:

Name:	Akhil Kumar Gupta	Sachin Mittal
Deptt:	Purchase – Turbine	Purchase - Turbine
Address:	Main ADM HEEP BHEL Haridwar	Main ADM HEEP BHEL Haridwar
Phone: (Landline/ Mobile)	01334-284658	01334-285587
Email:	akgupta@bhelhwr.co.in	sachin_m@bhelhwr.co.in
Fax:	01334-226462	01334-226462

ANNEXURE I

18

Indent No.: T/4300/2017/0966/N

Item: Forging for I. P. Rotor; **Drawing:** 21020160999, Revision 00

Material Grade/Specification: Alloy 617M/TDC-AUSC-IPR-001

Minimum qualification requirement for Indent T/4300/2017/0966/N

Point numbers 1 to 4 are the **Mandatory Qualification Requirements**. Offers of vendors not meeting these requirements will not be considered.

1. Experience Requirement:

Vendor must meet any one of the following experience criteria given below:

- a) Vendor must have manufactured and supplied forging in material grade Alloy 617 or equivalent Nickel alloys of weight ≥ 10 Ton on the enquiry opening date.

In support of above, the vendor has to furnish details of their past supply in format below:

Sl. No.	Weight (kg)	Size Dia x L	Material Grade	Qty.	PO No.	Name & Address of customer	Date of supply

Vendor to submit documentary evidence like copy of unpriced purchase order/test certificates/Non-destructive examination results/shipping documents showing PO number customer name and weight of supplied item etc in support of the above experience.

- b) **In case vendor has experience of supplying weight <10T**, following has to be furnished by vendor to meet the drawing and specification requirements:

- Flow Chart covering size of ingot, handling capacity (manipulator and crane), forging press capacity and heat treatment capacity.
- Flow chart must include sketch with dimension of the forging, weight and reduction ratio achieved at each stage.
- Vendor to submit details of their supply experience as per above format at 1a for Alloy 617 or equivalent Nickel alloys forging. Documentary evidence like copy of unpriced purchase order/test certificates/Non-destructive examination results/shipping documents showing PO number customer name and weight of their maximum delivered weight item etc in support of the above experience are to be submitted.

2. Manufacturing Facilities:

- a) Vendor must have in-house forging and heat treatment facility to manufacture forging of material grade Alloy 617 in enquiry drawing dimension. Details of facility for forging (press capacity, manipulator, crane etc) and heat treatment are to be submitted.
- b) Vendor has to provide details of in-house melting and refining facility (VIM + VAR or VIM+ESR) as per the requirement of TDC-AUSC-IPR-001.

In case in-house melting and refining facility not available, vendor to provide complete manufacturing facility details of their ingot supplier with their experience for material grade Alloy 617. At least one mill test certificate of ingot manufacturer covering size, chemical composition and weight of ingot for material grade Alloy 617 is to be submitted.

3. Testing Facilities:

Vendor to furnish in house testing facilities including NDE to carry out testing as per the requirements of enquiry drawing and specification. In case of outsourcing of any test, vendor to agree to carry out testing at Government accredited labs only.

4. Drawing & Specification Confirmation:

Vendor to confirm supply shall be as per BHEL enquiry drawing and specification. Vendor to sign each page of BHEL specification (TDC-AUSC-IPR-001) and drawing (21020156099) for compliance and submit with offer.

Note: BHEL team may visit vendor's works to verify the documents/facilities details submitted with offer.

BHEL team may witness the forging process, if required. Vendor to confirm their acceptance for the same.

Enquiry No.: T/4300/17/0966N/1

TDC-AUSC-IPR-001

SPECIFICATION FOR ALLOY 617M ROTOR FORGINGS**1.0 GENERAL**

This specification governs the quality of Rotor forgings of grade Alloy 617M

2.0 APPLICATION

For steam turbine rotor forging.

3.0 COMPLIANCE WITH NATIONAL/INTERNATIONAL STANDARDS

Based on VDTUV Data Sheet 485, ASME SB-564 (non-destructive examinations).

4.0 CONDITION OF DELIVERY

Forged, solution annealed and machined condition as per the ordering drawing.

5.0 DIMENSION AND TOLERANCES

Forgings shall be supplied to the dimensions and tolerances as per the ordering drawing.

6.0 MANUFACTURING**6.1 GENERAL REQUIREMENTS**

Before starting the production the manufacturer shall submit a flow chart of the manufacturing sequence for the forging.

6.2 MELTING PROCESS

Alloy 617M shall be produced by using vacuum induction melting (VIM) followed by vacuum arc remelting (VAR) or electro slag refining (ESR). Any other suitable melting and remelting processes shall be used only after approval from the purchaser.

6.3 FORGING PROCESS

Overall forging ratio (ratio of reduction) calculated in accordance with Annexure - I shall be greater than 3. The forging ratio employed shall be included in the test certificates. There shall be sufficient ingot discard to ensure elimination of shrinkage cavities and segregation. A record of ingot weight and discard percentages shall be provided for information purpose. Forgings shall be manufactured as close as practicable to finish shape and size. It is important to maintain the axial center of the forging in common with the axial center of the ingot.

6.4 HEAT TREATMENT

The material shall be supplied in solution annealed condition with heat treatment suitable to provide grain size as per clause 7.2.5. The minimum heat treatment temperature shall be 1100°C. Before starting the quality heat treatment, the



manufacturer shall submit sketch with the dimensions for heat treatment for information. The heat treatment temperature and time shall be recorded and the records shall be made available to the inspection agency.

6.5 MACHINING

The surface condition shall meet the requirements of various non-destructive examinations.

7.0 PROPERTIES AND TESTS

7.1 CHEMICAL COMPOSITION: Heat Analysis in weight%

The material shall conform to the chemical composition (in weight %) limits specified in Table-1. The chemical analysis shall be carried out as per ASTM E-350 or equivalent method.

Table -1: Chemical composition (in weight %) of Alloy 617M

Element	Cr	Fe	Mn	Mo	Co	Al	C	Cu	B	Si	S	N	Ti	Ni
Wt.%	21.0- 23.0	1.5 max	0.3 max	8.0- 10.0	11.0- 13.0	0.8- 1.3	0.05- 0.08	0.05 max	0.003- 0.005	0.3 max	0.008 max	0.05 max	0.3- 0.5	Bal.

7.2 MECHANICAL PROPERTIES

7.2.1 Tangential or Radial Specimens:

The manufacturer shall test tangential or radial test specimens taken from forgings after heat treatment. The location of tensile specimens shall be as per ordering drawing. Test samples shall be taken at least 40mm below the heat-treatment contour.

The following properties shall be achieved at room temperature:

0.2% Proof strength: $\geq 300 \text{ N/mm}^2$

Tensile strength: $\geq 650 \text{ N/mm}^2$

% Elongation (L = 5.65VA) $\geq 30\%$

% Reduction in Area : for information purpose.

Impact (at 20°C) Charpy V Notch: $\geq 120\text{J}$ (average of 3 values with lowest value shall be $\geq 90\text{J}$)

Additionally, tensile test at 720°C to be carried out and report shall be submitted for information.

7.2.2 Axial Core:

An axial core of diameter $\geq 60\text{mm}$ is to be taken out from the location marked in the drawing. The position of the rotor in the forged ingot shall be such that the axial core lies on the top side. Axial trepanned core shall be tested in accordance with Standard no AA0850155. Following properties shall be achieved in the radial direction-

0.2% Proof Stress $\geq 300 \text{ N/mm}^2$,

% Elongation: $\geq 30\%$

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Tensile strength, %Reduction in Area and Impact (3 values) shall be reported for information. The balance axial core sample, duly identified, shall be sent to BHEL along with rotor (preferably kept in axial bore and suitably plugged).

7.2.3 Retest

When mechanical test results do not meet the requirements, retesting can be carried out for the test for which results are not satisfactory. Two retests shall be performed for each unsatisfactory result obtained with specimens taken close to the region from where earlier defective specimens were taken and failing which the part will be rejected.

7.2.4 Re-heat-treatment

The forgings rejected on the basis of unsatisfactory results for one or more mechanical tests may be re-heat-treated, the condition for which shall be described in the test report. All the mechanical tests with the same number of tests specified for the original forging shall be repeated. No more than two re-heat treatment shall be allowed.

7.2.5 Grain Size

Grain size distribution in the forging shall be within the ASTM grain size nos. 2-5. Isolated grain size coarser than ASTM 2 can be accepted but grain size coarser than ASTM 0 is not acceptable

7.3 NON DESTRUCTIVE EXAMINATION

7.3.1 Surface Examination – Surface Defects

Forgings shall be visually examined. Their surface shall be plain, uniform and free from wrinkles, overlaps, tears, cracks and any other injurious defects. After cutting to as-delivered dimensions, the edges shall be visually examined. There shall be no cleavage or lamination. If the above mentioned examinations detect defects in the forgings, they cannot be accepted as it is, and the requirements of section 7.3.4 and 11.0 of this specification shall apply.

7.3.2 Liquid Penetrant Inspection

Each forging shall be subjected to 100 % liquid penetrant inspection. The test procedure and acceptance shall be as per supplementary requirements stated in ASME SB-564.

7.3.3 ULTRASONIC EXAMINATION

Each forging shall be subjected to 100% ultrasonic examination by longitudinal wave technique. The test procedure shall be as per supplementary requirement stated in ASME SB-564 except that the flat – bottomed reference hole of 4 mm diameter shall be the acceptance criteria for radial. The examination shall be axially on both the sides and circumferentially. Indication observed if any, in the axial shall be reported for information. The examination shall also be carried out with bottomed reference hole of 1.5 mm diameter and indications, if any, shall be reported for information.


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ANNEXURE II

7.3.4 Removal of Unacceptable Areas

Small surface defects may be removed by grinding or chipping provided the thickness remains locally within the part tolerances. The supplier may propose removing larger defects by the same method. In this case, the supplier shall present a report to the purchaser giving a detailed description of the detected defects (location, size, seriousness). This proposal shall be accepted only if the purchaser judges the remaining thickness to be sufficient with the safety coefficients applied to the equipment design taken into account. No weld repairs are acceptable.

7.4 DIMENSIONS & TOLERANCES

Dimensions and tolerances shall be as per purchase order / ordering drawing.

8.0 MARKING

The supplier shall mark each forging with identification number. This is to be punched on the front face of the forging (as marked in the respective drawing), at reference clock position 12 and is to be bordered with oil paint. This shall be confirmed with authorized work inspector's stamp next to the identification number

9.0 DOCUMENTATION:

The supplier shall furnish 4 copies of test certificates unless and otherwise stated on the order. The test certificates shall bear the following information:

Purchaser's Reference:

- a) Purchase order number
- b) Drawing number
- c) Specification number

Supplier's Reference:

- a) Name of supplier
- b) Material designation
- c) Melt Number, melting & refining process
- d) Details of ingot & forging process: Dimension, ingot weight, forging process and Forging reduction ratio.
- e) Details of heat treatment, method of cooling, actual time and temperature sequence, soaking time, cooling conditions (cooling rate)

Test Results:

- a) Melt analysis & check analysis along with tramp elements.
- b) Mechanical test results (all individual values & test piece locations are to be indicated).
- c) Results of Residual stress measurement.
- d) Results of Liquid penetrant examination.
- e) Ultrasonic examination results (type of instrument, test probe, adjustment

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ANNEXURE II

and test sensitivity are to be mentioned).

f) Dimensional data sheet about the dimensional inspection.

10.0 CLEARANCE FOR DELIVERY:

The entire results of test performed are deciding factors for the clearance of the delivery. The purchaser shall evaluate the total results with respect to intended operational requirements for the forging and judge accordingly the permissibility of deviations (if any) of the properties of the piece required.

The clearance does not relieve the manufacturer from the responsibility for hidden impermissible defects, which may be found later on.

11.0 DEVIATIONS:

Deviations from this Purchase Specification (if any), which may arise during manufacturing, shall be submitted to the purchaser in writing giving full details of the deviations. Acceptance of concession request will be at the sole discretion of the purchaser.

12.0 PACKING & DISPATCH:

Before dispatch, the forging shall be suitably packed to prevent corrosion and damage during transit.

Each forging shall be coated with oil, covered with polythene sheets and waterproof paper and then packed in a sea-worthy export wooden crate. Shipment of forgings shall be done after conducting all tests as mentioned above in the presence of purchaser's authorized representative and after all the test reports are scrutinized by the purchaser and accepted. Shipment of the forging shall be made only after obtaining the written "Shipment Release" from the purchaser.

13.0 CROSS REFERRED STANDARDS

VD TUV Data Sheet 485, ASME SB-564, ASTM E-350, AA0850155

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FORGING RATIO**A.1 Definitions**

The forging direction is the direction, in each portion of the forged part, in which the forging operations produces maximum elongation. The part is said to be forged either in a longitudinal or transverse direction depending upon whether this direction is parallel or perpendicular to the ingot axis. As a rule, the forging ratio represents, for each portion of the part, the ratio between the lengths of an element of the metal, measured parallel to the forging direction, after and before forging operation.

A.2 Overall Reduction Ratio

The longitudinal reduction ratio of the forged part is equal to the product of the longitudinal reduction ratios for each successive forging operation. The overall ratio of reduction is equal to the product of the longitudinal reduction ratio and the transverse reduction ratio. For plate, this ratio is equal to the ratio between the thickness of the ingot and the final thickness of the plate.

A.3 Parts Fabricated by Upsetting or Flattening

The reduction ratio for upsetting or flattening by application of a load parallel to the axis of the ingot, is equal to the ratio between the cross section of the forging after and before the upsetting or flattening operation, or to the ratio between the thickness of the forging before and after the upsetting or flattening operation. By convention, the overall ratio of reduction of a part is the product of the individual reduction ratio and the square root of the longitudinal reduction ratio of the blank prior to upsetting or flattening. If during the forging operation, the blank is subjected to an intermediate upsetting operation, the reduction ratio for the upsetting operation shall not be included in the overall reduction ratio.

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Harjan
(H. S. S.)

Palham
(G. Krishnam)

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ON DRAWING

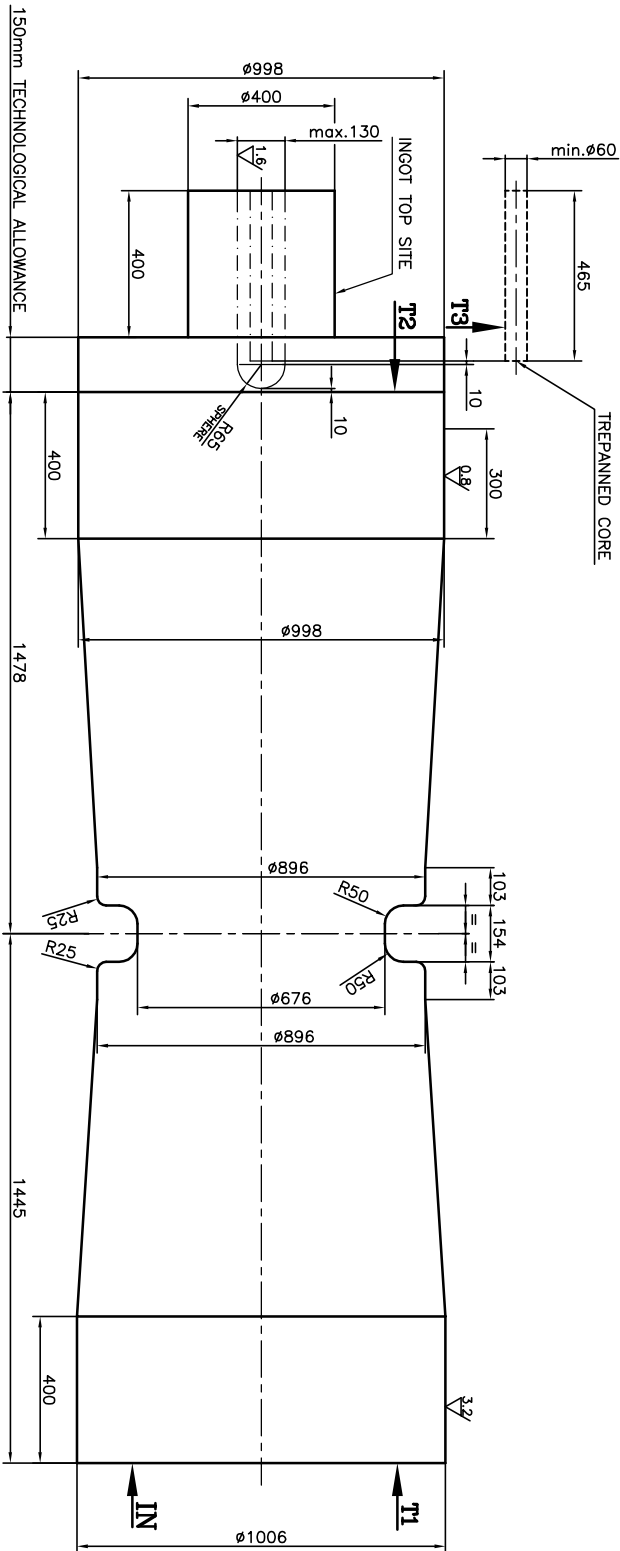
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN mm)

2

FORM DS-44(B)

ANNEXURE II



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TECHNICAL REQUIREMENTS:-

1. FORGING SHALL BE SUPPLIED IN MATERIAL GRADE ALLOY 617M AS PER TDC-AUSC-IPR-001.
2. PERMISSIBLE TOLERANCES :-
ON INSIDE DIMENSION: -1.
ON OUTSIDE DIMENSION: +1.
3. DRAWING NUMBER, MATERIAL GRADE, SUPPLIERS REFERENCE, PURCHASE ORDER NO. HEAT NUMBER ARE TO BE PUNCHED AT LOCATION MARKED WITH **IN** AND SUITABLY MARKED WITH PAINT.
4. TANGENTIAL SAMPLE FROM LOCATION MARKED WITH **T1** AND **T2** SHALL BE TAKEN FOR MECHANICAL TESTING. AT LOCATION **T3** VENDER PROVIDE PROLONGATION (± 40mm) FOR TEST SAMPLE.
5. RADIAL SAMPLE TO BE TAKEN FROM LOCATION MARKED WITH **T3** FOR MECHANICAL TESTING. BALANCE AXIAL CORE SHALL BE SENT TO BHEL ALONG WITH FORGING.
6. FORGING SHALL BE SUITABLY PACKED TO PREVENT CORROSION AND DAMAGE DURING TRANSIT.

ITEM NO.	DESCRIPTION	QTY	DRAWING NO.	VAR	MATERIAL SPECIFICATION	UNIT	WEIGHT	QTY
1	FORGING FOR I.P. ROTOR	2	2-10201-60999		TDC-AUSC-IPR-001	18667	00	

GRADE OF UNTOL.DIM	APPROVED	SIGN	DATE
M/CG.-C/M/F AA0230208	SITE-TB	PRK/AM/MS	sd/- 13.06.17
WELDING-A/B/C/D AA0621104	SITE-TM	RAJESH KUMAR	sd/- 13.06.17
GAS CUTTING-T3 AA0621101	WT	WAMAN KISHOR	sd/- 13.06.17
		JETENDER KUMAR	sd/- 13.06.17

TYPE OF PRODUCT	OR	NAME OF CUSTOMER/PROJECT	STATUS OF DRG	DATE
STEAM TURBINE		BHARAT HEAVY ELECTRICALS LTD.		
		RANIPUR, HARDWAR		

DEPT	MTE	SCALE	WEIGHT (KG)	REF. TO ASSY. DRG.	ITEM NO. OF
4300		1:10	18667.00	-	75 77

TITLE :	CARD	DRAWING NO.	DATE
FORGING FOR I.P. ROTOR	2-10201-60999	22.23.24	

Inventory No	Sign & Date	Ref.Drawing No
--------------	-------------	----------------

REV	DATE	ALTERED	CHECKED
8			

REV	DATE	ALTERED	CHECKED
7			

REV	DATE	ALTERED	CHECKED
6			

REV	DATE	ALTERED	CHECKED
5			

REV	DATE	ALTERED	CHECKED
4			

REV	DATE	ALTERED	CHECKED
3			

SIZE A2



CORPORATE STANDARD

AA 085 01 55

Rev. No. 00

PAGE 1 OF 6

TESTING OF THE AXIAL AND TANGENTIAL CORES FROM SHAFTS AT THE SUPPLIER

1. Scope

This testing procedure is valid for all generator and turbine shafts with axial / tangential cores.

2. Referenced documents

DIN 50125, DIN EN 10045-1

3. Inspection personnel

Inspections and correction of the punching is only allowed for qualified and named personnel.

4. Axial core

4.1 Time for taking

If there are during the internal UT at the supplier after quality heat treatment in the area of axial cores no indications and other deviations the tangential core can be taken. At shafts with before tested tangential cores the fulfilment of the requirements is an additional for taking.

4.2 Taking

The location of the axial core in the shaft and the diameter or the length is given in the order drawing. At E- turbines the axial cores are to be taken from the HP- and LP- part. The diameter of the core has to be min. 60 mm to realize a radial specimen location.

4.3 Splitting up

The splitting up of the axial core and the location of the specimens are given in attachment 1. The splitting up at shafts without an over forging (e.g. generator shafts, LP- shafts) begins 200 mm from the body end, applied to the heat treatment contour. Shafts with an over forging (e.g. HP-, MP- shafts) will be splitted up directly from the body end.

The location of the axial core in the shaft applied to the heat treatment dimensions, the distance to the body end and the beginning of the splitting up are to be confirmed in the dimension sketch.

4.4 Inspections and tests

Revisions :

Cl. 33.1.0 of MOM of FC&F+HTM

APPROVED :

INTERPLANT MATERIAL RATIONALISATION
COMMITTEE-MRC (FCF+HTM)

Rev. No. 00

Amd.No.

Reaffirmed:

Prepared

Issued

Dt. of 1st. Issue

Dt:

Dt :

Year :

HARIDWAR

Corp. R&D

FEB. 2008

AA 085 01 55	CORPORATE STANDARD	
Rev. No. 00		
PAGE 2 OF 6		

4.4.1 Tensile test

At a tensile test specimen acc. to *DIN 50125, type B* (B6 x 30) shall be tested at room temperature: RP 0.2 [N/mm²], Rm [N/mm²], A5 [%], Z [%].

4.4.2 Notched-bar impact test

The notched-bar impact test is to be carried out at Charpy-V specimens acc. to *DIN EN 10045- 1*. With the 8 Charpy-V-specimens will be determined the FATT at 50% ductile crack and the FATT at 100% ductile crack.

The testing temperatures are given in attachment 2. One temperature can be choosen free for better confirmation of the upper shelf or the FATT. The single results are to be shown in an AV-T diagramm.

4.4.3 Chemical composition

At the specimens to be taken for analysis, the elements required in the material specification, including the trace elements, are determined quantitatively.

4.4.4 Approval with the purchaser

The purchaser carries out a reduced approval. After the testing of the supplier specimens one tensile specimen and two Charpy-V specimens (attachment 1) are to be prepared for testing in the connection with the UT- approval. The testing temperatures of the both Charpy-V specimens are given in attachment 2.

4.4.5 Storage/ Saving

The remainder of the axial core and of the tested specimens are to be clearly marked (to the body side) and are to be stored at the supplier for one year.

5. Tangential core

5.1 Time for taking

If there are during the internal UT at the supplier after quality heat treatment in the area of the tangential core no indications and other deviations the tangential core can be taken.

5.2 Taking

The location of the tangential core is given in the order drawing. The diameter of the core has to be min. 26 mm for taking two Charpy- V specimens lying one on top of the other.

5.3 Splitting up

The splitting up of the tangential core and the location of the specimens are given in attachment 3.

5.4 Inspections and tests

5.4.1 Tensile test

At a tensile test specimen acc. to *DIN 50125, type B4* (B6 x 30) shall be tested at room temperature: RP 0.2 [N/mm²], Rm [N/mm²], A5 [%], Z [%].



CORPORATE STANDARD

AA 085 01 55

Rev. No. 00

PAGE 3 OF 6

5.4.2 Notched-bar impact test

The notched-bar impact test is to be carried out at Charpy-V specimens acc. to *DIN EN 10045-1*. With the 8 Charpy-V-specimens will be determined the FATT at 50% ductile crack and the FATT at 100% ductile crack.

The testing temperatures are given in attachment 4. One temperature can be chosen free for better confirmation of the upper shelf or the FATT. The single results are to be shown in an AV-T diagramm.

5.4.3 Storage/ Saving

The remainder of the tangential core and of the tested specimens are to be clearly marked and are to be stored at the supplier for one year.

6. Deviations

Any deviation has to be reported by the purchaser immediatly using the deviation report of the technical purchasing specification.

7. Results and releases

The results of the tests, including the AV-T- diagram with the FATT, are to be reported immediatly by the purchaser. The machining can continue, if all requirements are fulfilled.

The official release will give after the approval in presence of the purchaser or representative.

AA 085 01 55

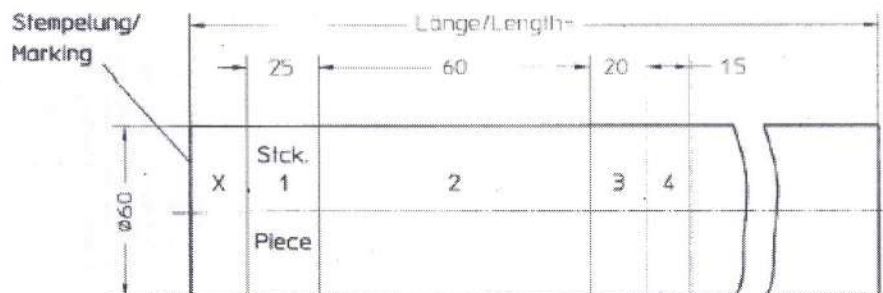
Rev. No. 00

PAGE 4 OF 6

CORPORATE STANDARD



Annexure-1

shaft without prolongation

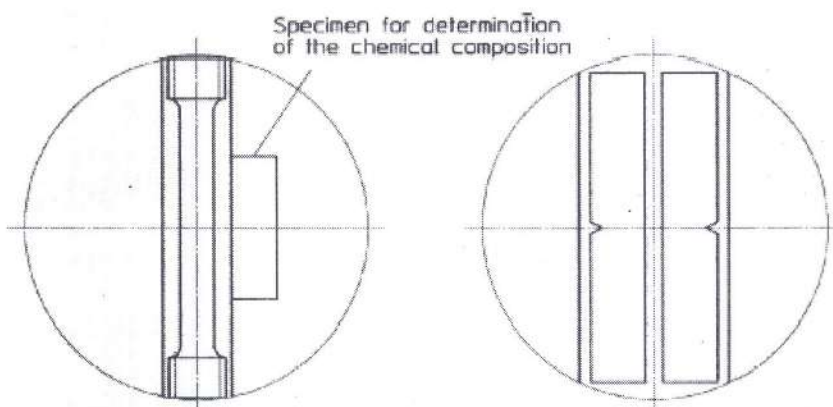
Amm long section has been taken out X mm before test piece No.1 to reach the required distance of 200mm (measured from the body)

shaft with prolongation

Splitting up with piece 1

Piece 1,4

Piece 2,3

Supplier Testing

1 Tensile test specimen B6x30 acc. to DIN50125...../1

Supplier Testing

8 Charpy-V-notch specimens acc. to EN 10045-1...../2.1-2.8

Testing together with the purchaser

1 Tensile test specimen B6x30 acc. to DIN50125...../4

Testing together with the purchaser

2 Charpy-V-notch specimens acc. to EN 10045-1...../3.1-3.2



CORPORATE STANDARD

AA 085 01 55

Rev. No. 00

PAGE 5 OF 6

Testing temperatures for the axial core inspection

Annexure-2

Material	30 CrMoNiV 511	26 NiCrMoV 14 5	26 NiCrMoV 14 5	23 CrMoNiWV 8 8	23 CrMoNiWV 8 8	23 CrMoNiWV 8 8	X12CrMoWVNbN 1011
Design group	HP, IP, K - rotor forgings	Ge-rotor forging	LP-rotor forging	HP, IP, K - rotor forgings	E-rotor forging HP-part	E-rotor forging LP-part	HP-, IP- rotor forgings
Specification	FATT <= 80°C 3 specimens at 80°C	FATT <= -10°C 3 specimens at RT	FATT <= -30°C 3 specimens at RT	FATT <=50°C 3 specimens at 50°C	FATT <=50°C 3 specimens at RT	FATT <=25°C 3 specimens at RT	FATT for information 3 specimens at RT
Testing temperature	20°C 40°C 60°C 80°C (FATT 3 specimens) 100°C 1 testing at any temperature	- 80°C - 60°C - 40°C - 10°C FATT 20°C (3 specimens) 1 testing at any temperature	- 100°C - 70°C - 50°C - 30°C FATT 20°C (3 specimens) 1 testing at any temperature	- 20°C 0°C 20°C 50°C (FATT 3 specimens) 80°C 1 testing at any temperature	-20°C 0°C 20°C (3 specimens) 50°C FATT 80°C 1 testing at any temperature	0°C 10°C 20°C (3 specimens) 25°C FATT 40°C 1 testing at any temperature	-20°C 0°C 20°C (3 specimens) 40°C 80°C 1 testing at any temperature
Inspection	2 specimens at 80°C	2 specimens at 20°C	2 specimens at 20°C	2 specimens at 20°C	2 specimens at 20°C	2 specimens at 20°C	2 specimens at 20°C

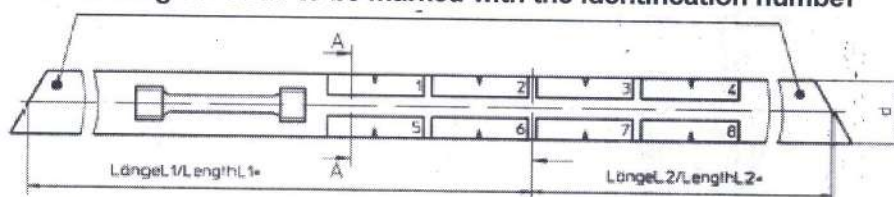
Annexure-3

Quality heat treatment
Diameter D:



Tangential core
marking parallel to
the rotor forging axis

Remaining core has to be marked with the identification number



- 1 Tensile test specimen B10X50 acc. To DIN50125
8 Charpy-V-notch specimens acc. To EN 10045-1

A-A



Notch of specimen parallel to tangential
core marking

3

ANNEXURE II

AA 085 01 55	CORPORATE STANDARD	
Rev. No. 00		
PAGE 6 OF 6		

Annexure-4

Testing temperatures for the tangential core inspection			
Material	23 CrMoNiWV 8 8	26 NiCrMoV 14 5	26 NiCrMoV 14 5
Design group	E- rotor forging	LP- rotor forging	LP- rotor forging
Specification	Tangential core FATT δ 45°C 3 specimens at 20°C	Tangential core ϵ 200 mm from outside FATT δ - 20°C 3 specimens at 20°C	Tangential core ϵ 300 mm from outside FATT δ 0°C 3 specimens at 20°C
Testing temperature	- 20°C 20°C (3 specimens) 45°C (FATT) 60°C 80°C (100% ZB) 1 testing at any temperature	20°C (3 specimens) 0°C - 20°C (FATT) - 40°C - 60°C 1 testing at any temperature	20°C (3 specimens) 0°C (FATT) - 20°C - 40°C - 60°C 1 testing at any temperature

ANNEXURE III

1. VENDORS TO SUBMIT QUALITY PLAN IN ENCLOSED FORMAT ALONG WITH OFFER FOR BHEL REVIEW AND APPROVAL.
2. QUALITY PLAN SHALL BE IN LINE WITH ORDERING DRAWING & SPECIFICATION.
3. FOR FOREIGN VENDORS INSPECTION BY THIRD PARTY INSPECTION AGENCY (LRS/BV/TUV) AS PER BHEL APPROVED QUALITY PLAN. VENDORS TO QUOTE THIRD PARTY INSPECTION AGENCY CHARGES IN THEIR OFFER AND THE SAME SHALL BE TO VENDORS ACCOUNT.
4. FOR INDIAN VENDORS INSPECTION BY BHEL NOMINATED AGENCY 'TUV' AS PER BHEL APPROVED QUALITY PLAN. PRICE SHALLBE LOADED AS DETAILED IN GISTC ON ACCOUNT OF THIRD PAORTY INSPECTION.

ANNEXURE III

MANUFACTURER'S NAME AND ADDRESS				QUALITY PLAN				TO BE FILLED BY BHEL			TO BE FILLED BY BHEL		
BHEL	VENDOR'S NAME	ITEM			QP NO.								
					REV								
					DRG. NO.	AS PER PO							
					SPEC.	AS PER PO							
		REV			Page 1 of 1								
SL. NO.	COMPONENT & OPERATIONS	CHARACTERISTICS	CLASS	TYPE OF CHECK	QUANTUM OF CHECK	REFERENCE DOCUMENT	ACCEPTANCE NORMS	FORMAT OF RECORDS	AGENCY M B N		REMARKS		
1	2	3	4	5	6	7	8	9	D	10	11		

[illegible]

MANUFACTURER/SUBCONTRACTOR		LEGEND: ! RECORDS IDENTIFIED WITH 'TICK' SHALL BE ESSENTIALLY INCLUDED BY CONTRACTOR IN QA DOCUMENTATION. M: MANUFACTURER / SUBCONTRACTOR B: BHEL / 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 USE	APPROVED BY

ANNEXURE - IV

NON-DISCLOSURE AND PROPRIETARY INFORMATION AGREEMENT

BETWEEN

_____(Name of the Vendor),, having its registered offices in
_____(Address of Vendor), registered under the no.
of the Companies' register of _____(Name of Place and Country),
capital stock of _____(Value), with a place of business in
_____(Name of Place and Country) (hereinafter referred to as
"_____(Name of Vendor)");

AND

Bharat Heavy Electricals Ltd a company incorporated under the Indian Companies Act 1956 having its registered offices at BHEL House, Siri Fort, New Delhi -110 049 and having one of its works at Heavy Electrical Equipment Plant, Ranipur, Haridwar-249403 (Uttarakhand), India registered under the No. 4281 of 1964-65 of the companies register of Delhi, capital stock of Rs 4895.2 million with a place of registered office in New Delhi (hereinafter referred to as “BHEL”) hereinafter also referred to individually as “the Party” or collectively as “the Parties”.

BACKGROUND

This Agreement sets forth the rights and obligations of the Parties with respect to the use, handling, protection and safeguarding of Proprietary Information that is disclosed by and between the Parties.

WHEREAS

A) the Parties wish to pursue exploratory discussions concerning a possible collaboration between them in relation to the Program defined in Exhibit 1;

B) during the ensuing discussions and negotiations it may occur that either Party discloses to the other technical, financial or business information of a proprietary or confidential nature, which the Parties intend to protect against, making it available, by any means to any third person, and other unauthorized use and/or further disclosure by the recipient, in accordance with the terms and conditions set forth herein;

NOW, THEREFORE, the Parties have agreed as follows:

1. The term “Proprietary Information” shall mean any information or data of whatsoever kind of a confidential or proprietary nature, including but not limited to, commercial information, know how and technical information in the form of designs, drawings, concepts, requirements, specifications, software, interfaces, components, processes, or the like, that have been or will be disclosed by either Party to the other pursuant to this Agreement, either in writing, orally or other form, which is designated as “Proprietary” or “Confidential” by the disclosing Party by means of formal declaration or an appropriate stamp, legend or any other written or orally notice .
2. Proprietary Information may be conveyed, without limitation, through any written or printed documents, samples, models, electronic form on disk, tape, other storage media or any other means of disclosing such Proprietary Information that either Party may elect to use during the life of this Agreement, but if an originating Party originally discloses information orally or visually, the receiving Party will protect such information as Proprietary Information to the extent that the originating Party :
 - identifies the Information as Proprietary at the time of original disclosure,
 - summarizes the Proprietary Information in writing .

ANNEXURE IV

Information stored in electronic form on disk, tape, other storage media will be adequately marked if a proprietary legend displays when the information originally runs on a computer system and when the information is printed from its data file.

Proprietary Information also includes any information which can be obtained by examination, testing or analysis of any hardware or material substance or any component part of such hardware or material substance provided by the Disclosing Party even though the requirements in Clause 1 for marking and designation have not been fulfilled.

3. Each Party, to the extent of its rights to do so, shall disclose to the other only the Proprietary Information which the disclosing Party deems appropriate to fulfil the objectives of this Agreement. The Parties hereby represent that the disclosure of Proprietary Information by and between themselves shall be made in compliance with, and subject to the laws and regulations of the Disclosing Party's country.
4. The receiving Party hereby agrees and covenants that, from the effective date of this Agreement until the expiry date as per article 11 and the following period as per article 12, the Proprietary Information that either Party receives from the other shall:
 - a) be protected and kept in strict confidence by the receiving Party which must use the same degree of care it uses to protect its own confidential information and in no case less than a reasonable care;
 - b) be only disclosed to and used by those persons within the receiving Party's organization or that of its parent or controlled companies who have a need to know and solely for the purposes specified in this Agreement, and be treated by such persons or entities with the same degree of care and subject to the same restrictions;
 - c) to procure that each third party to whom Proprietary Information is disclosed under this Agreement is made aware of the provisions of this Agreement prior to such disclosure to it and that each such third party is

ANNEXURE IV

bound by obligations of confidentiality which are no less onerous than those contained in this Agreement;

- d) neither be disclosed nor caused to be disclosed or made available, either directly or indirectly, to any third Party or persons other than those mentioned in subparagraph b) above or other persons upon which both of the contractual Parties shall agree in an amendment to this Agreement;
- e) not to copy, reproduce or reduce to writing any part of such Proprietary Information except as may be reasonably necessary for the purpose referred to in the Recitals of this Agreement

PROVIDED THAT the Receiving Party shall be entitled to make any disclosure required by court order or government or regulatory requirement of the Disclosing Party's Proprietary Information subject to notifying the Disclosing Party as soon as possible of such requirement

- 5. Any Proprietary Information and copies thereof disclosed by either Party to the other shall remain the property of the disclosing Party and shall be immediately returned or destroyed by the receiving Party upon request.
- 6. The receiving Party shall have no obligations or restrictions with respect to any Proprietary Information for which the receiving Party can prove that:
 - a) is in or which comes into the public domain otherwise than as a result of a breach of this Agreement by any person to whom a disclosure of Proprietary Information is made as permitted under this Agreement or of any other duty of confidentiality relating to the Proprietary Information of which the Receiving Party has knowledge; or
 - b) it has been in its possession without restriction at the time of the disclosure, as evidenced by written documentation in its files; or
 - c) it has been lawfully received from a third Party without breach of this Agreement; or

ANNEXURE IV

- d) it has been or is published without violation of this Agreement; or
 - e) it has been independently developed in good faith by employees of the receiving Party who did not have access to the Proprietary Information; or
 - f) it has not been properly declared, designated or confirmed as Proprietary or Confidential; or
 - g) the protection period has expired according to articles 11 and 12 of this Agreement.
7. With respect to any exchange of Proprietary Information which may occur as a result of this Agreement, it is expressly understood and agreed that the persons listed in Exhibit 2 shall, on behalf of the respective Parties, be the exclusive individuals authorized to receive from and transmit to the other Party Proprietary Information under this Agreement. Each Party may replace at any time its respective authorized individuals identified in such Exhibit 2, within its own organization. Any such new designation by a Party shall be made by written notice to the other at the address indicated in such Exhibit 2.
8. Any Proprietary Information which is identified as “Classified Information”, or whose export is subject to an export license, shall be identified as such by the disclosing Party at the time of disclosure and the disclosure, protection, use and handling thereof, shall remain subject to the security procedures and restrictions imposed by the disclosing Party's Government.
9. The disclosure of Proprietary Information under this Agreement by either Party to the other shall not be construed as granting to the receiving Party any right, whether express or implied by licence or otherwise, on the matters, inventions or discoveries to which such information pertains, or as granting any trademark, patents, copyrights, trade secret right or other form of intellectual property right.

ANNEXURE IV

10. Nothing in this Agreement may be construed as an obligation of either Party to disclose any Proprietary Information to the other, or to enter into any subsequent contractual relationship with such other Party.
11. This Agreement covers the exchange of Proprietary Information which may be made by either Party to the other until ten years from signing of the agreement or any extension thereto which may be agreed upon by the Parties in writing. Proprietary information relevant to the Program detailed in Exhibit 1, already made available to the other contractual Party before the effective date, shall also be protected under this Agreement.

It is understood by the parties that, prior to disclosure, the Disclosing Party shall have obtained any government authorisation needed for the export of the Proprietary Information

12. The expiry of the period contemplated in Article 11 of this Agreement shall not relieve the receiving Party from complying with the obligations imposed by Article 4 here above with respect to the use and protection of the Proprietary Information, received prior the date of such expiry, for a period of ten (10) years after such expiry.
13. The Parties are independent contractors. Each will bear all costs and expenses in connection with this Agreement. This Agreement is intended to facilitate only the exchange of Proprietary Information and is not intended to be, and shall not be construed to create a teaming agreement, joint venture, association, partnership, or other business organisation or agency arrangement and no Party shall have the authority to bind the other without the other Party's separate prior written agreement .
14. This Agreement shall be governed by and shall be interpreted in accordance with the substantive federal laws of Switzerland excluding it's choice of law rules.

ANNEXURE IV

Irrespective of the foregoing each Party shall remain bound by the provisions of its own national laws and regulations with respect to the transfer or use of Classified Information or information whose export is subject to an export license.

15. All disputes among the Parties, in connection with or arising out of the existence, validity, construction, performance and termination of this Agreement (or any terms thereof), which the Parties are unable to resolve among themselves, shall be finally settled by an Arbitration. The Arbitration shall be held in Geneva (CH) in English language, in accordance with the rules of the ICC – International Chamber of Commerce by three arbitrators appointed in accordance with said rules.
16. The foregoing constitutes the entire Agreement among the Parties with respect to the subject matter hereof and supersedes and cancels all prior representations, negotiations, commitments, undertakings, communications, either oral or written, acceptances, understandings and agreements among the Parties with respect to or in connection with any of the matters to which such Agreement applies or refers.
17. Notices to _____ (**Name of Vendor**) shall be made at the following address:

(Complete Address of Vendor)

Attention: Mr. _____ (**Name of the Authorised Person of Vendor**)

Notices to BHEL shall be made at the following address:

BHARAT HEAVY ELECTRICALS LIMITED,

HEAVY ELECTRICAL EQUIPMENT PLANT,

Ranipur, Haridwar-249403 (Uttarakhand), India

Attention: Shri B.M.Bansal, General Manager- Materials Management

18. The effective date of this Agreement shall be the date of the last signature appearing herein.

ANNEXURE IV

IN WITNESS WHEREOF, each of the Parties has caused this Agreement, to be executed by its duly authorized officer.

Date :

Signed for and on behalf of

Signed for and on behalf of

(Name of Vendor)

BHEL

By:

By:

Title:

Title:

Signature:

Signature:

to the

NON-DISCLOSURE AGREEMENT

between

_____ **(Name of Vendor)**

and

BHARAT HEAVY ELECTRICALS LIMITED

dated:

The Non Disclosure Agreement covers the exchange of Proprietary Information which may occur during the discussions and negotiations in view of a possible cooperation between the Parties in the following programs:

-Description of Material or Services for which the order is placed

_____ **(Name of Vendor)** list of products that require an exchange of Proprietary Information which may be occur during the discussions and negotiations in view of a possible cooperation for the above programs :

ANNEXURE V

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi – 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved

ANNEXURE V

in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelization in the bidding process.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 The Bidder(s)/ Contractor(s) will, when presenting his bid, disclose any and all payments he has made, and is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors". framed by the Principal.

Section 4 – Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

Section 5 – Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-contractors

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 – Criminal Charges against violating Bidders/ Contractors /Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 –Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

ANNEXURE V

- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the

ANNEXURE V

Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

ANNEXURE V

10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

(Office Seal)

For & On behalf of the Bidder/ Contractor

(Office Seal)

Place-----

Date-----

Witness: _____

(Name & Address) _____

Witness: _____

(Name & Address) _____
