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NAVARATNA
COMPANY

सामग्री प्रबन्धन (क्रय विभाग)
MATERIAL MANAGEMENT (PURCHASE)
सेन्दुल फाउन्ड्री फोर्ज प्लांट, भारत हवी इलेक्ट्रिकल्स लिमिटेड
CENTRAL FOUNDRY FORGE PLANT, BHEL HARDWAR
रानीपुर, हरिद्वार (भारत)
RANIPUR, HARIDWAR (INDIA) - 249403
Phone No. +91-1334-285326/284548, FAX No. 225892
e-mail : akaithal@bhelhwr.co.in & satul@bhelhwr.co.in

M/S

Sub: Tender Enquiry No: FF/PPX/4409/P/920/7/6104V1 DT 15/01/2008 Due on 14th Mar 2008.
Dear Sir,

We are pleased to invite offer as per enclosed specifications, drawings with terms and conditions in sealed covers for the under mentioned items.

SI No	Tender No	Description of Material	Qty No	Date & Time of Opening
01	4409/P/920/7/6104V/1	1.FF1934096059 DRG:Q-H.P.-500-1 H.P.ROTOR FORGING(500MW) Processed up to Pre Quality Treatment Stage . SPEC:FF04044 REV .00	02	14 th MARCH 2008 2:00 PM TECHNO COMMERCIAL BID
		2.FF1934096067 DRG:Q-I.P.-250-1 I.P.ROTOR FORGING(250MW) Processed up to Pre Quality Treatment Stage SPEC:FF04044 REV .00	02	
		3.FF1934096083 DRG:Q-IP-500-1 I.P. ROTOR 500MW Up to Pre-Quality Treatment Stage SPEC:FF-04044	01	

KINDLY READ TERMS AND CONDITIONS. OFFER NOT IN ACCORDANCE WITH THE INSTRUCTIONS IS LIABLE TO BE DISQUALIFIED AND OR IGNORED.

PLEASE VISIT www.bhel.com or www.bhelhwr.co.in for more details and tender documents.

Thanking You,

Yours Faithfully,
For & On behalf of CFFP BHEL Hardwar

AJAY KAITHAL
ENGINEER (PURCHASE)

LIST OF DOCUMENTS:

1. Annexure-A (General Terms and Conditions of Tender Enquiry).
2. Annexure-B (Commercial Terms)
3. Annexure-C (Check List)
4. Technical specifications and drawings



GENERAL TERMS AND CONDITIONS OF TENDER ENQUIRY
ANNEXURE-A

1. Submit the tender in two parts i.e.

Part-I Techno-Commercial Bid

Part-II Price Bid

Techno-Commercial (part one) & Price Bid (part two) should be put in separate sealed envelopes. Both envelopes should be super scribed with **Tender Number, Date of Opening & Technical / Commercial Bid and Price Bid** respectively along with name of firm.

Both the envelopes i.e. containing Techno-Commercial Bid and Price Bid should again be kept in one envelope super scribed again with Tender No. and Date of Opening and the name of firm submitting the tender and sent by Registered A/D post to **SDGM(MM),Purchase Department ,CFFP ,BHEL Hardwar,Ranipur ,Hardwar 249403,Uttarakhand ,India**

Part-I Envelopes super scribed with Techno-Commercial Bid must contain all information especially:-

(a) Specification of the material offered should be strictly as per CFFP/BHEL specifications of Enquired material in tender documents. **Deviations if any must be indicated clearly in the offer .**

(b) All commercial terms i.e. packing, forwarding, Custom Duty ,Additional Duty ,ST/STT/VAT/CST, Excise duty/CVD , Bank Charges, payment terms & Insurance etc as applicable should be clearly mentioned **except Price** .Also mention present rate of applicable taxes & duties even if inclusive in rates.

(c) Confirm to submit all required commercial documents (tax invoice, CENVATable duplicate copy of invoice, packing list, transit sale agreement etc.)& technical documents (TC/GC/QP etc.)

(d) Registration Numbers of SSI, Central Excise, Sales tax, Income tax, DGS & D, ECC etc.

(e) **Un-priced copy of Price Bid.**

Part-II Envelopes super scribed with Price Bid should contain **priced copy of Price Bid**. The price should be mentioned both **in figures and words**.

2. Authorized Signatory should authenticate all tender documents.

3. **Techno-commercial bid (Part-I)** will be opened on the due date at 2.00 PM. In the presence of participating vendors or authorized representatives, who may wish to be present. Representative deputed to witness tender opening must produce an authority letter from the signatory of offer. After evaluation of technical bids & finalization of technical, commercial terms & condition, price bid of only successful vendors will be opened. Priced bid opening date will be intimated separately.

4. The material offered must conform to the required BHEL specifications and drawings as well as instructions and details made available .

5.Eligibility :

a) The Vendor must submit the annual reports giving the audited profit or loss account and balance sheet for last three financial years with year ending 31.03.07.

b) The Vendor have to submit the details of recent orders of similar material (not earlier than 31.03.05) executed mentioning the Name and address of Customers with technical details preferably in India .

The Vendors who are registered with any unit of BHEL ,India, in related category are exempted of above two . They should however give details of their registration.



6. Original Test Certificate & other related Documents from the Manufacturers or Government or Recognized Houses shall have to be produced as applicable without any extra cost. This may please be clearly confirmed in the quotation without which the offer may not be considered.

7. Validity of offers should be minimum of 180 working days from the date of Tender (Techno-Commercial Bid) opening.

8. Delivery in the promised period is the essence of contract. Confirm to supply according to delivery schedule mentioned (Refer Annexure B)

9. Payment Term preferably should be within 30 days after receipt and acceptance of material else 1% incase of Indigenous Supply and 2% in case of foreign supply including High Seas Sales and CIF, as applicable will be loaded on Total Value without CENVAT in Landed Cost Calculation (refer Annexure B as well). Vendors of Indian origin will not be paid through Letter of Credit. No advance amount will be paid. The indigenous supplier shall be paid through E-Mode. The format and requisites are attached.

10. Loading : 1) 0.5% per week of delivery period extra after 150 days for 500MW HP & 250 MW IP and 300 days for IP 500 MW shall be loaded on total value without any CENVAT/MODVAT for comparison. The offer may be rejected if delivery period exceeds 20 weeks after desired 150 days for 500MW HP & 250 MW IP and 300 days for IP 500 MW for FOB and 180 days for 500MW HP & 250 MW IP and 330 days for IP 500 MW for FOR (as per Inco terms 2000).

11. CFFP/BHEL Hardwar reserves the right to accept or reject any or all tenders without assigning any reason there of.

12. Tenders not submitted in the prescribed manner are likely to be ignored/ rejected.

13. Agent /Agency Commission: Payment of any kind at any stage will not be made to Agent on account of agent commission or otherwise by CFFP BHEL Hardwar.

14. CFFP, BHEL, HARIDWAR may opt for **E-auction/Reverse auction** for obtaining best prices for part or full Tendered Quantity.

15. Please do intimate the personal contact details like Mobile Number, Email-Id, etc of authorized executive for correspondence.

16. Penalty : Orders placed against this Enquiry will be subject to normal clauses for imposing Penalty, Liquidated Damages, Risk purchases, cancellation, arbitration as per terms and conditions of Purchase Orders in case of delay in effecting supply and or other defaults.

17. Inspection : CFFP BHEL Hardwar inspection after receipt shall be final and binding. BHEL may inspect at Vendor's work also. BHEL may nominate any testing house for inspection. The report shall be final and binding to both concerned. In case store is found defective during warranty period, the same will be returned for repair (if not possible in India by Vendor) and or replacement. For this Vendor has to bear all the charges such as Freight, i.e. to and fro, insurance etc. Bank Guarantee for the equal amount to the cost of the item is to be furnished by Vendor. In case the repair is done at CFFP/BHEL the amount on actual shall have to be reimbursed by the Vendor and or adjusted on actual from their Bill.

18. Security Deposit and Performance Bank Guarantee is must. The percentage of both proposed (Annexure B) if decreased the % of decrement than that proposed shall be loaded on Landed Cost Calculation. The minimum % acceptable shall be decided by CFFP/BHEL beyond which offer may be rejected.

19. Disputes : In event of any dispute arising out of Contractual obligation, the order being finalized at Hardwar, India will be subject to Indian Laws and falls under jurisdiction of the Court of Law at New Delhi, India. The overseas supplier hereafter referred to as "Vendor" shall therefore, abide by the verdict of Court of Law at Hardwar, India as may occur.

-OR-

All disputes arising out of or in connection with the present contract, if any, shall be finally settled under the rules of arbitration of International Chamber of commerce by one or more arbitrator appointed in accordance with the said Rules in India.



COMMERCIAL TERMS OF CFFP BHEL HARDWAR (ANNEXURE B)
(To be filled by Foreign (outside India) Vendor)

Sr No	CFFP Terms and Conditions	Agreed /Not agreed	If not agreed write your Terms
1	Payment Terms:100% payment by irrevocable Letter of Credit in full or parts .However 90% of order value shall be paid up to dispatch and balance 10% after Guarantee/warranty period.		
2	Security Deposit of 100% or amount for which Letter of Credit is to be opened must be submitted with Order Acceptance or within 30 days from Clearance to dispatch given by CFFP personnel which ever is applicable .The 90% security deposit must be valid up to receipt of material at CFFP BHEL Hardwar and balance 10% up to Guarantee/Warranty period.		
3	Mode of Supply (FOB) : Mention Port of Loading .All charges up to Port shall be borne by Vendor including Forwarder's fee whose name will be informed with Order .		
4	LD Clause : In case of delayed supplies ,Liquidated damage @ 0.5% per week of delay with a maximum of 10% of Order value will be levied		
5	Warranty : 24 months after receipt of material at CFFP or 12 months after commissioning at Power Plant which ever is later		
6	Performance related Warranty: Performance related Bank Guarantee of 10% of Order Value has to be submitted for Guarantee/warranty period before release of 90% of Order value payment		
7	Delivery Schedule : 150(HP 500MW & IP 250MW) and 300 (IP500 MW)days of Order Date or 120 days after opening of L/C which ever is earlier .		
8	Validity of Quotation :180 days of opening of Tender		
9	Transit insurance if applicable will be borne by Vendor		
10	After sales Support: Available through India based Agency		
11	Bank Charges in opening of L/c will be in respective account for irrevocable L/c .For any further requirement or amendment of L/c the charges thereof shall be borne by Vendor.		
12	Loading:0.5% per week of delivery period extra after 150 days shall be loaded on total value without any CENVAT/MODVAT for comparison .The offer may be rejected if delivery period exceeds 20 weeks after desired 150 days /300 days whichever is applicable.		

Signature & Seal of Vendor

**COMMERCIAL TERMS OF CFFP BHEL HARDWAR (ANNEXURE B)****(To be filled by Indigenous (Within India) Vendor)**

Sr No	CFFP Terms and Conditions	Agreed /Not Agreed	If not agreed write your Terms
1	Payment Terms:90% payment after receipt and acceptance of material within 30 days balance 10% after Guarantee/warranty period .		
2	Security Deposit :100% of total Order Value must be submitted with Order Acceptance or within 30 days from Clearance to dispatch given by CFFP personnel which ever is applicable. The 90% security deposit must be valid up to receipt of material at CFFP BHEL Hardwar and balance 10% up to Guarantee/Warranty period.		
3	Mode of Supply (FOR) : Material is to be supplied at CFFP BHEL Hardwar Stores		
4	LD Clause : In case of delayed supplies ,Liquidated damage @ 0.5% per week of delay with a maximum of 10% of Order value will be levied		
5	Warranty : 24 months after receipt of material at CFFP or 12 months after commissioning at Power Plant which ever is later		
6	Performance related Warranty: Performance related Bank Guarantee of 10% of Order Value has to be submitted for warranty period before release of payment of 90% of order value.		
7	Delivery Schedule : 180 (HP 500MW & IP 250MW) and 330 (IP500 MW)days of Order Date		
8	Validity of Quotation :180 days of opening of Tender		
9	Transit insurance if applicable will be borne by Vendor		
10	After sales Support: Available		
11	Bank Charges if involved shall be borne by supplier.		
12	Loading:0.5% per week of delivery period extra after 180 days shall be loaded on total value without any CENVAT/MODVAT for comparison .The offer may be rejected if delivery period exceeds 20 weeks after desired 180 days/330 days whichever is applicable .		


Signature & Seal of Vendor







CHECK LIST
ANNEXURE C
(To be filled by Vendor)




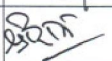
Sr No	List of Questions	Indicate Yes/No Below
1	Have checked & understood all technical details as per specifications, literature and documents before quoting.	Yes/No
2	Have all the pages signed by authorized and stamped with company's seal	Yes/No
3	Have all taxes and duties mentioned with value applicable as on date along with MODVATable duties and/or taxes if any with actual value(%) to be claimed	Yes/No
4	Have all commercial points filled as per Annexure A and filled Annexure A is attached.	Yes/No
5	Have Techno Commercial bid Price Blanked out	Yes/No
6	Have Eligibility Criteria (Clause 5 Annexure-I) understood and requisites as applicable attached.	Yes/No
7	Have Price Bid replica of Techno Commercial Bid without additional documents priced	Yes/No
8	Have three separate envelopes super scribing Tender Reference with due Date along with your company name at bottom each for Techno-Commercial Bid ,Price Bid and Envelope Containing both, prepared.	Yes/No
9	Have personalized contact details like Email Id ,Mobile No and Fax No are mentioned for correspondence	Yes/No


Signature & Seal of Vendor

निष्पक्ष एवं हस्ताक्षर & DATE:		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी-हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF-04044 Rev00 पृष्ठ 4 का 1 Page 1 of 4
SUPERSEDES INVENTORY NO. यदि पूर्व में के अतिरिक्त			
SPECIFICATIONS FOR STEAM TURBINE HP AND IP ROTOR FORGINGS			
1.0 General: This specification governs quality requirements of Steam Turbine HP/IP Rotor Shaft forging of steel grade 30CrMoNiV5 11.			
2.0 Application: Rotor forging shall be used in the manufacturing of steam turbines.			
3.0 Condition of Delivery: Forged, Preliminary heat-treated, Pre Q. T. machined (machining prior to quality heat treatment) and ultrasonically tested. Drawing of Pre Q.T. machining shall be provided by BHEL. Quality heat treatment, subsequent testing (including axial core), heat stability test and proof machining shall be carried out in BHEL.			
4.0 Dimension and Tolerances: Forging shall be supplied to the dimensions and tolerances as per ordering drawing (Pre Q. T. machining drawing).			
5.0 Manufacturing: 5.1 General Requirements: Before starting the production the manufacturer shall submit following documents for BHEL approval, in accordance to the specification No. HW0980816. Manufacturing and inspection sequencing plan (MIP) for forging shall constitute the details of <ul style="list-style-type: none"> ▪ Steel melting, vacuum treatment, ingot pouring ▪ Forging process ▪ Preliminary heat treatment ▪ Pre-machining prior to ultrasonic testing ▪ Ultrasonic testing ▪ Machining as per ordering drawing (Pre-Q.T. machining) ▪ Tests and inspections after preliminary heat treatment ▪ Marking, preservation and dispatch 			
स्वामिकाधिकार एवं गोपनीयता 3 इन प्रमाणों की आवश्यकता पर्यवेक्षण एवं अनुमति प्राप्त करने के बिना नहीं किया जाये। प्रयोग, जो की कंपनी के हित में हस्तिकारक हो न किया जाये।			
दिनांक एवं समय SIGN & DATE	अनुबादक TRANSLATED BY निर्माणाकर्ता WORKED BY P K ROY जांचकर्ता CHECKED BY S R VERMA पर्यवेक्षणकर्ता SUPERVISED BY HARIOM		
गोपनीयता INVENTORY NO	सहमत विभाग AGREED DEPTT.	नाम NAME	दिनांक एवं समय DATE & SIGNATURE
	FORGE QC	GM VERMA	APPROVED : PLANT STANDARDS COMMITTEE
			निर्माण : फोर्ज टेक्नोलॉजी PREPARED : FORGE TECH. जारी : फोर्ज टेक्नोलॉजी ISSUED : FORGE TECHNOLOGY दिनांक : DATE : 03-10-2004


दिनांक एवं शताब्दी DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी-हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		FF-04044 Rev00																																																									
				पृष्ठ 4 का 2 Page 2 of 4																																																									
SUPERVISOR INVENTORY NO. कार्य प्रो. नं. Job Order No.	<p>5.2 Melting and Forging:</p> <p>Steel shall be melted in Electric Arc Furnace and subsequently vacuum refined through the process of VCD/VAD. Prior approval from BHEL is required if supplier intends to adopt any other method of steel making and secondary steel treatment.</p> <p>Minimum Reduction Ratio on largest cross section of forging shall be 4:1</p> <p>5.3 Heat Treatment:</p> <p>The rotor shaft forging shall be subjected to preliminary heat treatment suitable to achieve proper ultrasonic response, fine grain size of the material and hydrogen content lower than 1.0 PPM. Minimum temperature of Austenizing shall be 970°C. Rotor forging shall be suitably, if required, tempered at 700°C followed by controlled cooling to reduce stresses.</p> <p>6.0 Properties</p> <p>6.1 Chemical Composition (Wt %)</p> <p>Shaft forging shall be tested for chemical composition from top end and bottom end of the shaft. Forging shall meet the following chemical compositions besides ladle analysis on completion of metal pouring</p> <table border="1"> <thead> <tr> <th>Element</th> <th>Min</th> <th>Max.</th> <th>Gaseous content in ingot</th> </tr> </thead> <tbody> <tr> <td>C</td> <td>0.270</td> <td>0.310</td> <td rowspan="3">Hydrogen ≤ 1 ppm</td> </tr> <tr> <td>S</td> <td>---</td> <td>0.007</td> </tr> <tr> <td>P</td> <td>---</td> <td>0.007</td> </tr> <tr> <td>Si</td> <td>---</td> <td>0.100</td> <td rowspan="2">Oxygen ≤ 20 ppm</td> </tr> <tr> <td>Mn</td> <td>0.300</td> <td>0.800</td> </tr> <tr> <td>Ni</td> <td>0.500</td> <td>0.750</td> <td rowspan="2">Nitrogen ≤ 50 ppm</td> </tr> <tr> <td>Cr</td> <td>1.100</td> <td>1.400</td> </tr> <tr> <td>Mo</td> <td>1.000</td> <td>1.200</td> <td></td> </tr> <tr> <td>V</td> <td>0.250</td> <td>0.350</td> <td></td> </tr> <tr> <td>Cu</td> <td>---</td> <td>0.120</td> <td></td> </tr> <tr> <td>Al (Total)</td> <td>---</td> <td>0.010</td> <td></td> </tr> <tr> <td>Sn</td> <td>---</td> <td>0.010</td> <td></td> </tr> <tr> <td>As</td> <td>---</td> <td>0.020</td> <td></td> </tr> <tr> <td>Sb</td> <td>---</td> <td>0.0015</td> <td></td> </tr> </tbody> </table>					Element	Min	Max.	Gaseous content in ingot	C	0.270	0.310	Hydrogen ≤ 1 ppm	S	---	0.007	P	---	0.007	Si	---	0.100	Oxygen ≤ 20 ppm	Mn	0.300	0.800	Ni	0.500	0.750	Nitrogen ≤ 50 ppm	Cr	1.100	1.400	Mo	1.000	1.200		V	0.250	0.350		Cu	---	0.120		Al (Total)	---	0.010		Sn	---	0.010		As	---	0.020		Sb	---	0.0015	
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दिनांक एवं हस्ताक्षर SIGN & DATE			संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी-हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)		FF-04044 Rev00	
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BHEL भारतीय भारती भारतीय भारती	<p>6.2 Grain Size: Grain size when tested in accordance with ASTM specification no. E 112 shall be finer than 5.</p> <p>6.3 Ultrasonic Test: 6.3.1 Ultrasonic test and acceptance shall be carried out as per Siemens specification no. PA 14/24.51. 6.3.2 Ultrasonic test of rotor forging (100%) shall be witnessed by BHEL or BHEL authorized agency.</p> <p>6.4 Gas analysis: Gas analysis shall be carried out from the bottom and top end of the forging and shall meet the following requirements: Hydrogen \leq 1 ppm Oxygen \leq 20 ppm Nitrogen \leq 50 ppm</p> <p>6.5 Dimension inspection: Dimension inspection shall be carried out on the rotor forging as per ordering drawing. Dimension tolerances and surface finish as per ordering drawing.</p> <p>7.0 Marking: The supplier shall mark each shaft with identification number. This is to be punched on the shaft end as shown on the drawing.</p> <p>8.0 Inspections: BHEL / Authorized representative shall witness chemical analysis, gas analysis, ultrasonic test and dimensional inspection and shall issue clearance certificates. BHEL / Authorized representative should be provided by the supplier all necessary help during the course of inspection at their premises. Supplier shall issue certificates for chemical composition, gas analysis, grain size, ultrasonic test, heat treatment details, dimension report and guarantee certificate.</p>					
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Forge Limited. It must not be used directly or indirectly in any way detrimental to its interest.						
स्वतंत्रता एवं गोपनीयता : इस प्रमाण पत्र में सूचना भारत देश की सुरक्षा के लिए दी गई है। इसका प्रयोग केवल सुरक्षा के लिए ही किया जा सकता है। स्वतंत्रता एवं गोपनीयता : इस प्रमाण पत्र में सूचना भारत देश की सुरक्षा के लिए दी गई है। इसका प्रयोग केवल सुरक्षा के लिए ही किया जा सकता है।						
दिनांक एवं हस्ताक्षर SIGN & DATE						
भारतीय भारती INVENTORY NO.	निर्माणकर्ता WORKED BY P K ROY		स्वीकृति APPROVED :	संस्थान मानक समिति PLANT STANDARDS COMMITTEE		
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दिनांक एवं हस्ताक्षर & DATE		संस्थान क्रय विनिर्देश (सी.एफ.एफ.पी.-हरिद्वार) PLANT PURCHASE SPECIFICATION (CFFP - HARDWAR)	FF-04044 Rev00 पृष्ठ 4 का 4 Page 4 of 4
सुपरवाइजर INVENTORY NO की ओर की ओर	9.0 Deviations: Deviations from this specification, which may arise during manufacturing, shall be submitted to BHEL in writing; giving full details of the deviations. Acceptance of concession request shall be at the sole discretion of BHEL. 10.0 Packing & Dispatch: Before dispatch, the forging shall be suitably packed to prevent corrosion and damage during transit. Steady rest portions shall be properly protected with anticorrosive compound.		
COPYRIGHT AND CONFIDENTIAL The information on this document is the property of BHEL. It must not be used directly or indirectly in any way detrimental to the interest of the company. स्वत्वधिकार एवं गोपनीय : इस दस्तावेज की प्रतिलिपि केवल अग्रिम के लिए ही प्रयुक्त होनी चाहिए। इस दस्तावेज को अन्य किसी भी प्रकार प्रयोग, नौ की कपनी के हित में प्रकाशित न किया जाए।			
दिनांक एवं हस्ताक्षर SIGN & DATE	निर्माणकर्ता WORKED BY P K ROY		स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE निर्माण : फोर्ज टेक्नोलॉजी PREPARED : FORGE TECH. जारी : फोर्ज टेक्नोलॉजी ISSUED : FORGE TECHNOLOGY दिनांक : DATE : 03-10-2007
सुपरवाइजर INVENTORY NO	जांचकर्ता CHECKED BY S R VERMA		

दिनांक एवं हस्ताक्षर SIGN & DATE		संस्थान मानक (डीप - हार्डवयर) PLANT STANDARD (HEEP - HARDWAR)		HW0980816	
				पृष्ठ का Page 1 of 5	
स्टोराज INVENTORY NO.	Based On: QS 0001 Edition: 10/98 SIEMENS AG				
	<u>Manufacturing and Inspection Sequence Plan (MIP) for Forgings</u>				
1.0 Scope of Application:					
This specification describes about " Manufacturing and Inspection Sequence Plan (MIP) for open die forgings which shall be given by the supplier and sent to BHEL before starting the manufacturing.					
2.0 General Requirements:					
2.1 For each forging a manufacturing and inspection sequence plan (MIP) shall be prepared by the supplier for its approval by BHEL before starting the manufacturing.					
2.2 A new MIP shall also be submitted for forging <ul style="list-style-type: none"> when the supplier intends to change anything in manufacturing or in testing/inspection. for every new purchase order of the forging 					
2.3 Each MIP for a specific forging shall contain forging drawing reference, supplier identification no., material grade & specification, purchase order reference and other required details.					
2.4 Basis for the MIP is the applicable purchase specification, ordering drawing, test specification of BHEL as well as special quality assurance requirements given in the purchase order. All the information given in MIP by the supplier shall be fixed also in the internal working instructions of the manufacturer, which have to be used for the manufacturing and inspection process.					
2.5 MIP shall be submitted to BHEL well before starting manufacturing for approval by BHEL. By approving the MIP, BHEL does not take any responsibility for processes or manufacturing details of the supplier.					
हस्ताक्षर एवं दिनांक SIGN & DATE	स्टोराज INVENTORY NO.	Member (PJO) TSX V. B. ARORA R. BHATA OAX N. K. MANUWANI STE A. K. JAIN		नाम NAME V. B. ARORA R. BHATA N. K. MANUWANI A. K. JAIN	
		सहभागी विभाग AGREED DEPTT.		दिनांक एवं हस्ताक्षर DATE & SIGNATURE	
		अनुवादक TRANSLATED BY		निर्माणकर्ता WORKED BY A. K. SARKAR	
		जांचकर्ता CHECKED BY A. K. SARKAR		परीक्षणकर्ता SUPERVISED BY J. P. MEENA	
				स्वीकृति : संस्थान मानक समिति APPROVED : PLANT STANDARDS COMMITTEE	
		निर्माण : PREPARED : MTE		जारी : मानक विभाग ISSUED : STANDARDS DIVISION	
				दिनांक : DATE : 17.01.02	

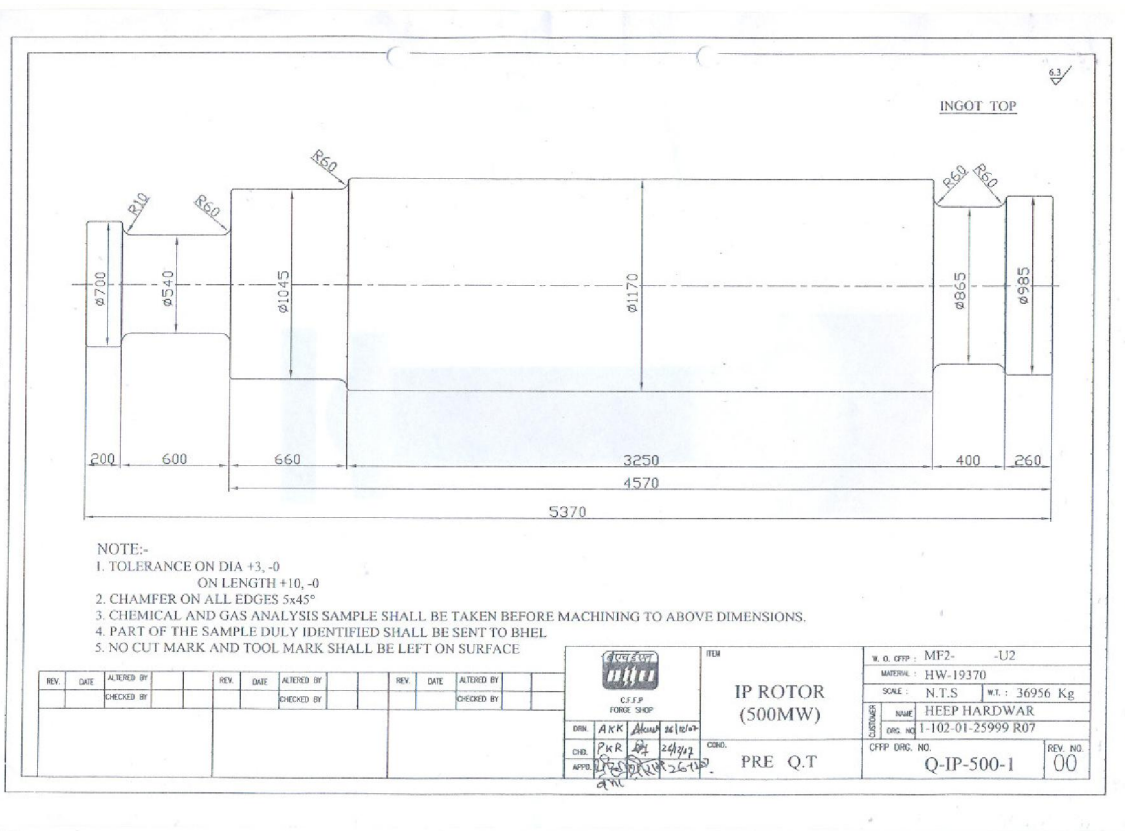
संस्था मानक (कंप-हार्डवर) PLANT STANDARD (HEEP- HARDWAR)		HW0980816 पृष्ठ का Page 2 of 5	
BHEL			
2.6 BHEL has to be informed in writing about the manufacturing steps to be performed by sub-suppliers. The supplier has to ensure, that all the quality assurance requirements agreed with BHEL in MIP, shall be applied also to the sub suppliers.			
2.7 Deviations during manufacturing from the agreed procedures mentioned in the MIP have to be submitted to BHEL in writing for approval alongwith justifications.			
2.8 BHEL or its representatives (3 rd party inspection agency) may witness manufacturing and/or testing besides the acceptance inspections which are mentioned in the Purchase Specifications.			
3.0 Contents of MIP: At least following information shall be given in detail in MIP alongwith the reference documents, copy of which shall be enclosed with MIP:			
3.1 Melting, Steel Treatment, Ingot Pouring <ul style="list-style-type: none"> Ladle analysis Melting Process Ladle treatment Method of de-oxidation / Degassing Secondary Refining Method of ingot pouring Number and weight of melts in the ingot Pouring temperature Ingot weight and average diameter L/d ratio 			
3.2 Forging Process: <ul style="list-style-type: none"> Power of the press Forging weight % Top Discard % Bottom Discard Number of forging in the ingot Final forging contour, forging sketch Detailed forging sequence with sketch of forging dimensions and data of forging heats Special forging procedures are to be reported Total forging ratio 			
निर्माणकर्ता Worked by जांचकर्ता Checked by		A.K.SARKAR J.P.MECNA 10.1.02 10.1.02	

प्रमाण पत्र प्रारम्भ SIGN & DATE		संस्थान मानक (हीप-हार्डवार) PLANT STANDARD (HEEP- HARDWAR)	HW0980816
संपूर्ण सूची संख्या INVENTORY NO. P-3830	संपूर्ण सूची संख्या INVENTORY NO.	पृष्ठ का Page 3 of 5	
<p>3.3 Preliminary Heat Treatment : HT cycle sketch to be submitted</p> <ul style="list-style-type: none"> Type of heat-treatment furnaces Heating rate Holding temperature and holding time Cooling rate Cooling medium Number of cycles Method of temperature measurement HT cycle sketch <p>3.4 Internal Tests and Inspections before Quality Heat Treatment</p> <p>3.5 Quality Heat Treatment :</p> <ul style="list-style-type: none"> HT cycle sketch to be submitted Sketch of heat treatment contour of forging including ingot position and test piece locations Type of heat-treatment furnaces Heat treatment position: vertical and horizontal Heating rate Holding temperature and holding time Cooling rate Cooling medium Method of cooling, quenching or spraying Temperature in the forging core Method of temperature measurement <p>3.6 Tests and Inspection after Heat Treatment:</p> <ul style="list-style-type: none"> Mechanical tests: with details of test piece location and sizes(preferably with sketches), Test method Residual stress measurement (position of test and method of measurement) Surface condition after machining for non destructive examination Surface crack inspection with details of inspection procedure Ultrasonic test with details of test procedure preferably with sketch Any other special tests (e.g. axial core test etc.) Dimensional check Acceptance norms of all tests and inspections alongwith reference documents TC review, Acceptance tests and inspection by BHEL/3rd party 			
संपूर्ण सूची संख्या INVENTORY NO. P-3830		निर्माणकर्ता Worked by A.K. SARKAR <i>gjh</i> 10.1.02 जांचकर्ता Checked by J.P. MEENA <i>gjh</i> 16.1.02	

दिनांक एवं समय SIGN & DATE		संस्थान मानक (क्षीप-हरिद्वार) PLANT STANDARD (HEEP - HARDWAR)	HW0980816 पृष्ठ का Page 4 of 5						
सामग्री सूची संख्या INVENTORY NO.	सामग्री सूची संख्या INVENTORY NO.	<p>3.7 Heat Stability Test(If required as per technical purchase specification or ordering drawing)</p> <ul style="list-style-type: none"> • Position of bearing and measuring areas (with sketches) • Method of heating • Test procedure in detail • Anti rust coating on surface • Acceptance norms alongwith reference documents <p>3.8 Test Certificates to be submitted as per technical purchase specification</p> <p>3.9 Marking, Preservation and Dispatch</p> <p>4.0 CROSS REFERRED STANDARDS:</p> <p>NIL</p>							
स्वतंत्रता एवं गोपनीय प्रमाणित एवं प्रमाणित प्रमाणित एवं प्रमाणित	COPYRIGHT AND CONFIDENTIAL The information on this document is the property of H.P. Hardwar. It is not to be used directly or indirectly in any way without the written permission of H.P. Hardwar.								
दिनांक एवं समय SIGN & DATE	दिनांक एवं समय SIGN & DATE								
सामग्री सूची संख्या INVENTORY NO.	सामग्री सूची संख्या INVENTORY NO.	<table border="1"> <tr> <td>निर्माणकर्ता Worked by</td> <td>A.K.SARKAR</td> <td>10.1.02</td> </tr> <tr> <td>जांचकर्ता Checked by</td> <td>J.P.MEENA</td> <td>16.1.02</td> </tr> </table>		निर्माणकर्ता Worked by	A.K.SARKAR	10.1.02	जांचकर्ता Checked by	J.P.MEENA	16.1.02
निर्माणकर्ता Worked by	A.K.SARKAR	10.1.02							
जांचकर्ता Checked by	J.P.MEENA	16.1.02							

SIGN & DATE		PLANT STANDARD HEEP HARDWAR										HW 0980 816					
		Page 5 of 5															
SUPERSEDES INVENTORY NO.	RECORD OF CHANGES																
	REV CODE	NO OF CHGS	DOCU NO	SHEET NO	STGN	DATE	REV CODE	NO OF CHGS	DOCU NO	SHEET NO	STGN	DATE					
DISTRIBUTION SHEET																	
DEPTT	TGE	STE	AME	DME	HGE	MTE	GTE	HXE	MTE	MAL	IN- SUL SYS.	HLE	TSX	THC	PPX	MCX	CSX
	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓					
DEPTT	AUX	OSX	CCX	FAX	TFX	TLX	TTX	TTX	TTX	TTX	WT	QAX	QCX	PCM	WC 202	WC 205	WC 227
						J&T											
DEPTT	FBM	HTM	STM	TLM	ACM	CIM	FCM	FCM	SUM	WAM	ESX	TRX	TAX	FCX	TBM		
	BLI	WC 276	WC 236	WC 632	WC 291	WC 330	WC 356	WC 361	WC 370	WC 386					✓		
INVENTORY NO 1-3830	SIGN & DATE <i>[Signature]</i>	REVISION															
		DRAWN															
		WORKED															
		CHECKED															
		A.K. SARKAR <i>[Signature]</i> 10.1.02															
		J.P. MEENA <i>[Signature]</i> 12.1.02															

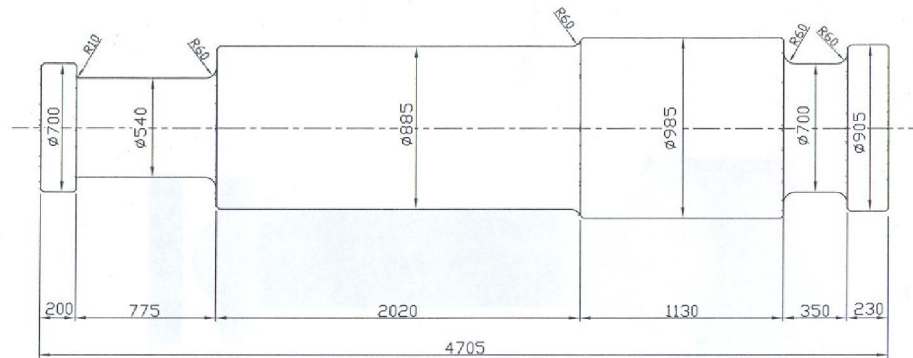
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INGOT BOTTOM

INGOT TOP

6.3/ALL OVER



NOTE:-

1. TOLERANCE ON DIA +3, -0
ON LENGTH +10, -0
2. CHAMFER ON ALL EDGES 5x45°
3. CHEMICAL AND GAS ANALYSIS SAMPLE SHALL BE TAKEN BEFORE MACHINING TO ABOVE DIMENSIONS.
4. PART OF THE SAMPLE DULY IDENTIFIED SHALL BE SENT TO BHEL
5. NO CUT MARK AND TOOL MARK SHALL BE LEFT ON SURFACE

REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY	REV.	DATE	ALTERED BY
		CHECKED BY			CHECKED BY			CHECKED BY

		ITEM	MATERIAL CODE : FF1934096059 SPECIFICATION : FF04044 SCALE : N.T.S. W.T. 20730 Kg NAME : BHEL, HARDWAR DES. NO. : 1-101-01-09999 R06 CTFP DES. NO. : Q - HP - 500 - 1 REV. NO. : 00	
DWN: <i>ARK</i> <i>10/11/13</i> CTD: <i>PRR</i> <i>10/11/13</i> APPD: <i>10/11/13</i> <i>6100</i>		H.P ROTOR (500 MW) PRE Q.T		

LIST OF CONSORTIUM BANKS:

- | | |
|---|---|
| 1. State Bank of India
CAG Branch,
10-th Floor, Vijaya Building,
Barakhamba Road,
New-Delhi-110001 | 10. HDFC Bank Ltd
5 th Floor, HT House,
K G Marg,
New-Delhi-110001 |
| 2. Canara Bank
74, Janpath,
Building,
New-Delhi-110001 | 11. CITI Bank N A
Jeevan Vihar

Sansad Marg,
New-Delhi-110001 |
| 3. Punjab National Bank
Bank
74, Janpath,
place,
New-Delhi-110001 | 12. Standard Chartered

H2 Block, Connaught

New-Delhi-110001 |
| 4. Bank of Baroda
Corporate Banking Branch,
11 th Floor, BOB Building,
Sansad Marg,
New-Delhi-110001 | 13. ICIC Bank Ltd.
ICIC Tower,
Bisham Pitamah Marg,
Pragati Vihar,
New Delhi 110003 |
| 5. Deutsche Bank
Tolstoy Marg,
New-Delhi-110001
Building, | 14. IDBI Bank Ltd.
19, K G Marg,
Surya Kiran

New-Delhi-110001 |
| 6. State Bank of Hyderabad
Surya Kiran Building,
K. G. Marg,
New-Delhi-110001 | 15. HSBC Ltd.
ECE House,
28 KG Marg,
New-Delhi-110001 |
| 7. State Bank of Mysore
Antriksh Bhawan,
K. G. Marg,
New-Delhi-110001 | |
| 8. State Bank of Mysore
Industrial Finance Branch,
Ramanashree Arcade,
MG Road,
Bangalore-560001 | |
| 9. State Bank of Travancore
Travancore House, | |

IF Branch, K G Marg,
New-Delhi-110001

ANNEXURE III

PROFORMA FOR SECURITY DEPOSIT (TO BE STAMPED IN ACCORDANCE WITH STAMP ACT)

This deed of guarantee made thisday ofTwo Thousand.....by (bank) hereinafter called 'the Guarantor') which expression shall unless repugnant to the context or meaning thereof be deemed to include its successors and assigns)IN FAVOUR OF M/s Bharat Heavy Electricals Limited (A Government of India Undertaking) a Company incorporated under the Companies Act, 1956 having its registered office at "BHEL House" Siri Fort, New Delhi 110 049 , through its Unit/Division at Hardwar (Central Foundry Forge Plant) hereinafter called " the Company" (which expression shall unless repugnant to the context of meaning thereof be deemed to include its successors and assigns).

WHEREAS M/s..... (hereinafter referred to as the vendor) have entered into a contract bearing no.....Dated.....(Hereinafter referred to as "the Contract") for the supply ofWith the Company.

AND WHEREAS the Contract interalia provides that the vendor shall furnish Security Money to the Company in the form a Bank Guarantee for a sum of Rs.....(Rs.....only) as Security for due and faithful execution of deliveries within specified period in the contract.

AND WHEREAS THE VENDOR has approached the Guarantor and in consideration of the arrangement arrived at between the Vendor and Guarantor; the Guarantor has agreed to give the guarantee as hereinafter mentioned in favour of the Company.

NOW THIS DEED WITHNESS AS FOLLOWS:-

(1) The Guarantor do hereby guarantee to the Company the due and faithful performance, observance or discharge of the Contract by the Vendor and further unconditionally and irrevocable undertake to pay the Company without demur and merely on demand to the extent of Any claim made by the Company on them for any loss, damage, costs charges and expenses caused to or suffered by the company by reason of the vendor making any default in the performance, observance or discharge of the terms , conditions stipulations or undertakings or any one of them gas contained in the Contract.

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

(3) The Company shall have fullest liberty without affecting in any way the liability of the Guarantor under this guarantee, from time to time to enforce or forbear from enforcing any of the terms and conditions governing the contract or securities available to the Company and the Guarantor shall not be released from its liability under these presents by any exercise by the Company of the liberty with reference to the matters aforesaid or by reason of time being given to the vendor or any other forbearance, act or commission of the part of the company or any indulgence by the company to the vendor or of any other matter or thing whatsoever which under the law relating to sureties, would but for this provision have the effect of so releasing the Guarantor from its liability under this Guarantee.

(4) The Guarantor further agree that the Guarantee herein contained shall remain in full force and effect during the period that would be taken to the performance of the Contract and that it shall continue to be enforceable till all the dues of the Company under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged and till the Company certifies that the terms and conditions of the Contract have been fully and properly carried out by the Vendor and accordingly discharges this Guarantee, subject, however, that this Guarantee is only valid for written demands by the Company on or before.....(specify date).

The Guarantor undertake not to revoke this Guarantee during the period it is in force except wit the previous consent of the Company in writing and agree that any liquidation or winding up or insolvency or dissolution or any change in the constitution of the Vendor or the Guarantor shall not discharge the Guarantor's liability hereunder:

It shall not be necessary for the Company to proceed against the Vendor before proceeding against he Guarantor and the Guarantee herein contained shall be enforceable against them notwithstanding any security which the Company may have obtained or obtain from the Vendor shall at the time where proceedings are taken against he Guarantor hereunder by outstanding or unrealized.

The Guarantor hereby declares that it has power to execute this guarantee under it is Memorandum and Articles of association and the executants has full powers to do so on its behalf under the Power of Attorney dated.....granted to him by the proper authorities of the Guarantor..

IN WITNESS whereof the (Bank) have caused this deed to be signed hereunder or their behalf on the date first above mentioned.

Signed for and on behalf of the (Bank)

Name:

Designation:

Address:

Fax No. (With country code):

E-mail address:

**NOTE: IN CAE A BANK IN INDIA IS GIVING THIS BANK GUARANTEE;
IT WILL BE EXECUTED ON A STAMP PAPER OF RS. 62.50 BUT IF IT
WILL BE FROM AN OVERSEAS BANK, IT WILL HAVE TO BE
EXECUTED AS PER LAWS OF THAT COUNTRY.**