

Tender No:FF/SC/21004/202100009

Item: CAST FABRICATED IMPELLER

Drawing No: 0-204-7-21303/M3: Rev-00

S.No.	Term	Confirmation/Remark by Vendor
1	Vendor to submit Gross machining charges per piece basis in Indian Rupees/piece on FOR CFFP Basis. Transportation of item from CFFP to Vendor's works (To & Fro) shall be in scope and responsibility of Vendor. Transportation and insurance charges shall be borne by Vendor.	
2	Scrap (Chip) generated during machining is to be retained by vendor & same will be treated as sold to bidder by CFFP. Value of scrap and GST on same shall be recovered from the party. Please note that the weights mentioned in tender enquiry are technological weights mentioned for indication only. However quantum of Scrap for recovery from party shall be calculated on the basis of actual weight basis of casting (Difference of before and after machined weight). Weight measured at CFFP shall be considered as final for calculation of scrap retained by vendor. Recovery of scrap shall be based on actual chip retained by the vendor based on weight measured at CFFP. For information only, present chip rate for April'2021 is Rs. 78.06 per Kg however chip rate as on date of material lifting shall be applicable for orders against this tender. Scrap rate shall be calculated as per annexure D.	
3	Payment Term shall be: 100% within 30 days after receipt and acceptance of material at CFFP through E-Payment.	
4	Loading on account of deviation in payment terms shall be done as per extant rules of BHEL-Haridwar. The normal loading shall be @ Base rate of SBI (as applicable on the date of bid opening, Techno-commercial bid opening in case of two part bids) + 6%, for the period of relaxation sought by bidders.	
5	Casting weight mentioned is indicative weight however actual weight may vary within +20% to -10% of indicative weight. It will have no impact on machining charges of casting.	
6	GST amount on service rendered (Gross Machining) shall be reimbursed to sub-contractors on timely filing of online returns and deposit of tax to government account.	
7	Enquired quantity shall be split in following manner: a) If number of techno-commercially qualified vendors is more than 3, quantity shall be split among L1, L2 & L3 vendors in manner of L1-27 No, L2-16 No & L3-11 No on acceptance of L1 rate by L2 & L3 vendors. In the event of non-acceptance of L1 rate by L2 or L3 vendor, respective quantity shall be offered to L-4, L5 and so on to achieve the objective of reaching three vendors for machining. in case L-1 rate is not accepted by any other vendor, then the quantity available shall be ordered on L1 vendor. b) If number of techno-commercially qualified vendors is 3, quantity shall be split among L1 & L2 vendors in manner of L1-33 No & L2-21 No on acceptance of L1 rate by L2 vendor. In the event of non-acceptance of L1 rate by L2 vendor, respective quantity shall be offered to L3 vendor to achieve the objective of reaching two vendors for machining. in case L-1 rate is not accepted by any other vendor, then the quantity available shall be ordered on L1 vendor.	
8	Delivery schedule shall be as per Annexure P2/IV	
9	BHEL shall be resorting to Reverse Auction (RA) (Guidelines as available on www.bhel.com) for this tender.	
10	Penalty for Late Delivery: The delivery of the material after machining shall be made strictly as per time limit specified in delivery schedule, failure to supply within this period will make the sub-contractor liable to a penalty of 1/2 (half) percent of the price of the order in arrears per week subject to a maximum of 10% on the SCO (total SCO value). Any correspondence regarding waiver of LD shall not be entertained. In case supplier does not agree for LD clause, BHEL will load maximum penalty under LD clause, to the extent the same is not agreed by the vendor, for the purpose of comparative statement. Where deliveries quoted are not suiting, BHEL may ignore the offer.	

11	Risk Purchase: In case of delays in return of material after machining / defective machining or non-fulfillment of any other terms and conditions given in the Sub-contracting Order by the sub-contractor, the Buyer reserves the right to cancel the sub-contracting order in full or part thereof, and may also make the machining of such material from alternative source at the risk and cost of the sub-contractor.	
12	Vendor has to submit BG/FDR of Rs. 1 Lakh from consortium bank & indemnity Bond as required by CFFP/BHEL before lifting of item from CFFP, BHEL.	
13	Quotation Validity shall be 365 days from the date of tender opening (part-1 bid opening date)(Excluding Tender Opening Date)	
14	MSE vendors need to declare valid Udyam Registration in their offer, failing which they shall not be able to avail the benefits available to MSE's.	
15	All the quantity in enquiry may not be ordered, Sub Contractor should be prepared for orders of reduced quantity without any implication on the rate quoted.	
16	Quotation not in accordance with our enquiry are liable to be rejected.	
17	CFFP BHEL reserves the right to get the material processed from more than one Sub-Contractor.	
18	In the course of evaluation, if more than one bidder happens to occupy L-1 status, effective L-1 will be decided by soliciting discounts from the respective L-1 bidders. In case more than one bidder happens to occupy the L-1 status even after soliciting discounts, the L-1 bidder shall be decided by a toss / draw of lots, in the presence of the respective L-1 bidder (s) or their representative (s).	
19	Breaking of Tie for other than L1 status: In case rates quoted by more than one vendor are same then vendors having higher SPR (Supplier Performance Rating) will be considered above in the raking compared to vendor having lower SPR. SPR as on date of tender opening (1st part bid) will be taken for consideration.	
20	Drawing and Standards: All drawings and standards are property of BHEL. They must not be used in any way detrimental to the interest of BHEL and should not be used for any other purpose except to process BHEL's Job.	
21	Vendor should take adequate Insurance cover (Value as per excise challan) for BHEL material issued to them for Job Work.	
22	BHEL, Ranipur Haridwar reserves the right to reject any or all tenders without assigning any reasons thereof, Quotation not in accordance with above instructions and conditions will be disqualified.	
23	Job to be machined as per delivery drawing.	
24	ARBITRATION AND GOVERNING LAW: All disputes or difference of opinion what so ever that may arise between the company and the Sub-contractor upon or in relation to or in connection with the contract, the same shall be referred to sole arbitration of Head of CFFP, BHEL or such other person as nominated by the Head of CFFP. There will be no objection to any such appointment, or award of the Head of CFFP or the arbitrator so appointed. The award shall be final and binding on the company and the sub-contractor. The arbitration proceeding shall be held at Ranipur, Hardwar. Work under contract shall continue during the arbitration proceeding, unless otherwise directed in writing by the company or unless the matter is such that the work can not be possibly continued till the decision of arbitration. Provisions of applicable arbitration and conciliation Act shall apply. Court at Hardwar shall have sole Jurisdiction in the cases arising out of this contract.	
25	No further sub-contracting to third party or sister concern by the sub-contractor is allowed without prior permission of CFFP, BHEL.	
26	In case of rejection, the cost decided by CFFP for recovery will be final & binding to sub-contractor.	
27	Sub-contractor will be fully responsible for transportation of material to & from CFFP and also for the period material is lying with them for any theft or damage to the material or for damage to third party.	
28	The bidder along with its associates/collaborators/sub-contractors/sub-vendors/Consultants/ service providers shall strictly adhere to bhel fraud prevention policy displayed on bhel website http://www.bhel.com and bhel Haridwar website http:// website http://www.bhel.com and bhel Haridwar website http:// Hwr.bhel.com and shall immediately bring to the notice of bhel management about Any fraud or suspected fraud as soon as it comes to their notice."	

29	As per existing rule of GST, all material sent for machining shall be returned back before 365 days. In case CFFP, BHEL has to incur any additional cost by way of (a) Payment of GST on full value of job (b) interest on GST amount due to failure on Sub-contractor account, it will be recovered from them. Any change in this rule by Govt. of India from time to time will be applicable.	
30	Sub-contractor will have to deposit in advance, all the charges recoverable from them before lifting of material for machining.	
31	The Bidder declares that they will not enter into any illegal or undisclosed agreement or understanding, whether formal or informal with other Bidder(s). 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. In case, the Bidder is found having indulged in above activities, suitable action shall be taken by BHEL as per extant policies/ guidelines.	
32	For new vendors not registered with CFFP BHEL, kindly furnish copy of following documents: o Company Name and Address Proof. o GST Number (Scan Copy of Acknowledgement) o PAN Copy o MSME Certificate (UAN, Udyam if Any)	
33	Vendors not registered with CFFP/BHEL should submit online supplier registration form on BHEL portal https://supplier.bhel.in . If registered at any other unit of BHEL, vendor code may be furnished. Please fill the SRF and it is requested to submit the Acknowledgement No./ Application no. of filled SRF along with the offer.	
34	- In case any column is left blank, it shall be deemed to be accepted by vendor. - If any difference is found for any term and condition in the offer and this annexure "A", the terms quoted in this annexure 'A' shall be deemed as final and binding on vendor.	
35	Compliance to MAKE IN INDIA circular issued by Gol (P-45021/2/2017-PP(BE-II) dtd 04/06/2020) and its revision dated 16/09/2020. "For this procurement, the local content to categorize a supplier as a Class I local supplier / Class II local supplier/ Non-Local Supplier and purchase preference to Class I local supplier, is as defined in Public Procurement (Preference to Make in India), Order 2017 dated 04.06.2020 issued by DPIIT. In case of subsequent orders issued by the nodal ministry, changing the definition of local content for items of the NIT, the same shall be applicable even if issued after issue of this NIT, but before opening of Part II bids against this NIT". All bidders have to confirm about being 'Class-I local supplier', 'Class II local supplier' or 'Non-Local supplier'. Procurement shall be done from Class-I/II Local Suppliers only. Also submit the self declaration certificate alongwith offer. Format for self declaration certificate enclosed with tender enquiry documents.	
36	In line with clause no 9 of order: P-45021/2/2017-PP (BE-II) dated 04.06.2020 and its revision dated 16/09/2020, for the quoted item, kindly mention the details of locations where value addition is made.	
37	Provide name, mobile no. & email address of the contact person.	
38	Refer Annexure B & D for other terms and conditions of this tender enquiry.	

Vendor's Sign & Stamp

Tender No: FF/SC/21004/202100091

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Terms and Conditions for Tender enquiry

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

Quotation against Enquiry No. _____ **Dated:** _____

Due on: _____

To,

**Incharge- Sub contracting, Central Foundry Forge Plant,
Bharat Heavy Electricals Limited, HARIDWAR-249403 (Uttarakhand), INDIA.**

In case of Three/Two Part Bid, technical bid containing technical offer, duly signed; and un-priced copy of the Price Bid should be kept in one envelope. Price Bid containing only the price should be kept in a separate envelope. All envelopes indicating Part-1 or Part-2 or Part-3 as the case may be to be put in a bigger envelope. Please note that un-priced bid should be the exact replica of price bid without prices but with applicable taxes and duties.

The bid/quotation must be posted before due date, keeping allowance for postal transit time. Alternatively, the tenders duly sealed and super-scribed as above may be deposited in the Tender Box. Quotations sent by any mode but not received in time will be ignored.

The following shall be superscribed on the envelopes:

PART-I

- (a) TENDER NO. AND ITEMS DESCRIPTION.
- (b) DUE DATE FOR OPENING.
- (c) "TECHNO-COMMERCIAL BID PART-I"

PART-II

- (a) TENDER NO. AND ITEMS DESCRIPTION.
- (b) DUE DATE FOR OPENING OF PART-I.
- (c) "PRICE BID PART-II".

PART-I (TECHNO-COMMERCIAL BID) shall comprise of following documents:

- (a) Complete Technical offer
- (b) DETAILS AGAINST PQR REQUIREMENT
- (c) Acceptance of tender terms by bidder as per **Annexure A & B**
- (d) Copy of price Bid (**without price**), this should be replica of part II bid **without price**.

PART-II (PRICE BID)

The price Bid (**with price**) to be submitted as **part II**, for the complete requirement as per tender. Prices are to be indicated in both figures and words. In case of any discrepancy of value, the prices quoted in words shall be considered for evaluation and establishing L1 status.

If price bid is not submitted along with the technical bid, the offer will be rejected out rightly. Price bids of only those bidders shall be opened on the date informed by BHEL who will be found techno-commercially suitable as per tender enquiry terms and condition as per BHEL policies.

02. Offer in 2-part bid is required to be submitted by bidder on or before due date. On due date, tender can be submitted up to 2.00 PM and will be opened at 2.00 P.M. on same date in the Tender Room of CFFP/BHEL, Haridwar.
03. BHEL will not be responsible for any type of postal delay. Please note that late offers shall not be accepted.
04. The vendor should submit their best price at this stage itself and they will not be allowed to revise the price after opening of Part I bid. Any revision / discount given by vendor subsequently on their own after opening of part-1 bid, will be ignored.
05. Bidders to put sign and seal on all the documents. The quotation should be submitted in CFFP tender box before due date and time. Offers received after due time & date shall not be considered.
06. Part-I of the bid shall contain complete item-wise scope of supply as offered vis-à-vis the scope of supply as per enquiry, all commercial terms and conditions etc. It is expected that bidders shall meet all our technical and commercial requirements and shall not deviate from them.
07. **Special remakes of this Tender :**
Mark & machine as per Drg& Technical requirement as per Annexure-P2/I
Packing as mentioned in technical requirement as per Annexure-P2/I
PQR & Technical requirement are enclosed as per Annexure-P2/I
Delivery as per annexure-P2/IV
Vendor to submit compliance against PQR, TR & DLY in P2/I & P2/IV
Grade contains nickel= 3.5-4.5 %.
08. Scrap (Chip) generated during machining is to be retained by vendor & same will be treated as sold to bidder by CFFP. Value of scrap and GST on same shall be recovered from the party. Please note that the weights mentioned in tender enquiry are technological weights mentioned for indication only. However, quantum of Scrap for recovery from party shall be calculated on the basis of actual weight basis of casting (Difference of before and after machined weight). Weight measured at CFFP shall be considered as final for calculation of scrap retained by vendor. Recovery of scrap shall be based on actual chip retained by the vendor based on weight measured at CFFP. **For information only, present scrap rate for April'2021 is Rs. 78.06 per KG however scrap rate as on date of material lifting shall be applicable for orders against this tender. Scrap rate shall be calculated as per annexure D.**

09. CONDITIONS FOR AVAILING MICRO & SMALL ENTERPRISES (MSE's) BENEFITS BY INDIAN BIDDERS

- I. MSE Suppliers can avail the intended benefits only if they submit along with the offer, copy of valid Udyog Aadhaar Memorandum (UAM)/ Udyam Registration certificate. Vendor to declare valid UAM number/ Udyam Registration certificate on e-Procurement portal/ tender, failing which bidder will not be able to enjoy the benefits as per the public procurement policy for MSEs order 2012. Documents as applicable as per Govt. guidelines to be provided.
- II. Any new supplier will be eligible for registration with BHEL as MSE supplier provided Valid Udyog Aadhaar Certificate/ Udyam Registration certificate.
- III. MSE bidders claiming SC/ST status will have to submit SC/ST certificate of the Proprietor from competent authority. Attested (notarized or attested by Gazetted officer) copy to be submitted along with the offer.
- IV. MSE bidders where the proprietor is woman, must clearly specify the same in their offer.
- V. In case techno-commercial accepted bidders include MSE source and their prices (based on landed cost – considering quoted prices) are within the price band of 15% w.r.t. L-1

bidder, then BHEL can consider to offer quantities of respective item (rounded off to nearest number) to MSE bidders at L-1 price and in case, more than one MSE bidder is in 15% band and the same is accepted by more than one MSE bidders then offer quantities of respective items will be considered for ordering amongst MSE bidders.

- VI. In case CFFP, BHEL has envisaged two party ordering to for this tender enquiry on 70:30 or 60:40 basis i.e. 70%/ 60% to L1 vendor and 30% 40% to L2, L3,... vendor then
- In case L1 vendor is non MSE vendor then 70%/ 60% will be ordered to L1 Vendor and balance 30% / 40% will be offered to MSE vendors equally.
 - In case L1 vendor is MSE vendor then 70% / 60% will be ordered to L1 vendor and balance 30% / 40% to L2, L3, vendor who matches L1 price based on rank i.e. 1st it will be offered to L2 Vendor, if accepted then the same will be ordered and in case not accepted by L2 vendor then quantity will be offered to L3 vendor and so on.
 - In case none of the vendor is MSE vendor then normal procedure will be followed.
- VII. In all other cases, quantity up to 25% will be reserved for MSE vendor(s) and following process will be adopted.
- In case L1 vendor is MSE vendor then full quantity to be ordered on L1 vendor.
 - In case L1 vendor is non-MSE vendor then 75% will be ordered on L1 vendor and balance 25% will be distributed to MSE vendors as detailed in Clause 26.4 above.
 - Out of 25% quantities reserved for MSE vendor, 3% quantity will be reserved for MSE vendor with woman as proprietor/more than 50% shareholder and 6.25% quantity will be reserved for MSE vendor with SC/ST status.
 - In case none of the participating vendor is MSE vendor, normal procedure will be followed.**
- VIII. Cases where CFFP decides to order on 3 vendors then last percentage indicated in the Tender Enquiry will be reserved for MSE vendors.
- IX. While distributing the 25% quantity amongst MSE bidders the decimal points in quantity shall be ignored for all the bidders except the L-1 amongst MSE bidders. Balance quantity after allocating the quantity to other MSE bidders ignoring the quantities in decimal, shall be given to L-1 (amongst MSE) bidder. However, if there are more than one MSE bidder at the same price level than preference for additional quantities due to ignoring off the decimal (as mentioned above) shall be given to the bidder offering favorable terms to BHEL and if the conditions offered are also same then preference will be given to the bidder having high SPR (Supplier Performance Rating) rating.
- X. In case there are more than one MSE bidders (with different landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given to the MSE bidder with lowest landed cost.
- XI. In case there are more than one MSE bidders (with same landed cost to BHEL) within 15% price band of lowest bidder and quantity to be offered is 1 no. only, then preference shall be given first, based on the favorable terms in the bid and in case terms are also same, the bidder with high SPR (Supplier Performance Rating) rating shall be given.
10. The sub-contractor shall follow all the rules & regulation of minimum wages, insurance cover of labour, ESI& PF as per rule. BHEL reserves its right to demand any document at any point of time during the execution of contract.
11. The sub-contractor shall observe all the precautions and safety procedures as required during loading & transportation in factory premises. Also required precaution shall be taken while transportation & operation at their works. Precaution must be taken to ensure that there is no damage or pilferage of the material from CFFP & there is no injury to work man.

12. The sub-contractor shall take adequate steps to prevent any loss or damage to any materials entrusted to him. The sub-contractor shall be liable to pay, to the company, for the damages due to negligence or otherwise in executing the machining work entrusted to him or any other failure or any breach of terms and conditions on the part of the contractor.
13. If the Sub-contractor neglects work or fails to observe and/or follow any of the terms and condition of the agreement, CFFP, BHEL, may without prejudice to their any other rights, terminate this contract by giving 15 days notice in writing with or without forfeiting the Bank Guarantee & Indemnity Bond of the Sub-contractor. The termination of contract by the CFFP, BHEL shall be without prejudice to the CFFP, BHEL's right to recover from the contractor the cost of completing the work by any other agency.
14. The Sub-contractor should have sufficient financial resources to meet all expenses & contractual obligation.
15. The Sub-contractor shall be responsible for fulfilling all legal/statutory requirement along with environmental laws. Any loss to the property (belonging to the sub-contractor or the company) or injury to the staff/labour of the Sub-contractor caused due to any reason will be the sole responsibility of the Sub-contractor. Accordingly the Sub-contractor is advised to take necessary insurance cover. Any liability of BHEL, arising due to Sub-contractor, his staff/labour, materials being handled by him, will be recoverable from the Sub-contractor. Accordingly, the Sub-contractor shall indemnify the company.
16. The Sub-contractor shall ensure valid registration with all the State and Central govt. departments as required by various laws such as ESI, PF etc. & submit copies of the same whenever required.
17. The Sub-contractor shall pay wages to the workmen engaged by him at the rates which shall be not less than the minimum wages applicable under law from time to time. BHEL will not entertain any claim or make any reimbursement for additional burden due to change in wages structure etc. under the law. The Sub-contractor shall also ensure statutory obligations (PF, ESI etc.) & benefits to his workmen as per provisions of law enforced from time to time.

(Jaspal Rawat)
Engineer / Sub-Contracting
CFFP/ BHEL / Haridwar

1. Rate of Scrap:

- 1.1 Rate of Scrap for valuation purpose of scrap retained by sub-contractor will be as applicable on date of lifting of job. However, the date of sale will be considered as date on which material is received back against a particular sub-contracting order. Hence, applicable rate of GST on value of scrap will be as on date on which material is received back against a particular sub-contracting order. Payment of taxes & duties, billing and recovery of same from sub-contracting bills will be done accordingly. Chips retained by Sub-contractor will be treated as sold to them by CFFP. Accordingly, all duties & levies (like GST or any tax made applicable by State Govt & Govt of India at that time) shall be paid by CFFP & will be recovered from sub-contractor.
- 1.2 The difference in issued weight and returned weight of finished item/s with stock will be treated as chips generated & retained by the sub-contractor.

2. Scrap containing less than 1.5 % nickel (Ni):

- a) The scrap rate will be calculated based on the monthly average market scrap price posted on JPC web site under category of scrap HMS II, applicable for Delhi region. JPC rates are issued on fortnightly basis. First fortnight (1st to 14th) hereby called "a" and second fortnight (15th onward) hereby called "b".
- b) Monthly average of previous month shall be applicable for succeeding month. Month will start from 1st day of calendar month. MSTB chips rate are 0.875 times of JPC-HMS2 rates based on inference drawn from relation between MSTC rates & JPC HMS2 rates of Delhi region.
- c) In case JPC rates of one fortnight is not available, then rate of remaining fortnight of that month shall be considered i.e if rates of "a" are not available then rates of "b" shall be applicable and if rates of "b" are not available then rates of "a" shall be applicable.
- d) In case JPC rates of both the fortnights i.e "a" as well as of "b" are not available, then last available rates of previous month (rates of "b" and in case rate of "b" are not available then of "a") shall be applicable.
- e) Scrap rate shall be revised every calendar month.
For this purpose, the months for calculation and their applicable month will be like as given below for clarity: -

Average price of JPC Bulletin for the month:

- a) December - Applicable for the material issued in the month January.
- b) January - Applicable for the material issued in the month February
- c) February - Applicable for the material issued in the month March.
- d) March - Applicable for the material issued in the month April
- so on.

The calculated average monthly price, rates will be rounded off upto two decimal points.

Example:**Calculation of Scrap rate (Ni ≤ 1.5%) for February 2021:**

JPC Market Prices (Retail) for Melting Scrap HMS-II (Inclusive of GST)		Monthly Average Price of JPC HMS-II (S)	HMS-II Price excluding GST (18 %) (R*)	Monthly Avg. MSTB Chips Rate excluding GST (As per rate contract: 87.5% of R)	Applicable Month
Price as on	Price				
5th Jan'21	37470	37330	31636	27681	Feb'2021
20th Jan'21	37190				

3. SCRAP CONTAINING MORE THAN 1.5% NICKEL:

Cost of Scrap = [(Rate of Nickel x Quantity of Nickel) + (Rate of Scrap (with Ni ≤ 1.5%) as calculated above x Quantity of Scrap (with Ni ≤ 1.5%))]

Wherein:

Rate of Nickel = CFFP PSL rate of Nickel for as on date of calculation

Quantity of Nickel = As intimated in tender. In case of Ni percentage given in form of range, average of two values shall be taken for calculation.

Rate of Scrap (with Ni ≤ 1.5%) = As per clause 2 above.

Quantity of Scrap (with Ni ≤ 1.5%) = 1- "Quantity of Nickel"

Rate of Nickel shall be applicable for three months.

Example:

Calculation of Scrap rate (Ni ≤ 1.5%) for February 2021:

Turning & Boring scrap having % of Ni	Normal scrap % in overall scrap generated (Value of "A")	% of Ni in overall scrap generated (Value of "B")	Latest available normal turning boring scrap rate	Latest available PSL rate of Nickel as on 01.02.2021	Rates of Turning and Boring Scrap having Ni content more than 1.5%
(a)	(b)	(c)	(d)	(e)	(f)= (bxd)+(cxe)
Ni % > 3.5 to ≤ 4.5	0.96	0.04			78.06

The rate shown in column (f) shall be applicable for the **period 01.02.2021 to 30.04.2021** for tender enquiry to be floated during this period, calculating value of scrap as well as for GST and all other tax purpose for jobs to be lifted within this period

(Jaspal Rawat)

Engineer / Sub-Contracting

CFFP/ BHEL / Haridwar

FINISH MACHINING OF IMPELLER BLADE CASTING**i) PRE QUALIFICATION REQUIREMENT**

S.No.	BHEL Requirement	Vendor's Confirmation
1	Only those vendor should quote who have experience of finish machining of profile of blades (Hydro sets) or other profiled jobs of similar configuration to the full satisfaction of the customer	Vendor to Confirm and submit detail (including copies of P.O. & Inspection/Acceptance report along with the offer)
2	Vendor should have 5 axes CNC Gantry type milling machine/3 axes CNC Gantry type milling machine, suitable to accommodate this blade.	Vendor to Confirm and submit detail of the facilities
3	Vendor should have the facility for CNC programming for achieving the 3 dimensional profile	Vendor to Confirm
4	Vendor should have fixture making capability	Vendor to confirm
5	Vendor should have surface finish measuring equipment	Vendor to confirm
6	Vendor should have software for 3D modelling and machining capability as per model	Vendor to confirm

ii) TECHNICAL REQUIREMENT

S.No.	BHEL Requirement	Vendor's Confirmation
1	Blade castings to be machined all over as per the 3D model provided by BHEL. Tolerance on profile shall be 0.5 mm. Drawing enclosed 0-204-07-21303/M3	Vendor to confirm
2	Surface finish of machined blade shall be 3.2 micron or better.	Vendor to confirm
3	Welding edges as shown in sketch and given in 3D model are also to be made on three edges.	Vendor to confirm
4	After completion of machining, 0.3 mm deep line should be inscribed by machining tool at location of Section D, E and F, throughout the length of the blade on both suction and pressure surface. The planes corresponding to Section D, E and F shall be marked on 3D model and provided to machining vendor.	Vendor to confirm

Vikalp Bishnuthi

Dy. Mgr(M/C Shop)

Md. Asad

Dy. Mgr(M/C Shop)

Md. Javed

DGM(M/C Shop)

S.No.	BHEL Requirement	Vendor's Confirmation
5	Machining allowance available for profile machining shall be 15-18 mm all around.	Vendor to note
6	Weight of casting in as-cast condition is estimated around 1700 kg	Vendor to note
7	Weight of casting after machining is estimated as 980 kg	Vendor to note
8	Total surface area of blade in finish machined condition 4.45 sqm	Vendor to note
9	Material of blade: 13Cr-4Ni Stainless steel to ASTM A743 Gr CA6NM	Vendor to note
10	After machining, Blade to be inspected using 3D scanning equipment and a report of comparison of the same from theoretical 3D model to be submitted to BHEL.	Vendor to confirm
11	Complete Dimensional, Profile, Surface finish inspection may be carried out by BHEL representative at Vendors works.	Vendor to confirm
12	All required tools, instruments, jigs, fixtures, templates, gauges, scanning/measuring facility etc. should be arranged by the vendor	Vendor to confirm
13	After machining, blade should be given identification details by Hard punched	Vendor to confirm
14	Job to be suitably packed after machining to avoid any damage to machined surfaces during loading/unloading/transportation	Vendor to confirm
15	Vendor to submit following with the offer:- a) Details of the Organization b) Details of the machine tools and other facilities installed in the company	Vendor to submit
16	Vendor to submit Filled Supplier Registration Form along with Requisite Documents to SDC Cell in MM Deptt. of CFFP, BHEL, Haridwar. If already registered at CFFP or any other unit of BHEL, then Vendor code may be furnished. Vendor may plan a visit to CFFP	Vendor to submit
17	Vendor may plan a visit to CFFP for technical discussion.	Vendor to Note
18	BHEL team may visit vendor's works for facility/capacity verification.	Vendor to Note

Vikalp Bishnuthi

Dy. Mgr(M/C Shop)

Md. Asad

Dy. Mgr(M/C Shop)

Md. Javed

DGM(M/C Shop)

DELIVERY REQUIREMENT

Annexure P2/IV

Annexure P2/IV

DELIVERY REQUIREMENT					
ITEM	IMPELLER BLADE				
DRAWING NO.	0-204-07-21303/M3:Rev-00				
1st LOT	* DELIVERY PERIOD(in days) OF				
LIFTING QTY IN ONE GO	1st Blade	2nd Blade	3rd Blade	4th Blade	
1	21				REMARKS (The single blade to reach CFFP within 21 days from date of lifting)
2	21	27			(All the 2 blades to reach CFFP within 27 days from date of lifting for a lot of 2 blades)
3	21	27	33		(All the 3 blades to reach CFFP within 33 days from date of lifting for a lot of 3 blades)
4	21	27	33	39	(All the 4 blades to reach CFFP within 39 days from date of lifting for a lot of 4 blades)
5th & SUBSEQUENT					

2nd & SUBSEQUENT LOTS	* DELIVERY PERIOD(in days) OF				REMARKS
LIFTING QTY IN ONE GO	1st Blade	2nd Blade	3rd Blade	4th Blade	
1	21				(The single blade to reach CFFP within 21 days from date of lifting)
2	16	22			(All the 2 blades to reach CFFP within 22 days from date of lifting for a lot of 2 blades)
3	16	22	28		(All the 3 blades to reach CFFP within 28 days from date of lifting for a lot of 3 blades)
4	16	22	28	34	(All the 4 blades to reach CFFP within 34 days from date of lifting for a lot of 4 blades)

* PERIOD STARTS FROM DATE OF LIFTING



VIKALP BIBHUTI

Dy. Manager (M/c shop)



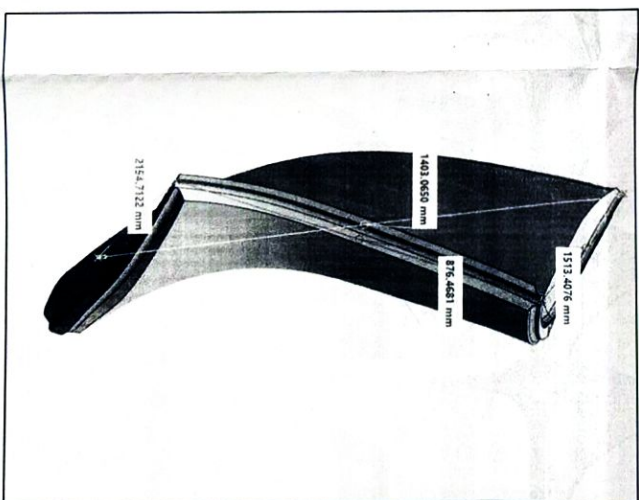
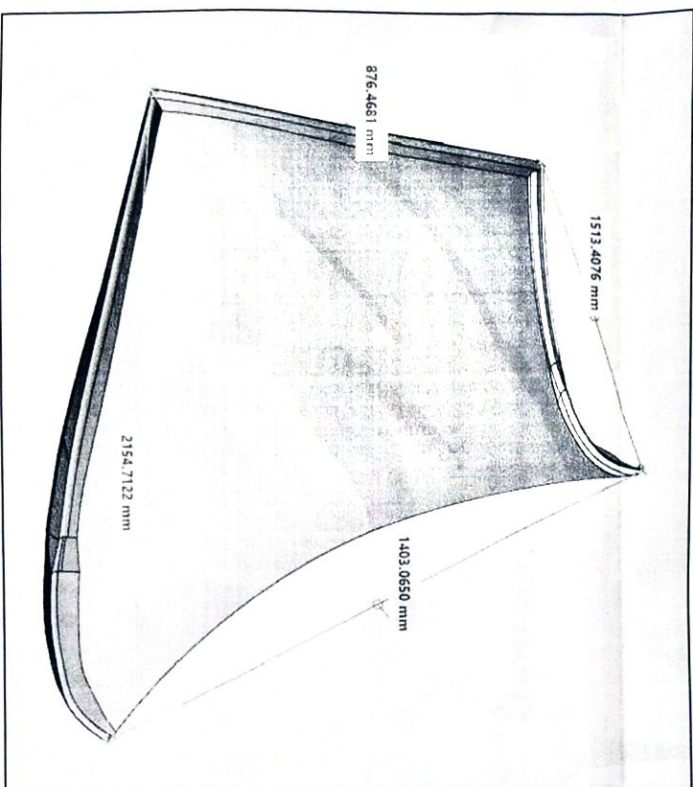
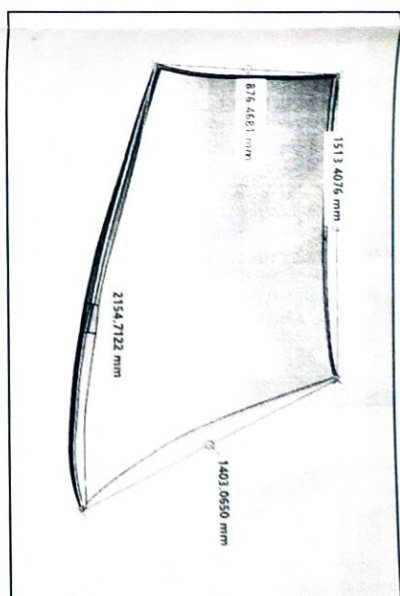
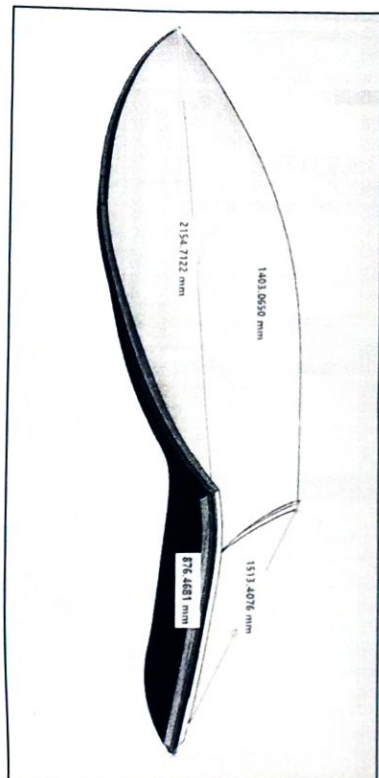
MOHD. ASAD

Dy. Manager (M/c Shop)



MOHD. JAWAD

DGM (M/c Shop)



- NOTES:**
1. Blade castings to be machined all over as per the 3D model provided by BHEL. Tolerance on profile shall be 0.5 mm.
 2. Surface finish of machined blade shall be 3.2 micron or better.
 3. Welding edges as shown in sketch and given in 3D model are also to be made on three edges.
 4. After completion of machining, 0.3 mm deep line should be inscribed by machining tool at location of Section D-E & F, throughout the length of the blade on both suction & pressure surface. The planes corresponding to Section D-E & F shall be marked on 3D model & provided to machining vendor.
 5. Machining allowance available for profile machining shall be 15-18 mm all around.
 6. Weight of casting in as-cast condition is estimated around 1700 Kg.
 7. Weight of casting after machining is estimated as 980 Kg.
 8. Total surface area of blade in finish machined condition 4.45 sqm.
 9. Material of blade: 13Cr-4Ni Stainless steel to ASTM A743 Gr. CA6NM
 10. After machining, Blade to be inspected using 3D scanning equipment and a report of comparison of the same from theoretical 3D model to be submitted to BHEL.

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Foundry Technology
C.No. SFL/04
Date: 11 APR 2021

REV	DATE	APPROVED	REV	DATE	APPROVED	REV	DATE	APPROVED
ZONE		CHECKED	ZONE		CHECKED	ZONE		CHECKED

		BEARAT HEAVY ELECTRICALS, LTD. CENTRAL PATTERN POWER PLANT	
MACHINING DRAWING FOR INVERTER BLADE PART II		Drawing No: 239178 Date: 11 APR 2021	
Drawing No: 239178 Date: 11 APR 2021		Drawing No: 239178 Date: 11 APR 2021	