

Item: CNC FIBER LASER CUTTING M/C SHEET SIZE (TO BE CUT): 3000X1500 MM, FOR METALLIC SHE THICKNESS RANGE (1)M.S. = UPTO 12 MM, (2)S.S. = UPTO 6MM (3) AL= UPTO 2 MM, (4)BRASS:UPTO 1.5 MM, ALONGWITH FIBER LASER SOURCE = 2000 KW CAPACITY (MINIMUM) as per SPEC NO: CFF/PS/SPEC/02 REV 00:

Commercial Terms and conditions for tender enquiry:

S. No.	Description	Vendor's confirmation/reply
1	Material shall be supplied as per tender enquiry in all respects. Point wise reply / confirmation of attached technical specification along with accessories as per specification: CFF/PS/SPEC/02 REV 00 is to be provided along with offer.	
2	Pointwise confirmation of PQC document (Pre-qualification requirement) required along with offer. Interested bidder may plan for pre bid meeting within 2 weeks from issue of tender enquiry for better understanding about the system / peripherals, technical and commercial terms.	
3	Compliance to MAKE IN INDIA circular issued by GoI (P-45021/2/2017-PP(BEII) 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. Supplier is required to provide class -I local supplier / Class-II local supplier Self certificate giving the percentage of local content and details of locations where value addition is made.	
4	Guarantee/ Warrantee: As per specification no CFF/PS/SPEC/02 REV 00 (page 8 of 11), performance guaranteed/warrantee for Minimum 24 months from date of commissioning & completion.	
5	Pre dispatch inspection (PDI) by CFFP, BHEL, Haridwar: Pre-Dispatch Inspection (PDI) call (for readiness of equipment) at least 15 days in advance. If supplier fails to give pre-inspection call with in stipulated time, this will not be a reason of penalty waiver or delivery extension. However final inspection will be done after receipt of equipment at CFFP, BHEL, Haridwar. Note: Travel, Lodging & Boarding charges of BHEL inspectors / trainees during pre-dispatch inspection and training will be borne by BHEL.	
6	Delivery Term: FOR Destination basis, destination being Stores/CFFP/BHEL Haridwar. Quoted rate should be inclusive of the charges like freight, insurance, packing & forwarding etc. for the delivery term given above or else proper loading shall be done.	

7	Delivery of material: Within 07 months from the date of Purchase order (Including Drawing approval, Pre Dispatch Inspection etc.).	
8	Readiness of site by CFFP for E&C: Within one month from date of receipt of complete materials at CFFP.	
09	Erection & Commissioning (E&C) period for supplier: - Within 02 months from date of handing over site by CFFP to supplier for start of E&C work.	
10	Bidder will submit complete schedule of activities with timeline related to supply and E&C. Complete Drawing in one go is to be submitted by vendor within 4 weeks from PO date.	
11	Layout & foundation drg to be submitted by vendor within 1 month from PO date Vendor will submit complete layout drawing in one go. BHEL/CFFP will approve layout drawing within one month after receipt of layout drawing	
12	E&C value will be minimum 10% of contract value. Same will be released after completion of E&C. Rest 90% of contract value will be treated as supply value. Total contract value is supply value plus E&C value / charges.	
13	<u>Payment Terms:</u> 80% payment of Supply value plus 100% Taxes & Duties (subject to checking / confirmation from GSTN portal) shall be made through e-payment within 45/60/90 days (for Micro & Small / Medium Enterprise / Others respectively) from the date of receipt of material at CFFP / BHEL. Balance 20% Payment of Supply value and 100 % E&C charges will be paid after successful commissioning of equipment.	
14	Performance Security/Performance Bank Guarantee: Successful bidder to submit Performance Security/Performance Bank Guarantee of 10.0% of the contract Value (Supply value + E&C value, Excluding Taxes). The Performance Security/PBG shall be submitted within 30 days of notification of the award of Contract and it should remain valid for a period of 60 (sixty) days beyond the date of completion of all contractual obligations of the supplier, including warranty obligations. Tentative period of BG will be 24 months from PO date. PS/PBG shall be returned to the contractor without interest, after the contractor duly performs and completes the contract in all respects but not later than 60 (sixty) days of completion of all such obligations including the warranty under the contract. The Performance Security/PBG shall not carry any interest. Modes of deposit of PS/ PBG: Performance Security/Performance Bank Guarantee shall be furnished in the following forms: i). Local cheques of Scheduled Banks (subject to realization)/ Pay Order/Demand Draft/ Electronic Fund Transfer in favour of BHEL. ii). Bank Guarantee from BHEL consortium Banks and in BHEL format. List of BHEL consortium Banks and in BHEL format is attached. Claim period of BG should be minimum 3 months from the validity. iii). Fixed Deposit Receipt issued by Scheduled Banks / Public Financial Institutions as defined in the Companies Act (FDR should be in the name of the Contractor, a/c BHEL). iv). Securities available from Indian Post offices such as National Savings Certificates, Kisan Vikas Patras etc. (held in the name of Contractor furnishing the security and duly endorsed/ hypothecated/ pledged, as applicable, in favour of BHEL). V). Insurance Surety Bond. (Note: BHEL will not be liable or responsible in any manner for the collection of interest or renewal of the documents or in any other matter connected therewith)	

	Forfeiture of Performance Security/Performance Bank Guarantee: The Performance Security/ Performance Bank Guarantee will be forfeited and credited to BHEL's account in the event of a breach of contract by the supplier.	
15	Currency of offer: Only in Indian Rupee.	
16	Validity of offer: Minimum 180 days from tender opening date.	
17	Prices shall be firm till execution of Order.	
18	Provide name of company on which purchase order is to be placed (in case found lowest suitable bidder), contact person, mobile no. & email address.	
19	<p><u>Penalty for delay in Supply and Erection and Commissioning (E&C) :</u></p> <p>Penalty on delay in 'Supply' and/or 'E&C' will be applicable to the delays attributed to vendor. Penalty will be considered separately for 'Supply' and 'E&C'.</p> <ul style="list-style-type: none"> - The rate of penalty for delayed Supply shall be @ 0.5% per week of delay of total PO value (supply + E&C) subject to a maximum of 10% of total PO value. - The rate of penalty for delayed E&C shall be @ 0.5% per week of delay of total PO value (Supply +E&C) in E&C subject to a maximum of 10% of total PO value (Supply + E&C). - Maximum penalty for delay in Supply and E&C together shall be limited to 15% of total PO value (Supply + E&C). - For calculating Late Delivery penalty, delivery date shall be considered as date of receipt at material at BHEL Hardwar. <p>Note:</p> <ul style="list-style-type: none"> - In case, any shortage is noticed viz-a-viz PO requirement in the main equipment /spares, such shortages shall be replenished by supplier on FOR destination basis without any cost implication to BHEL i.e. Duty and freight charges etc. up to destination for such short supplies shall be borne by the supplier. 	
20	Settlement of Disputes: As per GeM guidelines.	
21	Early delivery acceptable.	
22	Test Certificate & Guarantee certificate are required.	
23	Drawing, Documents and Manuals to be provided as per technical specification (cl no. 1.18).	
24	<p>Breach of contract:</p> <p>In case of breach of contract, recovery of 10% of total contract value shall be applicable. Recovery shall be done by encasing security instruments like Contract Execution Bank Guarantee, performance bank guarantee. In case value of security instruments not available or less than 10% of the contract value, the balance amount be recovered from other financial remedies (i.e. available bills of the contractor, retention amount, etc. with BHEL) or legal remedies shall be pursued. Further, levy of liquidated damages, debarment, termination, de-scoping, short-closure, etc., shall be applied as per provisions of the contract.</p>	
25	Conditions for opening of Price: - BHEL shall be resorting to Reverse Auction (H1 removal) as per GeM condition.	
26	<p>BID SECURITY / EARNEST MONEY DEPOSIT (EMD):</p> <p>Bidder to submit Bid Security/ Earnest Money Deposit (EMD) of Rs 2,00,000/- (Rupees two Lakhs Only). The Bid Security/ Earnest Money Deposit (EMD) shall be</p>	

	<p>submitted along with their bids (except Micro and Small Enterprises (MSEs) or Startups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT)) and it will remain valid for a period of 45 (forty-five) days beyond the final bid validity period.</p> <p>The Bid Security/ Earnest Money Deposit (EMD) shall not carry any interest. Bid securities of the unsuccessful bidders will be returned to them at the earliest after expiry of the final bid validity period and latest by the 30th day after the award of the contract. However, in case of two packet or two stage bidding, Bid securities of unsuccessful bidders during first stage i.e. technical evaluation etc. will be returned within 30 days of declaration of result of first stage i.e. technical evaluation etc.</p> <p>Bid security will be refunded to the successful bidder on conclusion of the order/ receipt of a performance security (if called in the tender).</p> <p>Modes of deposit OF BID SECURITY / EARNEST MONEY DEPOSIT (EMD): The EMD may be accepted only in the following forms:</p> <p>(i) Electronic Fund Transfer credited in BHEL account (before tender opening). (ii) Banker's cheque/ Pay order/ Demand draft, in favour of BHEL (along with offer). (iii) Fixed Deposit Receipt (FDR). (iv) Bank Guarantee from any of the BHEL Consortium Banks in BHEL prescribed format. (v) Insurance Surety Bonds.</p> <p>Bank Details for online submission of EMD is as below: Bank: STATE BANK OF INDIA, RANIPUR BRANCH, HARIDWAR, Beneficiary Name: Bharat Heavy Electricals Ltd. Bank Account No. 10667995469 Account Type. CURRENT ACCOUNT Bank's Branch Code: 00586 Bank's IFSC Code: SBIN0000586 Bank MICR Code: 249002005</p> <p>Forfeiture of EMD: i) A bidder's EMD will be forfeited if the bidder withdraws or amends its/his tender or impairs or derogates from the tender in any respect within the period of validity of the tender or if the successful bidder fails to furnish the required performance security within the specified period mentioned in the Tender.</p> <p>(ii) EMD by the tenderer to be withheld in case any action on the bidder is envisaged under the provisions of extant "Guidelines on Suspension of business dealings with suppliers/ contractors" and forfeited/ released based on the action as determined under these guidelines.</p>	
27	Vendor to quote their offer which includes supply, E&C, Spares, Tools & Tackles etc. applicable as per specification. Offer must be inclusive of all taxes and duties (GST etc.).	
28	For new vendors not registered with CFFP BHEL, kindly furnish copy of following documents: Company Name and Address Proof, GST Number (Scan Copy of Acknowledgement), PAN Copy, MSME Certificate (UAN, Udyam if Any).	
29	<p>The offers of the bidders who are under suspension as also the offers of the bidders, who engage the services of the firms debarred across BHEL, shall be rejected. The list of firms debarred across BHEL is available on BHEL website : www.bhel.com.</p> <p>1.0 Integrity commitment, performance of contract and punitive action thereof:</p>	

	<p>1.1 Commitment by BHEL:</p> <p>BHEL commits to take all measures necessary to prevent corruption in connection with the tender process and execution of the contract. BHEL will during the tender process treat all bidder(s) in a transparent and fair manner, and with equity.</p> <p>1.2 Commitment by Bidder/Supplier/Contractor:</p> <p>1.2.1 The Bidder/Supplier/Contractor commit to take all measures to prevent corruption and will not directly or indirectly influence any decision or benefit which he is not legally entitled to nor will act or omit in any manner which tantamount to an offence punishable under any provision of the Indian penal code, 1860 or any other law in force in India.</p> <p>1.2.2 The Bidder/Supplier/Contractor 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 and shall adhere to relevant guidelines issued from time to time by Govt. of India/BHEL.</p> <p>1.2.3 The Bidder/Supplier/Contractor will perform/execute the contract as per the contract terms & conditions and will not default without any reasonable cause, which causes loss of business/money/reputation, to BHEL.</p> <p>If any Bidder/Supplier/Contractor during pre-tendering/tendering/post tendering/award/execution/post-execution stage indulges in mal-practices, cheating, bribery, fraud or and other misconduct or formation of cartel so as to influence the bidding process or influence the price or acts or omits in any manner which tantamount to an offence punishable under any provision of the Indian Penal Code, 1860 or any other law in force in India then, action may be taken against such bidder/supplier/contractor as per extant guidelines of the company available on www.bhel.com and/or under applicable legal provisions.</p>	
30	BHEL reserves the right to cancel the tender at any stage without issuing any reason for the same.	
31	<p>Conflict of Interest:</p> <p>A bidder shall not have conflict of interest with other bidders. Such conflict of interest can lead to anti-competitive practices to the detriment of Procuring Entity's interests. The bidder found to have a conflict of interest shall be disqualified. A bidder may be considered to have a conflict of interest with one or more parties in this bidding process, if: a) They have controlling partner (s) in common; or b) They received or have received any direct or indirect subsidy/financial stake from any of them; or c) They have the same legal representative/agent for purposes of this bid; or d) They have relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the bid of another bidder: or e) Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all bids in which the parties are involved. However, this does not limit the inclusion of the components/subassembly/Assemblies from one bidding manufacturer in more than one bid; or f) In cases of agents quoting in offshore procurements, on behalf of their principal manufacturers, one agent cannot represent two manufacturers or quote on their behalf in a particular tender enquiry. One manufacturer can also authorise only one agent/dealer. There can be only one bid from the following: 1. The principal manufacturer directly or through one Indian agent on his behalf; and 2. Indian/foreign agent on behalf of only one principal; 5 / 8 1446800/2023/CFFP-PUR_SDC 31 or g) A Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the contract that is the subject of the Bid; or h) In case of a holding company having more than one independently manufacturing units, or more than one unit having common business</p>	

	ownership/management, only one unit should quote. Similar restrictions would apply to closely related sister companies. Bidders must proactively declare such sister/common business/management units in same/similar line of business.	
32	<p>Restrictions on import from countries sharing land border with India:</p> <p>All provision of order no. F.7/10/2021-PPD (1) of Department of Expenditure(DoE) dated 23.02.2023 shall be applicable for this tender enquiry (Order copy is available at https://doe.gov.in/divisions/order-public-procurement-no4-restrictions-under-rule-144xi-general-financial-rules-gfrs. Bidder has to submit a certificate certifying following along with the offer:</p> <p>“I have read the clause regarding restrictions on procurement from a bidder of a country which shares land border with India; I certify that bidder (Name of bidder) is not from such a country or if from such a country, has been registered with the competent authority. I hereby certify that bidder: (Name of bidder) fulfils all requirements in this regard and is eligible to be considered.”</p> <p>If the bidder is from such a country, which shares a land border with India, evidence of valid registration by the competent authority shall be attached along with the offer.</p>	

Vendor's Sign. & Stamped

PRE-QUALIFICATION CRITERIA FOR CNC FIBER LASER CUTTING MACHINE

Ref: Specification No: CFF/PS/SPEC/02 Rev 00

The BIDDER has to compulsorily meet the following requirements to get qualified for considering the technical offer:

Sl. No.	Qualifying Condition	Requirement from Vendor	Vendor's Response
1	Vendor must be a manufacturer of CNC Fiber Laser cutting machine.	Enclose supporting documents.	
2	Average Turnover of last 3 financial years should not be less than INR 45 Lakhs.	Vendor to submit balance sheet & Profit loss statement of last 3 years i.e.2021-22, 2022-23 & 2023-24.	
3	Vendor must have supplied, erected and commissioned at least one CNC Fiber Laser cutting machine capable of cutting metallic sheets of Mild Steel, Stainless steel, Aluminium & Brass with Laser source capacity of minimum 2000 W in the past 10 years (from the scheduled date of part I bid opening of Tender). Date of Successful commissioning will be considered for time period.	Enclose Purchase order copy/ contract agreement copy, corresponding Invoice copy & commissioning certificate.	
4	<p>The following information is to be submitted by the vendor where referred equipment has been supplied:</p> <ul style="list-style-type: none">(a) Name of the customer/company where referred CNC Fiber Laser cutting machine was supplied(b) Complete postal address of the customer(c) Name and designation of the contact person of the customer.(d) Phone, FAX no. and email address of the contact person of the customer.(e) Copy of Performance certificate from their customers regarding satisfactory performance of CNC Fiber Laser cutting machine for a period of minimum one year after commissioning (This period of one year should be completed before tender opening (Part-1) bid).	Enclose relevant documents, performance certificate confirming successful operation for more than one year of the referred supply.	
5	BHEL reserves the right to verify the information provided by the vendor for the referred CNC Fiber Laser cutting machine at their customer's works. Requisite permissions regarding visit of BHEL personnel at their customer's works (if required) is to be arranged by vendor.	Vendor to confirm.	

6	BHEL reserves the right to accept or reject the offer based on the assessment of the technical and financial capability of the vendor. In case any information provided by vendor is found to be false/incorrect, the offer shall be rejected.	Vendor to confirm	
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Note: For Start-ups / MSE vendors:

The subject CNC Fiber Laser cutting machine necessitates precision cutting (without distortions and deviations) for various grades of materials such as Mild Steel, Stainless steel, Aluminium & Brass. Moreover, each grade of material requires different combination of gases to enable ease of cutting with accuracy.

Thus, to ensure reliability, quality & precision of output, relaxation in clause no. 1, 3 & 4 (regarding Prior Experience) is not applicable for Start-ups / MSE vendors.

However, point no 2 for prior turnover condition is relaxed for Start-ups / MSE vendors (after submission of valid MSME certificate).



BHARAT HEAVY ELECTRICAL LIMITED
UNIT'S ADDRESS: CFFP, HARIDWAR, INDIA

Date-23.08.2024

Specification No: CFF/PS/SPEC/02 Rev-00 DATE- 23/08/2024

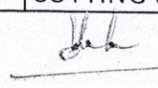
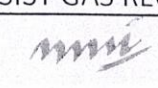
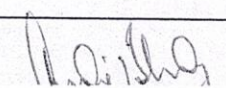
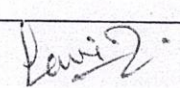
DESC: SPECIFICATION CUM COMPLIANCE CERTIFICATION FOR " CNC FIBER LASER CUTTING MACHINE"

SCOPE:	SUPPLY, ERECTION & COMMISSIONING OF CNC FIBER LASER CUTTING MACHINE WITH SPECIFICATIONS AS BELOW :
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Clause No (1)	DESCRIPTION FOR BHEL REQUIREMENT (2)	REQUIRED (3)	OFFERED (4)/ Remarks	DEVIATION (5)	PAGE NO. (6)
1.0	PURPOSE & WORKPIECE MATERIAL/ APPLICATION				
1.1	CNC operated Fiber Laser cutting machine shall be used for cutting the metallic sheet for making templates , which will be used for checking the dimension of Castings and as a guiding tool for cutting operations in machine shop .The equipment is intended for cutting of Carbon steels, Stainless steels, alloy steel and Aluminium. The machine should be equipped with CNC control system for cutting (with Fiber Laser), electronics and latest softwares. It is required to cut accurately without burr .It is also required for making holes in any profile on single metal sheet/ plate in small or large batch quantity with least possible scrap portion.	Vendor to accept & confirm			
1.1.1	Work piece material: (1) Carbon steel Plates (2) Stainless Steel (3) Aluminium (4) Brass.	Vendor to confirm			
1.1.2	Plate Thickness Range: (1)Mild Steel: upto 12 mm (2) Stainless steel: upto 6 mm (3) Aluminium: upto 2 mm (4) Brass: upto 1.5 mm.	Vendor to confirm & specify			
1.1.3	The complete layout comprising of machine alongwith its accessories and necessary staff room , stores etc (under optimum space) to be provided.	Vendor to submit			

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1.2	Major Technical Specification				
1.2.1	CNC Fiber Laser Cutting Machine Gantry with Rail of sufficient length with rigid H beams and fixing / leveling component, complete drive system including servo motors, double side rack and pinion transmission for gantry, Torch lifter with automatic height adjustment with suitable sensor etc.	Vendor to confirm			
1.2.2	Sheet Size (to be cut): upto 3000 x1500 mm	Vendor to confirm			
1.2.3	Work Length (X-travel): upto 3000 mm	Vendor to confirm			
1.2.4	Work Width (Y-travel): upto 1500 mm	Vendor to confirm			
1.2.5	Height (Z-travel): 100 mm or greater	Vendor to confirm			
1.2.6	Maximum Cutting speed in metre/min for M.S, S.S, Al material, Brass and Kerf size	Vendor to Specify			
1.2.7	Simultaneous positioning Speed in m/min: 100 m/min or more	Vendor to confirm.			
1.2.8	Cutting Bed: A Basic Cutting table to be supplied for putting plates of machine capacity.	Vendor to confirm.			
1.2.9	Position accuracy: ± 0.05 mm/meter	Vendor to confirm.			
1.2.10	Repetitive accuracy: ± 0.03 mm/meter	Vendor to confirm.			
1.2.11	Cutting accuracy should be as per ISO:9013 or its latest version	Vendor to confirm.			
1.2.12	The laser sheet metal cutting machine should consist of Electrical cabinet, safety devices like guard, Alarm system etc, Automatic pallet changer with double platform (simultaneous type and suitable as per sheet dimension).	Vendor to confirm.			
1.2.13	Fiber Laser safety window with full safety enclosure equal to Laser Safety Class-1 (according to DIN EN 60825-1)	Vendor to confirm.			
1.2.14	Wide door opening required for manual sheet loading and unloading whenever required.	Vendor to confirm.			
1.2.15	Cooling of Supply Unit (Air cooled by built-in fan)	Vendor to confirm.			
1.3	CUTTING HEAD				
1.3.1	Make: PRECITEC/RAYTOOL	Vendor to confirm & specify			
1.3.2	Pierce detection feature must be available	Vendor to confirm			
1.3.3	Cutting head with non- contact capacity sensor	Vendor to confirm			
1.3.4	Laser guided beam for positioning the cutting head	Vendor to confirm			
1.3.5	Preburn functions to burn film, paint from plate prior to cutting	Vendor to confirm			
1.3.6	CUTTING and ASSIST GAS REQUIREMENT	Vendor to specify			

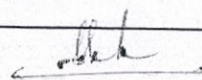
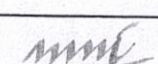
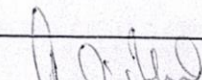
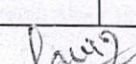
1.3.7	Functions like piercing line, laser control , compressed air cutting etc. shall be available	Vendor to confirm			
1.4	LASER SOURCE				
1.4.1	Fiber laser source (Min 2 kW capacity) with Pulse generator along with Control Panel and suitable control.	Vendor to confirm &specify			
1.4.2	Fiber Laser Make: IPG / SPI/TRUMPF	Vendor to confirm &specify			
1.5	CNC CONTROLLER:				
1.5.1	CNC SYSTEM & FEATURES				
1.5.1.1	Make : Fanuc / Siemens/ OEM controller of the machine	Vendor to confirm			
1.5.1.2	Type : PC based latest version	PC based latest version			
1.5.1.3	Model: (Latest version, as available at the time of ordering, should be supplied).	Vendor to confirm			
1.5.1.4	The system should have full alphanumeric keyboard, TFT colour display (15" or more), additional draw-out type Qwerty Key Board in suitable enclosure, RS232C serial interfaces, parallel interface, COM port for telediagnosics, network ready with LAN, hard disk of sufficient capacity (Largest size available at the time of order shall be supplied), graphic simulation and preinstalled system software & other required softwares etc.(Details should be submitted by Vendor) The CNC System shall also have USB Port for data input/output, suitable hardware/connectors shall be provided to ensure above functionalities	Vendor to confirm and submit details			
1.5.1.5	CNC control for continous monitoring of cutting parameters and positioning (vendor to specify the details)	Vendor to confirm & specify			
1.5.1.6	BHEL will provide drawings in AutoCAD and/or UG NX file for Laser cutting . All necessary conversion and communication softwares/hardwares required to make it compatible to the machine shall supplied with the machine.	Vendor to confirm & specify			
1.5.1.7	Vendor shall provide a copy of all the softwares used with orginal licence, having lifetime validity.	Vendor to confirm			
1.5.2	HAND HELD UNIT:				
1.5.2.1	Vendor to offer type B-MPI or equivalent of make- Siemens/Fanuc/ OEM controller of the machine, with all its features or equivalent along with sufficient length of interfacing cable.	Vendor to confirm with details			

1.5.3	MANUAL CONTROL				
1.5.3.1	Complete manual control of machine with required switches / keys should be provided on operator's panel for selection of required axis, axis direction, cutting feed, cutting feed on/off, display of axis position values etc, for manual cutting operations without using CNC program,/ CNC option MANUAL TURN (of Siemens control or equivalent from Fanuc control) / MDI mode.	Vendor to confirm & offer			
1.5.4	U.P.S FOR CNC SYSTEM				
1.5.4.1	UPS unit (similar to Siemens UPS module/feature SITOP) with rechargeable battery of sufficient time (minimum back up of 15 minutes) and having provision for unattended automatic shutdown feature for Windows operating system.	Vendor to confirm & offer			
1.5.5	AIR CONDITIONERS				
1.5.5.1	Door/ side mounted Air Conditioners of reputed make with Dehumidifiers of suitable/ sufficient capacity and proper drainage pipes for condensate, are to be provided for all Electrical/ Electronic Panels/ Cabinets including operator's Panel (if provided by CNC System Manufacturer) considering specified ambient conditions. The Air Conditioners are to be preferably mounted on doors of panels and not on top of the panels.	Vendor to confirm			
1.6	REQUIREMENT FOR ELECTRICAL EQUIPMENT				
1.6.1	415V (fluctuation $\pm 10\%$), 50HZ (fluctuation $\pm 3\%$), 3 Phase AC (3 wire system without neutral) Power Supply Voltage will be provided by BHEL at a single point near the machine, as per layout recommended by Vendor. All types of switches, cables, connections, circuit breakers etc. required for connecting BHEL's power supply point to different parts of the machine/control cabinets including Voltage Stabilizer, Isolation Transformer & Air Compressor etc. , shall be supplied by the vendor & shall be the responsibility of vendor. Requirement of grounding/earthing with required material details is to be informed by vendor well in advance so that same could be incorporated during construction of foundation.	Vendor to accept & offer			
1.6.2	All electrical & electronic control cabinets & panels should be tropicalized and dust & vermin proof.	Vendor to confirm			
1.6.3	All electrical components in the cabinets should be mounted on DIN Rail.	Vendor to confirm			
1.6.4	All motors shall conform to IEC or Indian Standards	Vendor to confirm			
1.6.5	All cables moving with traversing axes should be installed in caterpillar / Drag chain. Additionally, all the cable trays required for laying of cables should be included in the offer.	Vendor to confirm			

1.6.6	Vendor should ensure the proper earthing for the machine and its peripherals/accessories. Any material requirement for the same should be informed with foundation design/drawings. The vendor can take earthing connection from the nearest column of the production shop.	Vendor to confirm			
1.7	SAFETY ARRANGEMENTS Following safety features in addition to other standard safety features should be provided on the machine:	Vendor to confirm			
1.7.1	Machine should have adequate and reliable safety interlocks / devices to avoid damage to the full machine, work piece and the operator due to the malfunctioning or mistakes. Machine functions should be continuously monitored and alarm / warning indications through lights/ alarm number with messages (on CNC display and panels) should be available.	Vendor to confirm			
1.7.2	All the pipes, cables etc. on the machine should be well supported and protected. These should not create any hindrance to machine operator's movement for effective use of machine.	Vendor to confirm			
1.7.3	All the rotating parts used on machine should be statically & dynamically balanced to avoid undue vibrations & noise.	Vendor to confirm			
1.7.4	Emergency Switches at suitable locations as per International Norms should be provided.	Vendor to confirm			
1.7.5	Oil & water pipe lines should not run with electrical cable in the same trench.	Vendor to confirm			
1.8	SERVO VOLTAGE STABILIZER				
1.8.1	Oil / Air Cooled Servo Controlled Voltage Stabilizer (of reputed Indian make) suitable for complete machine, its drives, controls, PLC etc. for unbalanced load & supply conditions considering specified power supply & ambient conditions.	Vendor to confirm			
1.8.2	Make-NEEL / Aplab / Auto Electric / Servomax	Vendor to confirm			
1.8.3	Model, Rating & Input/Output Voltage etc.	Vendor to specify			
1.8.4	Monitoring device with cutoff facility for under/over output voltage, Devices for load current measurement, MCCB at input for overload/short circuit protection.	Vendor to confirm			
1.8.5	Spares Package for Servo Voltage Stabilizer : 1.) Control Cards - 01 Set (one no. of each type) 2.) Monitoring PCBs - 01 Set (one no. of each type) 3.) Servo Motor - 01 Set	Vendor to confirm			
1.9	ULTRA ISOLATION TRANSFORMER				
1.9.1	Ultra Isolation Transformer (of reputed Indian make) suitable for complete machine , its drives, controls, PLC etc. for unbalanced load & supply conditions considering specified power supply & ambient conditions.	Vendor to confirm			

1.9.2	Make-NEEL or Aplab or Auto Electric or Servomax	Vendor to confirm			
1.9.3	Model, Rating & Input/Output Voltage etc.	Vendor to specify			
1.9.4	Monitoring device with cutoff facility for under/over output voltage, Devices for load current measurement, MCCB at input for overload/short circuit protection.	Vendor to confirm			
1.10	FEED AND DRIVE SYSTEM				
1.10.1	Feed drives motors for X & Y axis (A.C servo motors) shall be digital type of either make-SIEMENS/FANUC make. (Details of model, make, type etc to be submitted along with offer)	Vendor to confirm & specify			
1.10.2	Type of Power transmission : Pre-loaded backlash free . Positive synchronous method be used for the drive for the main axes to be done directly (i.e without Intermediate gear) by high torque motors (A.C) .	vendor to confirm			
1.10.3	The longitudinal travell of bridge on a precision track should be through Servo drives on both sides of bridge having Electroninc sysnchronization control to avoid skewing of the machine even with extremely large working width.	vendor to confirm			
1.10.4	Positive closed loop system to ensure sysnchronous operation of both drives. The bridge should not twist in any condition and should trip, if there is slightest mismatch.	vendor to confirm			
1.10.5	The traverse motion (Y-axis) of the cutting head is to be obtained through backlash free adjustable transverse drive carraige on the precision rack. Or Frictionless Linear drive system	vendor to confirm			
1.10.6	Mechanism for Locking X, Y & Z Axis shall provided for maintenance activities.	vendor to confirm			
1.10.7	Necessary clutch should be incorporated in driving system to permit free moving of Cutting heads and machine bridge.	vendor to confirm			
1.11	Accessories				
1.11.1	Gas Manifolds - Manifolds to be provided ensuring that minimum 2 cylinders for each type of gasses required for all specified aplication can be installed simultaneously. Supply should also include all type of required valves, regulator, hoses and any other accessories .	vendor to confirm			
1.11.2	Suitable air Compressor & Drier for the supplied system to be supplied	vendor to confirm			

1.12	DIAGNOSTIC SYSTEMS				
1.12.1	TELE-DIAGNOSTIC SERVICE				
1.12.1.1	Tele-diagnostic service should be provided through Internet or ISDN along with required Hardware / Software package for the supplied CNC system for remote diagnosis and correction of the problems in both CNC System and PLC of the machine. This should be provided free of charge for the guarantee period. Help guide should be provided for use of the system/service. Terms and conditions for the service after guarantee period should be informed by vendor.	vendor to confirm			
1.12.2	FAULT DIAGNOSTIC SYSTEM :				
1.12.2.1	Supplier's own diagnostic system with required Software and Hardware installed on the CNC system, which shows detailed cause and remedy for the fault on the CNC system display with full video/pictorial diagnostics indicating the element /device causing the fault. Vendor also offer one laptop (latest configuratin) along with PLC programme software (licenced copy) and CNC part programing (capable to run solid cam), with necessary cables or/and PCMCIA card.	vendor to confirm			
1.12.2.2	Machine should have provision to switchover from position feedback system -2 (direct) to Position feed back system-1 (Motor encoder) through PLC program (for service personnel only).	vendor to confirm			
1.12.2.3	Help guide should be provided to use both diagnostic systems(i.e tele-diagnostic& fault diagnostic).	vendor to confirm			
1.13	Compressor Cooling System / CHILLER WITH CLOSED CIRCUIT FOR LASER SOURCE				
1.13.1	Closed loop compressor based/other Cooling Systems for the Laser cutting head, servo-/torque motors, recirculating lubricating oil, hydraulic system oil etc. shall be offered , if required. Colling system shall be complete in all respect i.e with compressor ,pump etc. for it's operation BHEL shall not provide anything but electrical supply. Technical details to be submitted.	Vendor to confirm			
1.14	Mist/Flue Gas Extraction System				
1.14.1	Machine shall have Mist Extraction System/ Flue Gas Extraction System such as Electro Suction Filter unit including all connection and installation at convenient location.	Vendor to confirm			

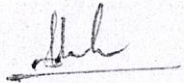





1.15	ERECTION & COMMISSIONING				
1.15.1	Supplier to take full responsibility for carrying out the erection, start up, testing of machine, it's control & all types of other supplied equipment/accessories, cutting of test pieces etc.	Vendor to confirm			
1.15.2	Tools, Tackels, Test Mandrels, instruments and other necessary equipment (including Laser equipment, if required) required to carry out all erection & commissioning activities should be arranged and brought by the supplier.	Vendor to confirm			
1.15.3	Commissioning spares, required for commissioning of the machine within stipulated time, shall be brought by the supplier on returnable basis.	Vendor to confirm			
1.16	GUARANTEE				
1.16.1	Guarantee for complete machine,CNC Control and all supplied accessories/equipments for 24 months from the date of final acceptance of the machine. Any spare required during guarantee period shall have to be arranged by the vendor free of cost and duty levied have to be borne by the vendor.	Vendor to confirm			
1.17	SPARES : (As supplied with the system)				
1.17.1	Electrical /Electronic / CNC Spares : Following Spares are to be offered.				
1.17.1.1	Relays (2 Nos each type)	Vendor to confirm			
1.17.1.2	Contactors (2 Nos each type)	Vendor to confirm			
1.17.1.3	Semi-conductor Fuses (2 No each type & rating)	Vendor to confirm			
1.17.1.4	Proximity Switches (2 Nos each type)	Vendor to confirm			
1.17.1.5	Push Buttons (10 Nos each type)	Vendor to confirm			
1.17.1.6	Indicating Lamps (10 Nos each type)	Vendor to confirm			
1.17.1.7	Circuit Breakers (2 Nos each type)	Vendor to confirm			
1.17.1.8	Encoder cables (1 No of each type)	Vendor to confirm			
1.17.1.9	Encoders & Scanning Heads for Linear Scales (1 No each type)	Vendor to confirm			
1.17.1.10	PCU module (Hard disk loaded with Ghost of the machine after final commissioning)	Vendor to confirm			
1.17.1.11	CNC Operator panel complete with power supply and hard disk (1 No.)	Vendor to confirm			
1.17.1.12	NCU module	Vendor to confirm			
1.17.1.13	I/O Cards for PLC & I/R Module (1 No each type)	Vendor to confirm			
1.17.1.14	Power Module & Control Cards for Main Drive as well as Feed Drives (1 Nos each type) with Main Power Switch	Vendor to confirm			
1.17.1.15	Limit Switches/ Micro Switches (2 Nos each type)	Vendor to confirm			

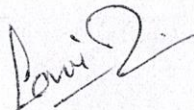
1.18	<p>DOCUMENTATION : Three sets of following documents, hard copies (with Soft Copies wherever specified), in English language should be supplied along with the machine. Each set consists of one no. of each document (Hard copy & Soft copy, as specified)</p> <p>In case of any change/modification in the machine/supplied equipment, if carried out by vendor, during commissioning and warranty period, modified documents in specified quantity shall be supplied after the change/modification.</p>	Vendor to confirm			
1.18.1	Operating manuals of complete Machine & CNC system	Vendor to confirm			
1.18.2	Programming Manuals of Machine & CNC system	Vendor to confirm			
1.18.3	Detailed Maintenance manual of machine and supplied systems.	Vendor to confirm			
1.18.4	Maintenance Interface & commissioning manuals, PLC programming manual for CNC system, Interface & commissioning manuals for table, feed drives and auxiliary drive .	Vendor to confirm			
1.18.5	Drawings for all supplied clamping jaws and its lead screws, coolant connections adapters, tool holders, boring bars, cassettes, adapters, sleeves, fixtures etc.	Vendor to confirm			
1.18.6	Catalogues, Operation & Maintenance Manuals of all bought out items including drawings, wherever applicable .	Vendor to confirm			
1.18.7	Detailed specification of all rubber items and hydraulic/lube fittings.	Vendor to confirm			
1.18.8	Operating Manuals, Maintenance Manuals & Catalogues for supplied accessories viz. Voltage Stabilizer, Isolation Transformer, Air-Compressor, Video Camera System, Chiller, Laser source etc.	Vendor to confirm			
1.18.9	Program print-outs (hard copy) with comments in English for PLC of main machine and auxiliary systems (if used) alongwith cross reference list and Input/Output list.	Vendor to confirm			
1.18.10	PLC program, NC data & PLC data on CD. (PLC program project file which can be loaded on the Field PG or Laptop for diagnostic purpose of PLC using Siemens Simatic manager)	Vendor to confirm			
1.18.11	Complete back-up of PCU-50 hard disk on GHOST CD and clear written Instructions to take back-up and reloading of a new hard disk.	Vendor to confirm			
1.18.12	Complete list of parts/items(Bill of materials) used in the machine in English language.	Vendor to confirm			
1.18.13	Electrical Schematic Diagrams, Wiring Diagrams, Junction Box Layouts, Connector Diagrams and Cable Layouts of the machine in English on soft copy on CD-3 nos.	Vendor to confirm			
1.18.14	Drawings of machine assemblies/sub-assemblies/parts including Pneumatic/ Coolant / Hydraulic circuit diagrams. All Assembly/ Sub Assembly Drawings shall be supplied with the part list marked on it in English.	Vendor to confirm			

1.18.15	Additional set of all the above documentation on CD ROM, wherever possible including complete backup (on CD) of all cycles/subroutines (provided by both vendor and supplier of CNC System) and any other special programs pertaining to different applications/cutting processes/accessories etc. and CNC programs for proveout cutting.	Vendor to confirm			
1. 19	PROVEOUT CUTTING OF BHEL COMPONENT				
1.19.1	Complete and successful cutting of proveout component, to the specified design accuracy and surface finish, shall be done by the vendor after erection & startup of the machine at BHEL works using tools, equipment and CNC programs etc. supplied by the vendor. Representative of vendor shall have to make 10 nos of Metallic Template of different sizes of BHEL drawings, which shall be provided at the time of commissioning of machine at BHEL works. All drawings shall be given in AUTOCAD/UG NX file during proveout cutting at BHEL.	Vendor to confirm			
1.19.2	Machine pre-acceptance at Vendors works- BHEL persons deputed for pre-inspection will be doing pre-acceptance at vendors works and give dispatch clearance after satisfactoriness from all angles. All the accuracy tests (i.e positioning, repeatability, cutting, geometrical etc) should be demonstrated to BHEL team during pre-acceptance at vendors works and again during erection and commissioning at BHEL works.				
1.20	FINAL MACHINE ACCEPTANCE CRITERIA				
	Final acceptance shall be made by BHEL Hardwar after completion of following activities:				
1.20.1	Demonstration of specified/offered cutting accuracies as specified in ISO 9013 standard and Geometrical accuracy as per DIN 8609/ ISO 10791 or its equivalent applicable standard to be done after machine commissioning. Test charts of accuracies to be submitted.	Vendor to accept & confirm.			
1.20.2	Demonstration of specified/offered machine Positioning accuracies measured as per VDI-DGQ/3441 (latest version) and specified values after machine commissioning	Vendor to accept & confirm.			
1.20.3	Demonstration of all features of the machine, control system & accessories to the satisfaction of BHEL for efficient and effective use of the machine along with demonstration of Machine networking and its diagnostic systems.				

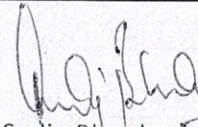
1.21	TRAINING				
1.21.1	<p>BHEL Persons should be trained at BHEL CFFP works for mutually agreed period (Minimum 7 days) in the area of</p> <p>(a) CNC Part Programming, Use of all CNC Features, Programming for Measuring Systems & supplied accessories, cutting Technology of the Proveout Component etc.</p> <p>(b) Electrical, Electronic & CNC maintenance for machine & other supplied equipments</p> <p>(c) Mechanical maintenance of the machine & other supplied equipments</p> <p>(d) Operation of the machine & other supplied equipment.</p>	Vendor to confirm			



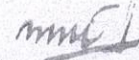
Sanjay Hembrom
Sr. Mgr./ Pattern Shop



Lavin Agarwal
Sr. Mgr. /FFT



Sudip Bhardwaj
Sr.Mgr./M&S



Abhay Kumar
Mgr./M&S

BANK GUARANTEE FOR PERFORMANCE SECURITY

Bank Guarantee No:

Date:

To

NAME

& ADDRESSES OF THE BENEFICIARY

Dear Sirs,

In consideration of Bharat Heavy Electricals Limited (hereinafter referred to as the 'Employer' which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns) incorporated under the Companies Act, 1956 and having its registered office at _____¹ through its Unit at.....(name of the Unit) having awarded to (Name of the Vendor / Contractor / Supplier) with its registered office at _____² hereinafter referred to as the 'Vendor / Contractor / Supplier ', which expression shall unless repugnant to the context or meaning thereof, include its successors and permitted assigns), a contract Ref No.....dated³ valued at Rs.....⁴ (Rupees -----)/FC.....(in words.....) for⁵ (hereinafter called the 'Contract') and the Vendor / Contractor / Supplier having agreed to provide a Contract Performance Bank Guarantee, equivalent to% (.... Percent) of the said value of the Contract to the Employer for the faithful performance of the Contract,

we,, (hereinafter referred to as the Bank), having registered/Head office at and inter alia a branch at being the Guarantor under this Guarantee, hereby, irrevocably and unconditionally undertake to forthwith and immediately pay to the Employer any sum or sums upto a maximum amount of Rs -- -----⁶ (Rupees -----) without any demur, immediately on first demand from the Employer and without any reservation, protest, and recourse and without the Employer needing to prove or demonstrate reasons for its such demand.

Any such demand made on the Bank shall be conclusive as regards the amount due and payable by the Bank under this guarantee. However, our liability under this guarantee shall be restricted to an amount not exceeding Rs. _____.

We undertake to pay to the Employer any money so demanded notwithstanding any dispute or disputes raised by the Vendor / Contractor / Supplier in any suit or proceeding pending before any Court or Tribunal, Arbitrator or any other authority, our liability under this present being absolute and unequivocal.

The payment so made by us under this Guarantee shall be a valid discharge of our liability for payment thereunder and the Vendor / Contractor / Supplier shall have no claim against us for making such payment.

We thebank further agree that the guarantee herein contained shall remain in full force and effect during the period that would be taken for the performance of the said Contract/satisfactory completion of the performance guarantee period as per the terms of the Contract and that it shall continue to be enforceable till

all the dues of the Employer under or by virtue of the said Contract have been fully paid and its claims satisfied or discharged.

WeBANK further agree with the Employer that the Employer shall have the fullest liberty without our consent and without affecting in any manner our obligations hereunder to vary any of the terms and conditions of the said Contract or to extend time of performance by the said Vendor / Contractor / Supplier from time to time or to postpone for any time or from time to time any of the powers exercisable by the Employer against the said Vendor / Contractor / Supplier and to forbear or enforce any of the terms and conditions relating to the said Contract and we shall not be relieved from our liability by reason of any such variation, or extension being granted to the said Vendor / Contractor / Supplier or for any forbearance, act or omission on the part of the Employer or any indulgence by the Employer to the said Vendor / Contractor / Supplier or by any such matter or thing whatsoever which under the law relating to sureties would but for this provision have effect of so relieving us.

The Bank also agrees that the Employer at its option shall be entitled to enforce this Guarantee against the Bank as a principal debtor, in the first instance without proceeding against the Vendor / Contractor / Supplier and notwithstanding any security or other guarantee that the Employer may have in relation to the Vendor / Contractor / Supplier 's liabilities.

This Guarantee shall remain in force upto and including.....⁷ and shall be extended from time to time for such period as may be desired by Employer.

This Guarantee shall not be determined or affected by liquidation or winding up, dissolution or change of constitution or insolvency of the Vendor / Contractor / Supplier but shall in all respects and for all purposes be binding and operative until payment of all money payable to the Employer in terms thereof.

Unless a demand or claim under this guarantee is made on us in writing on or before the⁸we shall be discharged from all liabilities under this guarantee thereafter.

We, BANK lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Employer in writing.

Notwithstanding anything to the contrary contained hereinabove:

- a) The liability of the Bank under this Guarantee shall not exceed.....⁶
- b) This Guarantee shall be valid up to⁷
- c) Unless the Bank is served a written claim or demand on or before⁸ all rights under this guarantee shall be forfeited and the Bank shall be relieved and discharged from all liabilities under this guarantee irrespective of whether or not the original bank guarantee is returned to the Bank.

We, _____ Bank, have power to issue this Guarantee under law and the undersigned as a duly authorized person has full powers to sign this Guarantee on behalf of the Bank.

For and on behalf of
(Name of the Bank)

Dated.....

Place of Issue.....

1 NAME AND ADDRESS OF EMPLOYER I.e. Bharat Heavy Electricals Limited

2 NAME AND ADDRESS OF THE VENDOR /CONTRACTOR / SUPPLIER.

3 DETAILS ABOUT THE NOTICE OF AWARD/CONTRACT REFERENCE

4 CONTRACT VALUE

5 PROJECT/SUPPLY DETAILS

6 BG AMOUNT IN FIGURES AND WORDS

7 VALIDITY DATE

8 DATE OF EXPIRY OF CLAIM PERIOD

List of BHEL Consortium Bank

Sl. No.	Name of the bank
1	State Bank of India
2	Canara Bank
3	IDBI Bank Limited
4	ICICI Bank Limited
5	HDFC Bank Limited
6	Axis Bank
7	IndusInd Bank Limited
8	Bank of Baroda
9	Exim Bank
10	Indian Bank
11	Punjab National Bank
12	Union Bank of India
13	Yes Bank Limited
14	RBL Bank Ltd.
15	Standard Chartered Bank
16	Indian Overseas Bank
17	Kotak Mahindra Bank Limited
18	Federal Bank Limited
19	Hongkong and Shanghai Banking Corporation Ltd

Note: Any changes on above list shall be intimated before executing LC / BG.

AUTHORISATION LETTER
FOR E-PAYMENT/ELECTRONIC FUNDS TRANSFER (EFT/RTGS)
PLEASE FILL UP THE FORM IN CAPITAL LETTERS ONLY

ANNEXURE-D
Page 1 of 1

TYPE OF REQUEST (Tick One) ☐ CREATE ☐ CHANGE

BHEL Vendor/ Supplier Code

Company's Name

Address

City
Pincode
State

Contact Person(S)

Telephone NO.

FAX. No.

e-mail id

1. Bank Name

2. Bank Address

3. Bank Telephone No.

4. Bank Account No.

5. Account Type.

6. Bank's Branch Code

7. Bank Swift Code

(aplicable to EFT only)

8. Enclose blank cancelled cheque

DECLARATION

1. I as representative/Owner of the above named company, hereby authorize BHEL CFFP, Ranipur, Haridwar to electronically make payments to the designated bank account. I hereby certify that the particulars given above are true, complete and correct.

(2) If the transsation is delayed or not effected at all for reasons of incomplete or incorrect information, I would not hold BHEL/transfereing Bank responsible.

3. This authority remains in full force untill BHEL, CFFP, Ranipur, Haridwar receives & acknowledge written notification requesting a change or cancellation.

4. I have read the contents of the covering letter and agree to discharge the responsiblty expected of me as a participant under E-payment/EFT/RTGS.

Date:

Authorized Signatory

Designation

Company Seal

Verification By Bank