



**BHARAT HEAVY ELECTRICALS LIMITED**  
**HEAVY ELECTRICAL EQUIPMENT PLANT**  
**WORKS ENGINEERING DEPARTMENT (WE&S)**  
**RANIPUR, HARIDWAR, UTTARAKHAND-24940**  
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Ref No. WE&S/EOI/AMC/2024-25/01 Dt. 14.09.2024

### **NOTICE FOR EXPRESSION OF INTEREST**

**Name of work:** - Annual Maintenance contract of 15 Nos of CNC machines at BHEL-HEEP Haridwar

**Date of Notice of EOI:** - 14.09.2024

**Last Date of Submission of Technical Offer:** - 05.10.2024

**Date of Opening of Offer:** - 05.10.2024

**Address for sending the offer:** - Tender Room, Purchase Deptt., 4th floor, Main Administrative Building, BHEL, HEEP, Haridwar-249403 (Uttarakhand)

The Heavy Electrical Equipment Plant (HEEP) located in District- Haridwar (Uttarakhand), is one of the major manufacturing plants of BHEL. The core business of HEEP includes design and manufacturing of large steam and turbo generators, condenser and so on. The plant is equipped with different types and capacities of CNC and conventional machines. BHEL, HEEP Haridwar is looking for competent vendors to take up the job of annual maintenance of the machines as per **Annexure-I** through AMC.

The intended summary of Scope of work for **“Annual Maintenance contract of machines at BHEL-HEEP Haridwar”** is enclosed as **Annexure-II**.

Interested parties may submit their Expressions of Interest/technical offer in sealed envelopes as per terms of submitting the offer which shall include the documents listed below under the heading “Offer Documents”. Interested parties who have earlier performed the **work of repairing/reconditioning/AMC of Machines** are strongly advised to visit the site and see machine documents before submitting their bids.

This is an invitation by BHEL to assess technical suitability of probable / prospective contractors for participation in its tender(s) for work of annual maintenance of machines. Technical suitability of the received offers shall be evaluated and vendors shall be shortlisted for further participation in the tender.

### Terms of Submitting the offer.

A. **Offer Documents:** Documents which has to be submitted.

1. A formal letter on Company's /Firm's letter head with the following Details.
    - (a) Bidder Offer No.: \_\_\_\_\_ Date: \_\_\_\_\_
    - (b) Legal Name of the bidder as in GST registration: \_\_\_\_\_
    - (c) Address of the Bidder: \_\_\_\_\_
    - (d) Type of Bidder: (Proprietor / Partnership Firm / Company) \_\_\_\_\_
    - (e) e-mail address of the bidder: \_\_\_\_\_
    - (f) Contact No. of the Bidder: \_\_\_\_\_
  2. **Self-attested Copies of Work orders of retrofitting/ reconditioning/AMC of CNC Machines as above along with the list of equipment's covered under the said work order. The list should have at least following information i.e. Type of Equipment, its Capacity and quantity.**
  3. Self-attested copies of ITR or balance sheet for previous 3 financial years i.e. 2021-22, 2022-23 & 2023-24.
- B. Work orders / experience documents mentioned in A (2) above, shall clearly mention the order value.
- C. Details of work order currently being executed can also be submitted for consideration.
- D. This notification shall be published on [www.bhel.com](http://www.bhel.com), <https://eprocure.gov.in> and <https://hwr.bhel.com> only.
- E. Last date for Receipt of offer shall be dd/mm/yyyy up to 13:45 Hrs. (IST). Offers received up to 13:45 Hrs. (IST) on dd/mm/yyyy will be considered and opened on the same day at 14:00 Hrs. (IST) in the Tender Room, Fourth Floor, Main Admin Building, BHEL HEPP, Haridwar.
- F. Amendments / Corrigendum, if any, will be hosted on our web site <https://hwr.bhel.com> only.
- G. Bidders are not required to submit a price bid.
- H. The requirement of documents like PF registration, ESI registration, PAN, GST Registration shall be mandatory for participation in BHEL tender(s).
- I. All the documents listed at 'A' above shall be sent in a sealed envelope.
- J. Envelope shall be super-scribed with Name of work, EOI No. & Date of Opening of offer with the Name & Complete address of the bidder.

## SCOPE OF WORK

Sl. NO	BRIEF DESCRIPTION OF WORK
1.	<b>Annual maintenance (breakdown and preventive maintenance) of 15 nos. of CNC &amp; Critical machines installed in HEEP as per list (Annexure-II) by timely attending of all complaints received for the machines under contract in all the 3 shifts including Sundays and Holidays as per requirement to ensure its Annual Average Availability of 95% or more during the contract period.</b>

### DETAILED SCOPE OF WORK:

#### 1. BREAK DOWN MAINTENANCE:

- 1.1 Timely Attending of all complaints received in writing/ telephonically / in person/ On-line through computer for the machines under contract in all running (two/ three) shifts.
- 1.2 For every activity (s)/ job (s) performed, a registration number (in the form of running serial number) shall be clearly mentioned in daily log-book or online system by the supervisor of work center for start, expected completion and actual completion date & time, work details , spares/consumables used etc. and work category A, B, C or D (A - within 24 Hrs., B – 1 to 3 days, C – 4 to 7 days & D – more than 7 days). Category will be decided in consultation with the Engineer In-charge Field/CNC maintenance. All the relevant details regarding the running breakdowns shall be given to the Engineer In-charge.
- 1.3 100% break downs shall be attended promptly within 30 minutes of reporting, and handed over timely as per category of breakdown.
- 1.4 In case of urgent breakdown, the contractor shall have to detain his staff on working days, Sundays and holidays as per requirement and as and when instructed by the Engineer In-charge. However, any compensation on this account shall not be paid by BHEL outside the conditions specified in the payment terms.
- 1.5 The breakdown request in the form of on-line report, breakdown request form, telephonic or verbal request shall be received directly from user or BHEL's Maintenance supervisor/ executive in all running (two/ three) shifts.
- 1.6 Critical machines/ emergency requests shall be attended timely by redirecting manpower as per priority and instructions of the Engineer In-charge.
- 1.7 Backlog shall be cleared (where machine is working but problem is pending), requiring repair/ maintenance/ modification on machine shall be attended in time taking the machine from user/ production department after submitting a schedule of actions to the Engineer In-charge.
- 1.8 When repair/ maintenance/ modification work gets completed, the actual time (in hours), material consumed, total down time and other information shall be reported to the Engineer In-charge on daily basis.
- 1.9 All complaints received shall be reported by the contractor to the Engineer In-charge and completed at the earliest.

- 1.10 All break downs reported shall be attended and cleared on day to day basis and List of Pending Breakdowns shall be produced in form of daily Breakdown Report to the Engineer in Charge. The person carrying out the preventive maintenance work/activity shall himself sign on the check list, mentioning his name with date & time of work.
- 1.11 Contractor shall maintain minimum of two work centers for Block-3 & NTS.
- 1.12 The work center shall operate in all running (two/three) shifts with adequate and competent workforce to maintain availability of machine 95 % or more.

## **2. PREVENTIVE MAINTENANCE:**

- 2.1 Preventive Maintenance of all the machines shall be done once in every six months (as per checklist & Machine OEM guidelines). Detail of machines is given in list placed in **Annexure-II**. Check list will be filled up by the person himself while carrying out the work at site. Check list shall be provided by BHEL.
- 2.2 If more than 10% scheduled PM work orders whose registration number mentioned in daily log-book are experiencing delays, the schedule of actions should be prepared and reported to the Engineer In-charge (revised by mutual agreement as per plan).
- 2.3 Preventive maintenance plan job schedule along with check list shall be issued fortnightly from the office of In-charge WEX-Planning.
- 2.4 During Preventive Maintenance, a report of defects / condition requiring repairing/maintenance should be generated. Based on this, suitable action plan should be made for rectification in consultation with Engineer In-charge.
- 2.5 Requiring repair/ maintenance/ modification work on the machines shall be attended in time by submitting a schedule of actions by in-charge work center to the Engineer In charge.
- 2.6 Checking machines for any loose fasteners/ bolts etc., vibration, oil leakage and missing parts/ guards during preventive maintenance and removing the same.
- 2.7 If the machine is not spared for preventive Maintenance by the production as per schedule, contractor should intimate the same to the Engineer In-charge and preventive will be done in next month/time allotted.
- 2.8 Condition based maintenance shall be done. As per condition monitoring and on instruction of Engineer In-charge, any repair in the machines if required shall be done. Schedule for work to be carried out under condition-based maintenance shall be given by the Engineer In-Charge.
- 2.9 While carrying out inspection/ preventive maintenance work, action plan for the work noticed requiring maintenance shall be generated.
- 2.10 All the tools and tackles shall be arranged by the contractor for execution of work. He has to arrange those at his own cost. Tools may vary from place to place to carry out the different maintenance activity. However, in special circumstances, the tools and tackles which are available and can be arranged & spared by BHEL shall be provided free of cost. EOT cranes, Trolley/truck for material handling if available shall be provided by BHEL free of cost for maintenance purpose as and when required.
- 2.11 The contractor shall inform well in advance in writing the requirement of various items which are to be supplied by BHEL
- 2.12 The work shall be supervised by the contractor himself or through his authorized representatives on day to day basis.

- 2.13 Preventive maintenance register shall be maintained by the contractor and should be able to get the work verified as and when asked.
- 2.14 All the works shall be carried out under the direction and to the satisfaction of BHEL.

### **3. MISCELLANEOUS OTHER MAINTENANCE ACTIVITIES:**

- 3.1 Collection of spares/ material from various stores and blocks to work place/ site shall be carried out by contractor.
- 3.2 Daily and weekly oil top up and lubrication schedule for the above machines will be as per Machine OEM guidelines.
- 3.3 Cleaning, stacking, sorting, handling and upkeep of work center stores (including 5S activities) shall be carried out by contractor.
- 3.4 Contractor to ensure condition monitoring of the machine as per the plan and improve the health of the machine by taking timely actions as per the availability of the machine.
- 3.5 Salvaging/repair work of machine spares & other items shall be carried out by contractor as per requirement.
- 3.6 It will be responsibility of the contractor to give requirement of spare parts from time to time well in advance.
- 3.7 Drawing for major assemblies & component shall be prepared by the drawing section of BHEL or shall be arranged by Dept. However, in case of emergency and for small jobs hand sketch shall be prepared by the contractor.
- 3.8 Contractor shall maintain sufficient and experienced maintenance staff along with their supervisor who will be the main point of contact for the said work.
- 3.9 Data backup (Ghost backup, NC/PLC Archives, PLC backups etc) for all the critical machines will be provided by BHEL at the time of startup. After that all type of data backup will be in the scope of contractor.
- 3.10 Vendor to carry out complete machine levelling and geometrical accuracy restoration once in a year.

## LIST OF CNC MACHINES & TECHNICAL DATA Annexure-II

Sl. No.	Description of machine	Location, Plan No. & (Year of commissioning)
1	<p>CNC HORIZONTAL BORER SPINDLE DIA 160MM</p> <p>Make: - PAMA SPA ITALY</p> <p>Model: - SPEEDRAM 2000+TH65</p> <p>Travel: - X-AXIS (Column): 18,000 mm Y-AXIS (Headstock): 5000 mm</p> <p>Z-AXIS (Ram): 1200 mm – 2000 mm</p> <p>Boring Bar Dia.: 130 mm to 300 mm</p> <p>Other axes details (If any): -MAGAZINE: Q1 &amp; Q11, B AXIS &amp; C AXIS</p> <p>Rotary table (size &amp; capacity) 2,200x1,800 mm &amp; 25 TONS</p> <p>Attachement/Accessory:- UT-300S, Right Angle Head, UT 160, UT-400</p> <p>CNC Control: - SIEMENS SINUMERIK 840D PL</p>	<p>BL-3, BAY-1</p> <p>Plan No.- 1-128 (2008)</p>
2	<p>CNC VERTICAL BORER</p> <p>Make: - PIETRO CARNAGHI, ITALY</p> <p>Model: - AP80TM</p> <p>Travel: - X-AXIS: 7640mm ; Z-AXIS: 4000 mm</p> <p>Rotary table (size &amp; capacity): 6,500 mm &amp; 200 TONS</p> <p>MAGAZINE: Q1 &amp; Q11 B AXIS &amp; C AXIS</p> <p>Attachement/Accessory:- Universal Milling Head</p> <p>CNC Control: - SIEMENS SINUMERIK 840D PL</p>	<p>BL-3, BAY-1</p> <p>Plan No.- 1-124 (2004)</p>
3	<p>CNC FIR TREE GROOVE MILLING M/C DIA 160 MM</p> <p>Make: - PAMA SPA ITALY</p> <p>Model: -SPEEDRAM 2000</p> <p>Travel: - X-AXIS: 11,000 mm, Y-AXIS: 3,500 mm, Z-AXIS: 1,500 mm</p> <p>Max load: 100 TONS</p> <p>Bearing Journal Dia.: 400-950 mm</p> <p>Rotating workpiece dia. (Max): 2,200 mm, Rotor Length: 6000 – 9000 mm</p> <p>Attachement/Accessory:- NA</p> <p>CNC Control: - SIEMENS SINUMERIK 840D PL</p>	<p>BL-3, BAY-1</p> <p>Plan No.-1-132 (2011)</p>
4	<p>CNC GANTRY MILLING MACHINE</p> <p>Make: - MARIO CARNAGHI SPA, ITALY</p> <p>Model: -HGDM 50</p> <p>Travel: - X11-AXIS: Up to 13,000 mm, Z-AXIS: 1500 mm, Y AXIS-6000mm</p> <p>Table (size &amp; capacity): 4,000 mm x 12,000 mm &amp; Load capacity of 10000kg/sq.m</p> <p>CNC Control: - SIEMENS SINUMERIK 840D PL</p>	<p>BL-3, BAY-2</p> <p>Plan No.-2-556 (2017)</p>
5	<p>CNC LATHE</p> <p>Make: - SAFOP SPA, ITALY</p> <p>Model: - LEONARD-100/3500 CNC</p> <p>Travel: -Centers Height Over Bed: 700 mm</p> <p>Bed Width: 1,340 mm; Swing Over Bed: 1,300 mm</p> <p>Swing Over Saddle: 1,050 mm; Distance Between Centers(Z-axis): 14,000 mm</p> <p>Maximum Load Capacity Between Centers: 120 TONS</p> <p>CNC Control: - SIEMENS SINUMERIK 840D PL</p>	<p>BL-3, BAY-2</p> <p>Plan No.-2-543 (2008)</p>

6	CNC VERTICAL BORER TABLE DIA 4M Make: - SCHIESS, GERMANY Model: 40DZ-23 Travel: -X-AXIS: 4,500 mm,Z-AXIS: 2,500 mm Rotary table (size & capacity): 4,000 mm & Load capacity of 40 TONS. Attachement/Accessory:- CNC Control: - SIEMENS SINUMERIK ONE	BL-3, BAY-2 Plan No.-2-472 (1992)
7	CNC FIR TREE GROOVE MILLING M/C DIA 160 MM Make: - PAMA SPA ITALY Model: -SPEEDRAM 2000 Travel: - X-AXIS: 11,000 mm,Y-AXIS: 3,500 mm,Z-AXIS: 1,500 mm Max load: 100 TONS Bearing Journal Dia.: 400-950 mm Rotating workpiece dia. (Max): 2,200 mm, Rotor Length: 6000 – 9000 mm Attachement/Accessory:- NA CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-018 (2011)
8	CNC GANTRY MILLING MACHINE Make: - MARIO CARNAGHI SPA, ITALY Model: -HGHM 50 Travel: - X11-AXIS: Up to 13,000 mm, Z-AXIS: 1500 mm,Y AXIS-6000mm Table (size & capacity): 4,000 mm x 12,000 mm & Load capacity of 10000kg/sq.m CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-051 (2019)
9	CNC HORIZONTAL BORER SPINDLE DIA 200MM Make: - FPT INDUSTRIE SPA ITALY Model: - SPIRIT RM006 Travel: -X-AXIS – 8000 mm;Y-AXIS – 5000 mm;Z-AXIS – 1750 mm With Rotary table (size & capacity) 4X4/120 Tons Attachement/Accessory:- Universal Milling head & Right Angle head CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-030 (2013)
10	CNC HORIZONTAL BORER SPINDLE DIA160 MM Make: - FPT INDUSTRIE SPA ITALY Model: - XM046 Travel: -X-AXIS – 4000 mm;Y-AXIS – 2500 mm;Z-AXIS – 1200 mm With Rotary table (size & capacity): NA Work Piece bed (Size & capacity): 9m X 4 m/ 80 Tons Attachement/Accessory:- CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY- 2 Plan No.- 1-019 (2012)
11	CNC HORIZONTAL BORER SPINDLE DIA160 MM Make: - FPT INDUSTRIE SPA ITALY Model: - XM044 Travel: -X-AXIS – 4000mm,Y-AXIS – 2500 mm,Z-AXIS – 1200 mm With Rotary table (size & capacity): 2m x 2m/ 50 Tons Attachement/Accessory:- Right Angle Head Work Piece bed (Size & capacity): NA CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY- 3 Plan No.- 1-021 (2012)

12	CNC HORIZONTAL BORER SPINDLE DIA160 MM Make: - FPT INDUSTRIE SPA ITALY Model: - XM044 Travel: -X-AXIS – 4000mm,Y-AXIS – 2500 mm,Z-AXIS – 1200 mm With Rotary table (size & capacity): 2m x 2m/ 50 Tons Work Piece bed (Size & capacity): NA Attachement/Accessory:- Right Angle Head CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY- 3 Plan No.- 1-034 (2013)
13	CNC LATHE Make: - SAFOP SPA, ITALY Model: - LEONARD 80/4000CNC Travel: -X-AXIS – 1400 mm,Z-AXIS – 10000 mm (size & capacity)/SOC: 80 Tons / 1800 mm CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-031 (2013)
14	CNC LATHE Make: - SAFOP SPA, ITALY Model: - LEONARD 80/4000CNC Travel: -X-AXIS – 1400 mm,Z-AXIS – 10000 mm (size & capacity)/SOC: 80 Tons / 1800 mm CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-033 (2013)
15	CNC VERTICAL BORER TABLE DIA 4M Make: - MARIO CARNAGHI, GERMANY Model: -TG40 Travel: -X-AXIS – 4900 mm;Z-AXIS – 2600 mm Rotary table (size & capacity) 4 m dia. / 80 Tons CNC Control: - SIEMENS SINUMERIK 840D PL	BL-15, BAY-2 Plan No.-1-043 (2015)