

NOTICE INVITING EXPRESSION OF INTEREST

Date: 21.02.2017

Sealed Expression(s) of Interest (EoI) are invited through registered post/speed post/courier/by hand on or before **19.04.2017 up to 01:30 PM** from **capable and interested parties** for the under-mentioned work. EoI documents can be downloaded from the EoI section of the website of BHEL: www.bhelhwr.co.in & www.bhel.com.

Last date of **SUBMISSION** of EoI : **19.04.2017**
Place of **SUBMISSION** of EoI : **Dy. General Manager**
Maintenance & Services
Central Foundry Forge Plant
Bharat Heavy Electricals Limited
Ranipur, Haridwar – 249403,
Uttarakhand, India

Parties are required to ensure at their end that EoI documents complete in all aspects reaches in CFFP on or before EoI opening date and time without any plea of delay on any account.

For more details, please visit our website www.bhelhwr.co.in or may contact on:
+91 1334 281064, e-mail: nkumar@bhelhwr.co.in.

EoI no. & date	Name of work
EOI:FF:16:MFG:RM: ME:08 dt. 21.02.2017	Reconditioning of Hydraulic System of 32/65 mT Manipulator in Heavy Forge Shop

Note:

1. BHEL reserves the right to accept or reject any / all application(s) without assigning any reason thereof.
2. If any document(s) submitted by vendor is/are found false at any stage, the EoI (offer) will be cancelled immediately.
3. BHEL will not be responsible for the loss or delay of EoI documents in transit in any case.
4. All further corrigenda, addenda, amendments, time extensions, clarifications etc. to the EoI, if any, shall be hosted only on our website.
5. This notice is accompanied by details of EOI and 4 annexures, namely:
Annexure – 1: Indicative Scope of Work
Annexure – 2: Technical Features of the System
Annexure – 3: Details of Vendor's Experience
Annexure – 4: Expectations from renovated/upgraded system



SUBJECT: Reconditioning of Hydraulic System of 32/65 mT Manipulator of Heavy Forge Shop, CFFP

1. Introduction:

This Expression of Interest (EoI) seeks response from organizations/companies/industries that are willing to and are capable of designing, engineering, manufacturing, assembling, reconditioning/retrofitting, erection, commissioning, testing, servicing and providing spare parts for the Hydraulic System of Manipulator (32/65 mT capacity) in CFFP, BHEL Haridwar.

1.1 About Bharat Heavy Electricals Limited (BHEL):

BHEL is a leading state owned company wherein Government of India is holding 63.06% of equity. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing company of its kind in India engaged in core sectors of the economy, viz. Power, Transmission, Industry, Transportation (Railways), Renewable Energy, Oil & Gas, Water and Defence with over 180 products offerings to meet the needs of these sectors. A widespread network of 17 Manufacturing Divisions, 2 Repair Units, 4 Regional Offices, 8 Service Centres, 6 Overseas Offices, 6 Joint Ventures, 15 Regional Marketing Centres and current project execution at more than 150 project sites across India and abroad corroborates the humungous scale and size of its operations. BHEL also has a widespread overseas footprint in 80 countries with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW including Belarus, Bhutan, Egypt, Indonesia, Iraq, Kazakhstan, Malaysia, New Zealand, Oman, Rwanda, Sudan, Tajikistan and UAE. The high level of quality & reliability of BHEL products is due to adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world including General Electric Company, Alstom SA, Siemens AG and Mitsubishi Heavy Industries Ltd., together with technologies developed in its own R&D centres.

1.2 About Central Foundry Forge Plant (CFFP):

Incepted in 1976, CFFP is a strategic business unit of BHEL. CFFP is catering to the needs of steel castings and forgings mainly for the power plant equipment along with other industries such as steel, cement plants, defence, ship building etc. CFFP has received various accolades and certificates such as ISO-9001 from BVC, ISO 14000 and ISO 18000 from TUV-SUD and ISO 50001 from BSI.

CFFP has Steel Melting Shop (SMS) with capacity to pour 130 T liquid steel to cater to the needs of foundry and forge divisions. It has ability to melt and process wide variety of steel grades right from plain carbon grades to creep resistant, super critical and high chromium stainless steels. Steel Foundry (SF) of CFFP makes steel castings from 500 kg to 63 MT single piece weight and cast fabricated castings up to 120 MT weight. It caters to various needs of power plant manufacturing, steel industry, ship building, defence, infrastructure etc. Heavy Forge Shop (HFS) and Medium Forge Shop (MFS) have facilities

to manufacture heat treated and machined forgings up to 34 MT piece weight with product range including shafts, discs, rings and sleeves. Major facilities in the Forge Shop include:

- 2650 MT and 9000 MT Forging Press with 25/50 mT and 32/65 mT manipulator respectively
 - Reheating and Heat Treatment furnaces
 - Vertical Shaft Furnaces and air/oil/water & mist quenching facilities
 - Vertical oil quenching facility
 - Thermal stability equipment for rotors
 - Turning gears
- Cranes up to capacity of 200 T
- 2. Scope of Cooperation:**

BHEL is seeking Expression of Interest (EoI) from experienced vendors for reconditioning and/or capacity enhancement of Hydraulic System of 32/65 mT Manipulator of 9000 MT Press to meet its operational requirements. Interested vendors of repute with proven credentials of having executed similar work are invited to respond to this EoI, as per indicative scope of work provided in **Annexure – 1**.

Upon receipt of responses against EoI from such vendors, BHEL will review the responses to ascertain suitability of the offer made by the prospective contractor and shortlist the vendors for further discussions. Detailed discussions on commercial and other terms and conditions to float the tender enquiry and subsequently, finalise the Work Order shall be held with shortlisted vendors. The detailed terms and conditions for such a contract shall be mutually agreed upon.

3. Pre – Qualification Requirements:

The prospective vendor shall meet the following qualification requirements as on the date of submission of EoI:

The prospective vendor shall have designed, engineered, supplied, and erected, commissioned, reconditioned/modernized Oil Hydraulic Manipulator 32 T or higher size in India or outside India which are in successful operation for a period of not less than 2 years. The vendor shall furnish the names of such projects, year of order, time of completion, scope of work, customer name, estimated project value, direct contact number and qualification data of sub vendors. (To be substantiated with documentary proof)

The applicants are also expected to financially sound and capable of carrying out the intended work.

4. Brief Description of EoI Process:

The interested prospective vendors shall ensure that their response along with annexures indicating technical features of hydraulic system as per **Annexure-2** and experience in the field of hydraulic system as per **Annexure-3** are received by BHEL on or before 19th April 2017. The response shall necessarily be accompanied with details on company background, product profile, hydraulic system proposed along with its technical details, reference list of customers, performance certificate from

customers, product data sheet (if any) and annual audited financial reports for last 3 (three) years including auditor's report.

In case any further information is needed, vendors can contact CFFP.

The applicant shall submit their offer with all annexures duly signed and stamped.
Your response is to be sent to the following address:

Dy. General Manager
Maintenance & Services
Central Foundry Forge Plant
Bharat Heavy Electricals Limited
Ranipur, Haridwar – 249403,
Uttarakhand, India
Phone: +91 1334 281064
Email: nkumar@bhelhwr.co.in

5. Miscellaneous:

5.1 Right to reject or accept any or all applications:

- Notwithstanding anything contained in this EoI, BHEL reserves the right to accept or reject any application and to annul the EoI Process and reject all applications, at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons thereof. In the event that BHEL rejects or annuls all the applications, it may, at its discretion, invite all eligible vendors to submit fresh applications.
- BHEL reserves the right to disqualify any applicant during or after completion of EoI process, if it is found there was a material misrepresentation by any such applicant or the applicant fails to provide, within the specified time, supplemental information sought by BHEL.
- BHEL reserves the right to verify all statements, information and documents submitted by the applicant in response to the EoI. Any such verification or lack of such verification by BHEL shall not relieve the applicant of his/her obligations or liabilities hereunder nor will it affect any rights of BHEL.
- Acceptance/communication/discussion with one or any of the applicants shall not be interpreted in the way of work order by any applicant. The course of action including tender enquiry, placement of WO etc. shall be governed by BHEL's Works Policy 2016, Fraud Prevention Policy etc.

5.2 Governing Laws & Jurisdiction:

The EoI process shall be governed by, and construed in accordance with, the laws of India and the Courts at Haridwar (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with the EoI process.

Annexure – 1

Indicative Scope of Work

S. No.	Work Description
1	Study of design of Hydraulic System of Manipulator including all assemblies, sub-assemblies, items
2	Designing renovated hydraulic system by replacement of old or worn out parts by replacement with new parts and/or upgradation to state-of-art technology
3	Getting the new/renovated design (vendor to submit complete part list of all assemblies and sub-assemblies indicating sub-vendors wherever applicable) approved by BHEL
4	Transportation of material from origin to CFFP, BHEL Haridwar
5	Dismantling of existing hydraulic system
6	Erection and commissioning (including supervision and manpower) of new/renovated system
7	Testing and proving of the new/renovated system to meet BHEL's operational requirement and testing parameters
8	Applicant will provide list of mandatory and optional spares separately clearly indicating price of the same
9	Applicant will also provide guarantee of the established system and provide service for the same (period of guarantee/service to be specified)
10	Training of BHEL engineers to enable them to operate and maintain the hydraulic system

Note:

1. Vendor will also quote approximate budget/price for the entire work including design, supply, erection, commissioning, testing and proving of the system, supply of spares and provision of services.
2. Drawings of the existing system will be provided by BHEL. Also, supply of electricity and industrial water for the E&C will be in BHEL scope.

Annexure – 2

Technical Features of the System

S. No.	Technical Detail
1	<p>System comprises of:</p> <ul style="list-style-type: none"> • 4 nos. main pumps – Radial Piston Pumps, Axial Piston Pumps etc. • 2 nos. double acting motors operating on 50 Hz, 750 RPM, 500 V, 132 KW each operating for above motors • 3 nos. additional pumps for circulation and pilot operations (along with motors) • Loading/unloading valves, directional control valves, check valves, pilot operated check valves, throttle valves, pressure reducing valves etc. for all the operations of the manipulator • Valves mounted on 2 nos. functional blocks • Connecting piping • Oil storage tank (4.2 KL) • Other miscellaneous items including electrical actuators, sealing rings, packing glands etc.
2	<p>Functions performed:</p> <ul style="list-style-type: none"> • Rotation of Jaw of manipulator (Both clockwise and anti-clockwise with speed regulation) • Clamping and de-clamping of Jaw of manipulator • Side shifting of Jaw (Parallel and Angular) • Travel of manipulator (to and fro on rail mounted track with speed regulation) • Lifting of jaw (up and down motion)
3	<p>Operating conditions:</p> <ul style="list-style-type: none"> • Pressure: Designed pressure 200 bar. Vendors to submit, design upgrading the working pressure to 250 bar • Temperature: Ambient • Operating Fluid: Hydraulic Oil SS 68/SS 100 • Operating Voltage: 500 V AC \pm 5%. Applicant may propose operation on 415 V with suitable changes in the system • All solenoid operation on 24 V DC

4	<p>Scope of Renovation/modification/up gradation: (At least) Following are to be replaced:-</p> <ul style="list-style-type: none"> • All hydraulic pumps • All hydraulic motors • All digital valves • All proportional valves and feedback system along with their associated electronics and switch gear • All manifolds • All relief valves • All pressure sensors • All hydraulic control pipes, hose pipes and accumulator in vendor scope <p>➤ The electrical control system runs on a S7 300 PLC. Vendor may choose to use any other item including motors, starters, and relays of the existing system during reconditioning.</p>
5	<p>General features:</p> <ul style="list-style-type: none"> • The scope is limited to Hydraulics and associated electrical and electronics only, necessary to obtain the desired features. • Any other item required other than that mentioned above and necessarily required to obtain the desired performance may also be included. • Structural parts of the manipulator are not in scope.

Note:

1. Hydraulic circuit drawing of the manipulator is attached for reference.
2. The provided scope is only indicative in nature and the applicants are invited to provide comments on the same.
3. Interested vendors are **strongly advised to visit CFFP** and study the subject hydraulic system hands-on.

Annexure – 3

Prospective Vendor's Experience in the Field of Hydraulic Systems

S. No.	Requirement	Response (YES/NO) and Remarks, if any
1	Whether the applicant has experience in designing, engineering, supplying, and erection, commissioning, reconditioning/modernization of Oil Hydraulic Manipulator 25 T or higher size in India or outside India which are in successful operation for a period of not less than 2 years	
2	Whether company background and its product profile along with technical details for hydraulic systems that is being offered to BHEL under this EoI are enclosed.	
3	Whether product data sheet and other details are enclosed as per PQR.	
4	Whether applicant's customers' reference list is enclosed	
5	Whether applicant's audited annual financial reports including auditor's report for last 3 years are enclosed	

Annexure – 4

Expectations from the Renovated and/or upgraded system

S. No.	Description	Value
1	Tongs clamping moment	65 Mpm
2	Carrying capacity	32 Tons
3	Maximum tong opening	As per existing system
4	Minimum tong opening	As per existing system
5	Top most position of horizontal tongs axis above rail top	2000 mm
6	Bottom most position of horizontal tongs axis above rail top	1000 mm
7	Vertical lift of horizontal peel	1000 mm
8	Horizontal parallel side shifting of peel	± 250 mm
9	Tongs turning speed infinitely variable up to	Approx. 8 rpm
10	Travelling speed infinitely variable up to	Approx. 30 m/min
11	Maximum operating pressure	Approx. 250 bar