

**BHARAT HEAVY ELECTRICALS LTD.
CENTRAL FOUNDRY FORGE PLANT
RANIPUR, HARDWAR, INDIA
MAINTENANCE-FORGE SHOP**

FF: 16: MFG: RC: EEME: 01

Dt. 11/01/2017

TENDER NOTICE – OPEN TENDER

Two part Tenders in Sealed Envelopes are invited from technically and financially capable parties, having experience in work similar to- and interested in- the under mentioned works. The tender documents are available at website www.bhel.com/www.bhelhwr.co.in in Tender Notification Section which can be downloaded. The tender should be submitted to the **tender box placed in Tender ROOM** on or before **2/3/2017** at **1:30PM**, which will be opened on the same day at **2:00 PM** in presence of the bidders who wish to be present at:

Tender Room

***Administrative Building
CFFP, BHEL Haridwar – 249403***

Bidders are advised to inspect the site before quoting their rates. Bidders are also advised to go through the Special Instructions attached to this notice.

BHEL reserves the right to reject any or all of the tenders without assigning any reason thereto.

Tender No. & Date	Description of Work	Earnest Money	Total Time of completion	Tender Cost
FF: 16: MFG: RC: EEME: 01 Dated:11/1/2017	Renovation and retrofitting work of electrical and electronic control system along with Hydraulics of 2650T forging Press and 25T manipulator in medium forge shop.	Rs. 13,01,260/	14 Months	Nil

(Anil Kumar Maurya)
Dy.Manager/M&S
CFFP, BHEL
Ranipur, Haridwar
Uttarakhand,249403
INDIA

Copy To. : DGM (works) : for deputing finance representative for tender opening.

SPECIAL INSTRUCTIONS

1. Kindly read this set of Special Instructions carefully before filling up the tender form.
2. The Tender Document Contains:-

<p><i>Technical Specifications</i></p> <p><i>Acceptance Criteria</i></p> <p><i>General Terms and Conditions</i></p> <p><i>Commercial Terms and conditions</i></p> <p><i>Pre-Qualifying Criteria</i></p> <p><i>Price Bid</i></p> <p><i>Integrity Pact</i></p> <p><i>Bank guarantee Performa</i></p> <p><i>Consortium Bank List</i></p>	<p><i>Annexure A (Page no. 05-15)</i></p> <p><i>Annexure B (Page no. 16-17)</i></p> <p><i>Annexure C (Page no. 18-20)</i></p> <p><i>Annexure D (Page no. 21-27)</i></p> <p><i>Annexure E (Page no. 28-29)</i></p> <p><i>Annexure F (Page no. 30)</i></p> <p><i>Annexure I (Page no. 31-38)</i></p> <p><i>Annexure II (Page no. 39-40)</i></p> <p><i>Annexure III (Page no. 41)</i></p>
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3. **Pre-Qualification Requirements placed at Annexure E must be fulfilled by the vendor to participate in the tender and submitted along with Techno-Commercial Bid.**
4. The bidders are to submit the tender form along with all Annexures as well as this set of Special Instructions; all pages duly ink signed.
5. The tender is to be submitted in two parts, viz.: i) Techno Commercial Bid and ii) Price Bid.
6. Both the Techno Commercial Bid and Price Bid are to be sealed separately in separate envelopes super-scribed with “**Techno Commercial Bid for Tender no. : “FF: 16: MFG: RC: EEME: 01”** and “**Price Bid for Tender no. : “FF: 16: MFG: RC: EEME: 01”**” respectively and then placed in a common envelope super-scribed with “**Tender for Tender No.: “FF: 16: MFG: RC: EEME: 01”**”. The Techno Commercial Bid must also contain an un-priced copy of Price Bid.
7. Only the Techno Commercial bid will be opened on the day of tender opening. The Priced Bid will be opened only if Techno Commercial Bid(s) are found Technically Suitable & Acceptable. Date of opening of Price Bid will be intimated to all technically suitable and acceptable bidders at a suitable time.
8. Once Price Bids are opened and accepted by BHEL, the same cannot be withdrawn by the bidder for whatsoever reasons. In case a bidder withdraws his/her/their tender, suitable action may be taken by BHEL as deemed fit. This may include black listing of bidder or legal action.
9. If there is a difference found in the figures & words of the offered price. The price given in the words will be considered.

10. All the supporting documents submitted by the vendor must be Ink Signed on each Page & in English language only. *(If the documents are in other Language then their English Translation must be submitted)*
11. The Bidder along with its associate/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 shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice.

12. **Integrity Pact (IP)**

a) IP is a tool to ensure that activities and transactions between the Company and its Bidders/ Contractors are handled in a fair, transparent and corruption free manner. A panel of Independent External Monitors (IEMs) have been appointed to oversee implementation of IP in BHEL.

The IP as enclosed with the tender is to be submitted (duly signed by authorized signatory who signs in the offer) along with techno-commercial bid. Only those bidders who have entered into such an IP with BHEL would be competent to participate in the bidding. In other words, entering into this Pact would be a preliminary qualification. Details of IEM for this tender is furnished below:

Name *Shri. D R S Chaudhary IAS (Retd.)*
Address *E-1/164 Arera Colony*
 Bhopal 462016,
 MP, INDIA
Email *dilip.chaudhary@icloud.com*
Ph: *+91 755 4050495*

b) Please refer Section-8 of IP for Role and Responsibilities of IEMs. In case of any complaint arising out of the tendering process, the matter may be referred to the IEM mentioned in the tender.

Note:

No routine correspondence shall be addressed to the IEM (phone/ post/ email) regarding the clarifications, time extensions or any other administrative queries, etc on the tender issued. All such clarification/ issues shall be addressed directly to the tender issuing (procurement) department

For all clarifications/ issues related to the tender, Please contact:

1. *Anil Kumar Maurya*
Dy. Manager
Forge Shop Maintenance
CFFP, BHEL, HARIDWAR
91-01334-284165
akmaurya@bhelhwr.co.in

2. *Narendra Kumar*
Dy. General Manager
Maintenance & Services
CFFP, BHEL, HARIDWAR
91-01334-281064
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Annexure A
Technical Specifications

S.No.	DETAILED DESCRIPTION / SCOPE OF SUPPLY / SCOPE OF WORK	Remarks
1.0	General system Setup: Electrical	
1.1	The system will consist of two separate SIEMENS make S7-300/400 or higher PLCs, one each for press and manipulator with distributed/remote I/O's and Profibus control as detailed in clauses 2.0 and 4.0.	
1.2	One Main Panel with PLC in control Room along with remote panel located at Accumulator Pump Station for Press.	
1.3	One Main Panel with PLC in control room along with remote panel located on manipulator for Manipulator	
1.4	Two PC's one for operation and other for maintenance.	
1.5	Power Supply system: 415V AC, 3Phase, 3Wire, 50Hz AC supply with ground.	
2.0	Press Control Panel: Located in press control room	
2.1	PLC Panel having SIEMENS SEMATIC S7-300/400 CPU, Power Supply, I/O's Cards, fully wired with Terminal Blocks, Solid State relays, Contactors, MCB and other switch gear items.	
2.2	This panel will interface with the field devices mounted on operator's desk through hard wiring.	
2.3	This panel will interface with Remote Press Panel through profibus.	
2.4	This panel will interface with field devices located inside the cellar ie. Main control, Step control, Planeshing control/mode, long table control, Cross table control etc. and on forging press and table through hard wire.	
3.0	Remote Press Panel: Located at pump station	
3.1	This panel will have communication, Input & Output cards, Power Supply unit, fully wired with terminal blocks, Solid state relays, contactors, MCB and other Switch gear items.	
3.2	This panel will communicate with main press panel with profibus.	
3.3	This panel will communicate with Motor Control Center Panel (MCC) through hard wire for starting of various press motors.	
3.4	This panel will communicate with HT Breaker Panel through Hard wire for controlling HT Pump Motors.	
3.5	This panel will have input /output from HT pumps, Boost pump, Automatic Shut off valve ,Manual Shutoff valve, temperature and pressure sensors for HT pumps.	
3.6	This panel will also have the control system for measurement and control including alarm and emergency shut-off of water level in the Accumulator. There should be provision for display of water level, temperature, pressure and status of various valves and limit switches through LED display.	
4.0	Manipulator Control Panel: Located in press control room	

4.1	PLC Panel having SIEMENS SEMATIC S7-300/400 or higher CPU with distributed /remote I/O's. Fully wired with relays, contactors, MCB, regulated power supply and other switch gear items.	
4.2	This panel will interface with the field devices mounted on operator's desk through hard wiring.	
4.3	This panel will interface with Remote Manipulator Panel through profibus.	
4.4	This panel will interface with MCC Panel for starting of various motors. through hard wire.	
5.0	Manipulator Remote Panel: Located on Manipulator	
5.1	This panel will have communication, Input & Output cards, Power Supply unit, fully wired with terminal blocks, Solid state relays, contactors, MCB and other Switch gear items. Through this panel switching of analog and digital valves and operation of various manipulator operational features will be established.	
6.0	Motor Control Center Panel (MCC Panel Press and Manipulator) Located at pump station near press remote panel.	
6.1	Panel Incomer: MCCB Incomer with Rotary Drive Switch, Digital voltmeter and Ammeter.	
6.2	Star /Delta Starter for Boost Pump.	
6.3	Star/Delta starter for Manipulator Motor M1.	
6.4	Star/Delta starter for Manipulator Motor M2.	
6.5	Star/Delta starter for Pilot Pressure Pump.	
6.6	DOL starter for Manipulator Grease Pump.	
6.7	DOL starter for Manipulator Circulation Pump.	
6.8	DOL starter for Manipulator Cooling pump	
6.9	DOL starter for Manipulator Thruster.	
6.10	DOL starter for Lubrication Pump P1	
6.11	DOL starter for Lubrication Pump P2	
6.12	DOL starter for Lubrication Pump P3	
6.13	DOL starter for Press Grease pump	
6.14	Star/Delta Sump Pump Starter 15 Kw.	
6.15	Star/ Delta Sump Pump Starter 10 Kw.	
6.16	DOL starter for Cooling pump 10Kw	
6.17	DOL Starter for Cooling Pump 10Kw	
6.18	All Starters must have an incomer MCCB rotary switch & MPCB properly interlocked for tripping along with power contactors. Separate fuse for control supply.	
6.19	All Power contactors selected must be 150% of design calculated current rating.	
6.20	All starters must have run, stop and trip LED indications.	
6.21	All Star/Delta starters must have LED based digital Ammeters.	
6.22	Aluminum Bus bar current density 1A/Sq-mm or less	
6.23	Copper Bus bar current density 1.6A/Sq-mm or less.	
6.24	Copper wires for power wiring current density 1.6A/Sqmm or less.	
6.25	Copper wires for Control wiring 1Sqmm or more	
6.26	Control Transformer 415/220 with tappings, minimum 3KVA for control supply. All CTs (Current Transformers) to have 1Amp as secondary rating.	

	Incomer to be provided with LED Based Energy Meter	
7.0	Operators Desk:	
7.1	Complete control desk made of 3mm or more thick metallic structure and painted first with corrosion resistant paint and then with two coats of industrial grey paint. The top cover must be 3mm or more thick metallic and anodized sheet.	
7.2	Fully pre wired for all operational controls through industrial joy sticks, foot switches and control interfaces for proper operation of press and manipulator.	
7.3	The operators desk should contain one PC based HMI system for operator control and monitoring. The PC should be pre-loaded with SIEMENS software and HMI along with licenses and archive software for the tag logging (historical trending, alarms etc.) Touch screen based control should not be used.	
8.0	Programming & Maintenance Kit:	
8.1	One PC based engineering station for diagnostics and maintenance. The PC should be pre-loaded with SIEMENS STEP 7 (SEMAC MANAGER) and HMI along with licenses and archive software for the tag logging (historical trending, alarms etc.):	
8.2	Both the systems (Operators & programming Kit) will have LED monitor of 22 inches or more, CPU will have latest generation core i5 Intel processor, with clock speed 3.0GHz or more ,RAM DDR3/DDR4 8GB or more, 1TB or more hard disk ,wired key board & wired optical mouse.	
8.3	UPS of 500VA or more for EACH SYSTEM SEPERATLY.	

9.0 2650T Forging Press

S.No.	Specification /Operational Feature/Scope of supply	Remarks
9.1	Main control:	
	There should be a closed loop control system incorporating joy Stick, PLC, Servo valve, amplifier card, Encoder/Position sensor etc. to operate the Main Control valve in continuous controlled (PID control) mode to achieve smooth return, stand still, approach and forge positions. All hydraulic, electrical and electronic components will be in scope of vendor.	
9.2	Step Control:	
	A closed loop control system to operate the valves of step control block to achieve selection of single, double and triple cylinder pressure of forging press with proper interlocks. The drive mechanism for operation of valves, along with electrical and electronic components will be in scope of vendor.	
9.3	Switch Control:	
	Provision for operating the press in Pressing and Planishing modes by switching of valve. The drive mechanism for operation of valves, along with electrical and electronic components will be in scope of vendor.	
9.4	Table control; Long Table:	
	There should be provision to Operate the table control valve through solenoid valves of 24V DC in Left and Right directions	

	at slow and fast speeds through joystick mounted on operator Desk. Appropriate position sensors for proper centering of Long Table to be provided.	
9.5	Table control; Cross Table:	
	There should be provision to operate the table control valve through solenoid valves of 24V DC in direction normal to table long movement through joystick mounted on operator. Appropriate position sensors to be provided for positioning at both end limits.	
9.6	Die Clamping;	
	There should be provision to operate the die clamping cylinders through oil hydraulic solenoid valves (220V AC) for in /out operation of plungers in Inching mode from operator desk. Solenoid valves will not in be scope of vendor.	
9.7	Oil Hydraulic Unit;	
	This will consist of one new set of pump & motor, Servo Valves for Main control. Servo valves/digital valves for control of steps and press mode (press/planising) of the system. .	
9.8	Level Control and measurement system:	
	A suitable and reliable method to measure the level of water in the accumulator and control it with HT Pumps. It should also be capable to measure the pressure of Accumulator up to 300bar. It should be synchronized with HT pump and press remote panel. The display of level and pressure to be provided in Press Panel, Remote Panel, and Operator's Desk and a separate large display unit provided at Accumulator Station.	
9.9	Power Cables & Control Cables	
9.9.1	All power cables from MCC panel to Boost Pump, Pilot pressure pump, grease pump & three lubrication pumps.	
9.9.2	All control cables from press panel to field devices, operator's desk, etc.	
9.9.3	All Control cables from remote panel to MCC, HT Breaker Panel, temperature and pressure sensors of three HT motors, automatic shut off valve, manual shutoff valve ,boost pump and three bypass valves.	
9.9.4	All control wiring from Pressure measurement system to remote panel.	
9.9.5	All communication cables between PLC Panel(s), Remote Panel(s), Computer System(s), Operator's Desk(s) etc.	
9.10	Sensors & limit Switches	
9.10.1	Three temperature and pressure sensors for HT pumps.	
9.10.2	Limit Switches for Boost pump, Automatic shutoff valve, Shutoff valve, Long table, Cross table.	

10.0 2650T Forging Press - Hydraulics

S.No.	SYSTEM/ITEM/MATERIAL REQUIRED	DETAILED DESCRIPTION / SCOPE OF SUPPLY / SCOPE OF WORK	QUANTITY
10.1	Centralized Oil Hydraulic (Pilot Pressure) Power Pack	This will consist of Main Tank, Two nos. Pump Motor Sets (One in Normal Operation and other as Standby), Heat Exchangers, Filters, Cooling Pumps (Coupled with main pump or Operated through Separate Motor), Appropriate Oil Flow Control Valves, Temperature and Pressure Gauges etc. All Pilot Control Valves and Proportional Valves for Operation of Different Sub-Systems of Press shall be mounted on this Oil Hydraulic Power Pack itself. For changeover from Operating Pump to the Standby Pump, a changeover switch shall be provided on the Power Pack itself. In case the Power required for Pumps exceeds 15HP appropriate MCC with separate Power Contactors for all the pump-motor sets involved shall be provided with changeover control function available at the control desk. Automatic switching between pumps in case of tripping of running motor to be provided.	01 Set
10.2	Oil Hydraulic Actuation System for Main Control, Step Control and Switch Control.	This will consist of suitable oil hydraulic valves, Cylinder-Piston based Actuation Systems, Pipes, Proportional Valves, Feedback devices etc. The existing Control Actuation Systems are to be completely removed and new control actuation systems are to be accommodated to match the existing different control blocks. The Oil control Valves are to be placed at the Pilot Pressure Hydraulic Unit.	01 Set (for main, switch, step controls)
10.3	Control Unit for Table (Longitudinal) Travel Control.	The existing Table Travel Control Unit with Water Hydraulic Pilot Control is to be replaced with the new Travel Control System consisting of Cylinder-Piston arrangement for controlling table travel control valve. The Pilot control is to be changed to Oil Hydraulic in place of existing Water Hydraulic. Feedback devices are to be provided as per need for a smooth control of table. The existing control blocks are to be completely removed and new control blocks are to be provided. The Oil control Valves are to be placed at the Pilot Pressure Hydraulic Unit. Slow down near Center and Stop at Center Features must be included and incorporated in Electronic and Oil/Water Hydraulic Control Devices.	01 Set
10.4	Control Unit for Die (Cross) Shifting Control.	The existing Die Cross Shifting Control Unit with Water Hydraulic Pilot Control is to be replaced with the new Die Shifting Control System consisting of Cylinder-Piston arrangement for	01 Set

		controlling Cross Shifting control valve. The Pilot control is to be changed to Oil Hydraulic in place of existing Water Hydraulic. Feedback devices are to be provided as per need for a smooth control of Die Shifting. The existing control blocks are to be completely removed and new control blocks are to be provided. The Oil control Valves are to be placed at the Pilot Pressure Hydraulic Unit. Position sensors to be provided for positioning of Die.	
10.5	Replacement of control units suiting to pure water application.	Existing control units are either leaking or not functioning properly due to wear & tear of various internal and external components. To be replaced as per assembly drg no. DEMAG Drg nos. 5030004-04.000, 5030004-04.200 and 5030004-04.400 with modifications on rocker shaft to enable the movements of shaft with horizontal mounted suitable cylinders by replacing the existing solenoid operated pilot valves. Materials of all the blocks should be changed to stainless steel to operate under hydraulic medium as pure water.	03 sets
For # 10.1, 10.2, 10.3, 10.4 & 10.5, the system <u>may be</u> replaced with an equivalent and proven hydraulic block with control combining the functionality of forging press to obtain the desired operational features.			

11.0 25T Rail Bound Manipulator

S.No.	Specification /Operational Feature/Scope of supply	Remarks
11.1	Operation of motors: Start and stop of manipulator motors through MCC and operators desk.	
11.2	Travel; Forward and Backward movement of manipulator with speed regulation, using digital valve along with Servo Valve. There should be foot switch for travel control provided near operator's desk at an appropriate position for ease of control/operation.	
11.3	Jaw Rotation: Clock wise & Anti Clock wise rotation with speed regulation, using digital valve along with Servo Valve. There should be joy stick on operator's desk for jaw rotation control.	
11.4	Jaw; Clamp & Unclamp: Opening and closing of jaws for holding the jobs through digital valves with control using selector switch on operator's desk.	
11.5	Tong Lift; Up & Down: Vertical up and down movement of tong through digital valves with control using selector switch on operator's desk. This function is required to change vertical position of tong as well as inclination of tong axis with respect to horizontal.	
11.6	Tong Lift; Parallel Up & Parallel Down: Up and down movement of tong through digital valves with control using selector switch on operator's desk. The function is required to move tong vertically up and down without changing inclination.	

11.7	Tong Shift; Transverse Left & Right movement of tong through digital valves with control using selector switch on operator's desk. This function is required to change horizontal position as well as horizontal angle of tong axis with respect to manipulator axis.	
11.8	Tong Shift: Parallel Left and Parallel Right movement of tong through digital valves with control using selector switch on operator's desk. The function is required to move tong horizontally left and right without changing angle.	
11.9	Oil Temperature Sensor: A digital sensor mounted on manipulator to measure the temperature of oil.	
11.10	Pump Pressure Sensor: A digital pressure sensor mounted on manipulator to measure the pump discharge pressure.	
11.11	Oil Level Sensor: A digital oil level sensor mounted on manipulator to measure level of oil in tank.	
11.12	Cable trolley /Drag Chain System	
	A new and suitably designed cable trolley/drag chain system for carrying power cables, profibus and house pipe for supply to manipulator.	
11.13	Thruster system for oil accumulator and limit switches	
	The system to be designed to load the oil accumulator with thruster valve mechanism along with synchronized switching by limit switches.	
11.14	Power and Control Cables	
11.14.1	All Power cables from MCC panel to manipulator through cable trolley/drag chain up to motors and thrusters. All these cables to be water, oil, and chemical resistant and fire retardant.	
11.14.2	All control cables from remote panel to valves, limit switches and sensors and other field devices on manipulator.	
11.14.3	All control cables from manipulator panel to MCC panel and Operators desk.	

12.0 Make of Items

S.No.	Item	Make	Remarks
12.1	PLC	Siemens, Europe	Preferably Germany
12.2	Relays	Phoenix	
12.3	Cables, Wires	Siemens, Lapp, Igus	Only Copper Core
12.4	Connectors, Terminal blocks	Phoenix, wago	Screw type. With fuse.
12.5	Pressure Sensors	HYDAC	
12.6	Temperature Sensors	HYDAC	
12.7	Limit Switches	Siemens, BCH	
12.8	Encoders	TWK	Absolute
12.9	Switches, Push Buttons	Siemens, Schneider	
12.10	LED indicators	Siemens, Schneider	
12.11	Joy stick	Spohn & Burkhardt	
12.12	Potentiometer/Variable Resistor	Siemens	
12.13	MCB, MCCB	Siemens, Schneider	
12.14	Contractors	Siemens	

12.15	Fuse Base and Fuse	Siemens	
12.16	Selector switch	Siemens, kaycee	
12.17	Profibus	Siemens	
12.18	Conduits	Reputed	Metallic PVC coated / Stainless Steel
12.19	Panel	Rittal	
12.20	Pressure/Level Sensor 300Bar	ABB/Reputed	
12.21	Proximity Switches	Reputed	
12.22	UPS	APC/ Schneider	
12.23	Computer	DELL/HP	

13.0 Making of panel and Field wiring

S.No.	Specification	Remarks
13.1	Indicators of incandescent lamp type not to be used.	
13.2	Current density less than or equal to 1.6A/SQMM for power conductor of copper only. Aluminum conductors not to be used.	
13.3	PLC Wiring by 0.75mm/1mm flexible multi strand annealed copper wire.	
13.4	Panel Power wire not less than 2.5mm flexible multi strand annealed copper wire	
13.5	Separate 415/230V to 24V DC Power supply in each Panel. (Main & Remote)	
13.6	Separate 10V DC Power supply for Each Main Panel for joysticks.	
13.7	Two 415/220V Transformers in each main panel with tapping for voltage correction	
13.8	Digital outputs of PLC for all purposes except digital signals to control cards to be realized only through Relays. No direct PLC output to be used except for the purpose of interfacing with control cards.	
13.9	Red colour wire to be used for 220V Ac wiring inside panel, Neutral to be black colour.	
13.10	Blue colour wire to be used for PLC wiring and/or for 24 V DC and /or 10V DC.	
13.11	All relays used for Valves should be Solid State Relays.	
13.12	All Terminal Blocks used for control circuit must have in Built fuses. There should be at least 10% terminals provided as spare in each terminal block.	
13.13	Buses should not be used to connect PLC with Relay board.	
13.14	For feedback of 220V AC, Input to PLC should be realized through Relays.	
13.15	All Cards used for Siemens Sematic PLC must belong to same family. Mixing should not be done.	
13.16	All PLC programming should be in LAD. All networks/blocks should be supported with comments. Customized programs with redundancy not to be used.	
13.17	At least 10% Inputs/Outputs and relays should be spare.	

13.18	Proper laying of cables & wires their arrangement/dressing, marking/numbering/feruling, proper termination of wires and cables with lugs/thimble is to be ensured during the erection process.	
13.19	All wires and cables should be protected with proper metallic conduits with PVC coating/Stainless steel conduits and should be rust free. Flexible conduits should also be used if so required specially at termination ends.	
13.20	All profibus cables to be covered through flexible metallic conduits.	
13.21	All logics, design, interlocks as per existing electrical drawing and/ proven and engineered system by vendor subject to agreement/approval by BHEL	
13.22	Manufacturing Drawings to be approved before manufacturing by BHEL.	

14.0Exclusions

S.No.	Specification	Remarks
14.1	HT Panel	
14.2	HT Motors & Pumps	
14.3	Manipulator Hydraulic Valves, Pumps and Motors	

15.0Scope of work.

- 1) Dismantling of all existing control panels, Junction Boxes, control and power cables along with operator desk of existing system.
- 2) Erection of new Press PLC panel in control room and remote panel near Pump station (In place of old panel).
- 3) Erection of new Manipulator PLC panel in control room and remote panel on Manipulator.
- 4) Erection of new MCC panel at pump station in place of old MCC panel.
- 5) Laying of profibus cable along with conduits and clamps from Main PLC panels to Remote panels.
- 6) Laying of complete control cables along with conduits from Remote panel to field devices on manipulator. Screened cables along with conduits from remote panel to EMG and Encoders.
- 7) Laying of complete control cables along with conduits from Remote panel to field devices on MCC panel, HT Panel And field devices mounted on HT Pumps, Shut off valve, Automatic Shutoff Valve and Boost Pump. Complete mounting and cabling with conduit of Level measurement system
- 8) Laying of complete control cables with conduits from Main Press PLC panel to Field devices mounted in cellar and on operators Desk. Screened cables along with conduits from Main Press PLC to EMG and Encoders.
- 9) Laying of complete control cables with conduits from Main Manipulator Panel to Field devices mounted on Operators desk and on MCC.
- 10) Laying of Power cables from MCC to Manipulator & on the moving trolley system.

- 11) Dismantling of Hydraulic Blocks and associated piping, Erection and Commissioning of new Hydraulic control system supplied.
- 12) Installation and erection of new hardware and software.
- 13) Calibration and scaling of new sensors and encoders.
- 14) Testing of safety interlocks, functionality tests and no load trials.
- 15) Startup including hot trials.

16.0 General terms and conditions

16.1 The project will be turnkey basis including dismantling, erection, commissioning, cold trial and hot trial. All the man and material require for successful dismantling, erection and commissioning is to be arranged and supplied by vendor. Any other item/material require for the proper functioning or to attain desired features should be quoted and included in the scope of supply and will be on vendor account.

16.2 Services like oxygen, water, air, cranes, and electrical supply only will be provided by CFFP/ BHEL

17.0 Drawing and Documentation (In English Language only)

1. Complete Electrical drawing including layout, wiring diagram, bill of material, itemized product catalogue and details, interlocks and alarms hardcopy in leather bonded folders. The documents should not be photocopies but good quality printouts.- Five Sets
2. Complete Hydraulic drawing, layout, product catalogue, bill of material in leather bonded folders. The documents should not be photocopies but good quality printouts – Five Sets.
3. Operation and Maintenance Manual-Five Sets
4. Alarm list and fault diagnostic manual-Five Sets
5. A soft copy of above documents(1,2,3&4) in one Flash Drive- Five Sets
6. Copy of PLC Program & HMI Program in one Flash Drive.- Five Sets
7. Image /Backup of all software and programs installed/loaded on PLC and PC Based HMI along with Licenses (Using Norton Ghost or other Suitable software) on a (Seagate/WD/Kingston make portable) SSD/flash drive.- Three Sets

18.0 Spares:-

S.No.	ITEM	QUANTITY (NO.)	Remarks
1.	CPU	01	Of each type
2	AI,DO,AO,DO	02	Of each type
3	Power Supply 24V	01	Of each type
4	Power Supply 10V	02	Of each type
5	Relays	20	Of each type
6	Amplifier card	01	Of each type

7	Encoder	02	Of each type
8	Proximity Switch	05	Of each type
9	Pressure Sensor	02	Of each type
10	Temperature Sensor	02	Of each type
11	Led Indicator	50	Of each colour & type
12	Push Button	20	Of each colour & type
13	Selection switch/any other switch	02	Of each type
14.	Variable Resistances/Potentiometers	02	Of each type
15	Joy sticks	01	Of each type
16	Any other electronic card	01	Of each type
17	Limit Switch	05	Of each type

Annexure B**PERFORMANCE PARAMETERS AND SPECIFICATIONS OF 2650T PRESS**

Final acceptance shall be made by M/s CFFP/BHEL at BHEL, Hardwar following successful completion of erection and commissioning, achieving the operational & functional accuracies of the machine as per proving test and performance criteria as detailed below. The equipment shall be deemed to have been successfully Erected / Commissioned after it gives desired accuracy & Speed as mentioned below of technical specifications for five consecutive jobs or one month period whichever is earlier. Plannishing Speed-50/65strokes/min. Press and Manipulator should be able to perform all the features and actions as mentioned in Annexure A clause no.9, 10 & 11.

MAKE-DEMAG MEER, YEAR OF MANUFACTURE – 1976		
SL. NO.	DESCRIPTIONS	VALUE
01	PRESS	
	MAX. OPERATING PRESSURE (WATER-HYDRAULIC)	200BAR
	PRESS POWER STEP I – FORGING	8.83 MN
	PRESS POWER STEP II – FORGING	17.67MN
	PRESS POWER STEP III – FORGING	26.50 MN
	PRESS POWER STEP I – PLANNISHING	5.83 MN
	PRESS POWER STEP II – PLANNISHING	14.67 MN
	RETURN POWER	3.00 MN
	STROKE	2000mm
	DAYLIGHT	4000 mm
	COLUMN SPACING	3400x1800 mm
	CLEARANCE BETWEEN COLUMN PROTECTIVE SLEEVES	2750x1800 mm
	MAXIMUM RADIUS FOR ECCENTRIC LOADING AT FULL PRESS POWER	300 mm
	OVERALL HEIGHT ABOVE FLOOR LEVEL	9650 mm
	OVERALL HEIGHT BELOW FLOOR LEVEL	3450 mm
	SPEED OF RETURN AND APPROACH	0.3m/SECOND
02	SHIFTING TABLE	
	TABLE DIMENSIONS (USEFUL CLAMPING AREA)	1800x5000 mm
	MAXIMUM OPERATING PRESSURE (WATER-HYDRAULIC) SHIFTING FORCE	200 BAR
	STROKE OF SHIFTING CYLINDER	0.70 MN

	SHIFTING STROKE OF TABLE FROM PRESS CENTRE TO EITHER SIDE (BY RESETTING THE COUPLING PIN)	3000 mm
03	DIE TRANSVERSE SLIDE	
	MAXIMUM OPERATING PRESSURE (WATER-HYDRAULIC)	200 BAR
	SHIFTING FORCE	0.24 MN
	STROKE OF SHIFTING CYLINDER (FOR 2DIES)	3300 mm
04	DIE CLAMPING DEVICE	
	MINIMUM AND MAXIMUM OPERATING PRESSURE(OIL-HYDRAULIC)	60/70 BAR
	4 CYLINDERS, 180 mm DIA. CLAMPING FORCE (BY CUP SPRINGS)	4x95 KN = 380 KN
	MINIMUM RELEASING FORCE (OIL-HYDRAULIC)	4x150 KN = 600 KN

PERFORMANCE PARAMETERS AND SPECIFICATIONS OF MANIPULATOR

MAKE-DEMAG MEER, YEAR OF MANUFACTURE –1976 TYPE HSP 50		
SL. NO.	DESCRIPTIONS	VALUE
06	TECHNICAL DATA	
	TONGS CLAMPING MOMENT	50 Mpm
	CARRYING CAPACITY	25 TONS
	MAXIMUM TONGS OPENING	1100 mm
	MINIMUM TONGS OPENING	400 mm
	TURNING CIRCLE OF FULLY OPENED TONGS	2160 mm
	TOP MOST POSITION OF HORIZONTAL TONGS AXIS ABOVE RAIL TOP	1980 mm
	BOTTOM MOST POSITION OF HORIZONTAL TONGS AXIS ABOVE RAIL TOP	1180 mm
	VERTICAL LIFT OF HORIZONTAL PEEL;	800 mm
	HORIZONTAL PARALLEL SIDE SHIFTING OF PEEL	± 250 mm
	TONGS TURNING SPEED INFINITELY VARIABLE UPTO	APPROX. 10 RPM
	TRAVELLING SPEED INFINITELY VARIABLE UPTO	APPROX. 60 m/min
	DISTANCE BETWEEN RAIL CENTRES	3200 mm
	MAXIMUM OPERATING PRESSURE	APPROX. 130 atm. g.
	OPERATING BY MEANS OF 2 ELECTRIC MOTORS EACH OF 75 KW AT 1000RPM, 415V, 50HZ, 2 PUMPS EACH DELIVERING	220 LITRES/min
	ASSOCIATED PISTON-TYPE ACCUMULATOR WITH AIR FILL	125 LITRES CAPACITY

*Annexure C***GENERAL TERMS AND CONDITIONS OF TENDER ENQUIRY****1. Submit the tender in two parts i.e.****Part-I Techno-Commercial Bid****Part-II Price Bid**

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

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

The bidder can download the technical and commercial specifications from our website: www.bhelhwr.co.in or www.bhel.com, other than the relevant drawings.

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

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

- (a) Specification of the material offered should be strictly as per CFFP/BHEL specifications of Enquired material in tender documents. **Deviations if any must be indicated clearly in the offer.**
- (b) All commercial terms i.e. packing, forwarding, Custom Duty, Additional Duty, ST/STT/VAT/CST, Excise duty/CVD, Bank Charges, payment terms & Insurance etc as applicable should be clearly mentioned **except Price** .Also mention present rate of applicable taxes & duties even if inclusive in rates.
- (c) Confirm to submit all required commercial documents (tax invoice, CENVATable duplicate copy of invoice, packing list, transit sale agreement etc.) & technical documents (TC/GC/QP etc.)
- (d) Registration Numbers of SSI, Central Excise, Sales tax, Income tax, DGS & D, ECC etc.
- (e) **Un-priced copy of Price Bid** (i.e. Annexure F, confirming supply of all materials as per specification)

Part-II - Envelopes super scribed with Price Bid should contain priced copy of Price Bid. The price should be mentioned both in figures and words.(In case difference found in figures and words ,the price mentioned in words will prevail)

2. PART II (PRICE BID)

The price bid with price in two sets (one original + one copy) in separate envelope for the complete scope as specified in the price format attached in Annexure - I.

2.0 Prices should be quoted as under:

2.1 For Imported- CIF- Nhavasheva Port Mumbai/Mumbai

For Indigenous - FOR Destination

1. Transportation & Transit Insurance to be taken care of by Vendor.
2. Applicable Sales Tax, Excise duty and any other statutory levy should be indicated separately and clearly in the quotation. The comparison between foreign and indigenous bid shall be done based on the landed price basis (FOR Destination). When indigenous

bidders do not quote "FOR BHEL" basis, the freight rates as per BHEL's transport contract shall be taken into account.

2.2 Part-I containing techno-commercial part will be opened on the date and time specified in the covering letter in the presence of those tenderers who wish to attend.

2.3 The part II Price Bid along with supplementary price bid if necessary will be opened at a later date for those bidders whose techno-commercial bids have been found acceptable.

Note: Authorized signatory should authenticate all tender documents.

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

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

5. Evaluation of Bids:

Preliminary examination of bids:

- a)- CFFP/ BHEL will examine the bids to determine whether they are complete, whether any computational errors have been made, whether required security have been furnished, whether the documents have been properly signed, and whether the bids are generally in order.
- b)- Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price, which is obtained by multiplying the unit price and quantity, or between subtotal and the total price, the unit or subtotal price shall prevail, and the total price shall be corrected. If there is a discrepancy between words and figures, the amount in words will prevail. If the Bidder does not accept the correction of errors, the bid will be rejected and the bid EMD will be forfeited.

5.1 Conversion to Single Currency:

CFFP/ BHEL will convert all prices expressed in US Dollars or Euro in to Indian Rupees at the selling exchange rate in India (TT selling rate of SBI) on the date of Part-I bid opening.

5.2 Technical Evaluation:

CFFP/ BHEL will carry out a detailed evaluation of the bids to determine whether the technical aspects are in accordance with the requirements set forth in the bidding documents. In order to reach such a determination, CFFP/ BHEL will examine the technical aspects of the bids on the basis of the information supplied by the bidders, taking into account the following factors:

- a- Overall completeness and compliance with the Technical Specifications and Drawings; deviations from the Technical Specifications as to the bid; suitability of the facilities offers in relation to the environment and climatic conditions prevailing at the site; and quality, function and operation of any process control concept included in the bid. The bid that does not meet minimum acceptable standards of completeness, consistency and detail will be rejected for non-responsiveness.
- b- Undertaking for performance guarantee/ restoring of the specified original performance criteria laid down in the given scope of supply, erection and commissioning as per Annexure- A ,B & D to be furnished by the bidder and will form part of the technical evaluation.

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

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

7 Agent /Agency Commission: Payment of any kind at any stage will not be made to Agent on account of agent commission or otherwise by CFFP BHEL Hardwar. Vendors availing services of agents shall have to submit copy of agent agreement specifying agent commission.

8. Vendors are strongly advised to visit the site before submitting their offers as any conflict arising afterwards due to any type of assumption will not be entertained.

Annexure D
Commercial Terms and Conditions

S.No	Description	Vendors Confirmation
1	<p><u>PAYMENT TERMS:</u></p> <p>Indigenous Supplier: 80% payment of Supply value (including total taxes and duties) shall be made within 45 days from the date of receipt of material at CFFP / BHEL. Balance 20% of Supply value and Erection & commissioning charges will be paid after commissioning of equipment and on receipt of Performance Bank Guarantee (PBG) valid for 30 days beyond the warranty period by Supplier from any of the Consortium Banks of BHEL for 10% of total Work Order value in the prescribed Format. The PBG confirmation charges shall be borne by vendor.</p> <p>For foreign supplier: 80 % Payment of Supply value shall be made through USANCE L/C (Ist)on 70th day of bill of lading date (B/L date) and balance 20% of supply value of Work Order plus 100% of erection & commissioning (E & C) value of Work Order will be paid through L/C (IInd) after commissioning of equipment and on receipt of Performance Bank Guarantee (PBG) valid for 30 days beyond the warranty period by Supplier from any of the Consortium Banks of BHEL for 10% of total WO value in the prescribed Format. The PBG confirmation charges shall be borne by vendor.</p> <p>First L/C will be opened by CFFP BHEL before 2 months from scheduled delivery of WO and after receipt Security Deposit (CEBG) and Order Acceptance.</p> <p>Second L/C will be opened 15 days prior to the scheduled and confirmed arrival of the technicians of supplier with their names and details for E&C at CFFP BHEL Haridwar.</p> <p>Note : Any deviation, in Payment Terms by bidder w.r.t. tender conditions following loading shall be applicable:</p> <p>(a) Base rate of SBI (as applicable on the date of bid opening: Techno commercial bid opening in case of two part bids) + 6 %, shall be considered for loading for the period of relaxation sought by bidders.</p> <p>(b) On account of payment through LC, Bank charges shall also be loaded for the deviation in</p>	

	<p>(i) opening of LC by BHEL and</p> <p>(ii) Period and amount of LC w.r.t. above NIT terms are final</p> <p><u>L/C Schedule Only applicable for foreign bidders, No L/C to be opened for the Indian bidder)</u></p>	
2.	<p>EMD will be INR 13,01,260/- (Rupees Thirteen lakhs, one thousand, two hundred sixty only) or equivalent applicable currency. (The bids without accompanying EMD will not be considered for evaluation). EMD to be in the form of Cash or electronic transfer/DD/Pay order. The EMD may be accepted only in the following forms:</p> <p>(i) Cash deposit as permissible under the extant Income Tax Act (before tender opening) SBI BANK A/C NO – 10667995469, IFSC: SBIN0000586, A/C Name CFFP/BHEL, RANIPUR, HARIDWAR with proper remarks containing purpose & name of depositor.</p> <p>(ii) Electronic Fund Transfer credited in BHEL account (before tender opening)</p> <p>(iii) Banker's cheque/ Pay order/ Demand draft, in favour of BHEL CFFP, Bharat Heavy Electrical Limited, Hardwar payable at State Bank of India, Ranipur, Hardwar (along with offer)</p> <p>EMD by the Tenderer will be forfeited as per NIT conditions, if:</p> <p>i) After opening the tender and within the offer validity period, the tenderer revokes his tender or makes any modification in his tender which is not acceptable to BHEL.</p> <p>ii) The Contractor fails to deposit the required Security deposit or commence the work within the period as per LOI/ Contract.</p> <p>iii) EMD by the tenderer shall be withheld in case any action on the tenderer 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. Y-2016</p> <p>iv) EMD given by all unsuccessful tenderers shall be refunded normally within fifteen days of award of work.</p> <p>v) EMD shall not carry any interest.</p> <p>vi) EMD of successful tenderer will be retained as part of Security Deposit.</p>	
3.	<p><u>SECURITY DEPOSIT:</u> Vendor has to submit Security Deposit for 5% of the total WO value (supply + E&C) in the currency of order within 30 days from the date of Work order (but before LC opening in case of foreign vendors).</p> <p>Modes of deposit: The balance amount to make up the required Security Deposit of 5% of the contract value may be accepted in the following forms:</p> <p>i) Cash (as permissible under the extant Income Tax Act)</p> <p>ii) Local cheques of Scheduled Banks (subject to realization)/ Pay Order/ Demand Draft/ Electronic Fund Transfer in favour of BHEL</p> <p>iii) Bank Guarantee from Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. BG shall be kept valid up to 30 days from the date of commissioning of equipment at CFFP / BHEL. The Bank</p>	

	<p>Guarantee format should have the approval of BHEL</p> <p>iv) 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)</p> <p>v) 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)</p> <p>(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)</p> <p>If the supplier fails to submit the Security Deposit even within 60 days from the date of WO, BHEL reserves the right to cancel WO & forfeit the EMD given by the supplier. In addition, in such case, action will be initiated in line with BHEL's extant guidelines for Suspension of Business dealings with Suppliers.</p> <p>Note : In case of foreign vendors if some indigenous supply is involved then Security Deposit (Bank Guarantee) shall be of combined order value (Import order value + indigenous order value in foreign currency) and to be submitted by foreign vendor.</p>	
4.	<p>Time period for Supply and Commissioning:</p> <p>For foreign vendor : Design, approval of scheme/Drawings, procurement and supply & dispatch of all components to CFFP/ BHEL, Hardwar, India = 10 months (FOB - port of dispatch, B/L date) from the date of Work Order</p> <p>For Indigenous vendor: Design, approval of scheme/Drawings, procurement and supply & dispatch of all components to CFFP/ BHEL, Hardwar, India = 11 months (FOR - CFFP, BHEL, Haridwar) from the date of Work Order</p> <p>The equipment will be handed over to the vendor for Erection and commissioning within a period of 3 months (maximum) from the date of receipt of material at CFFP, BHEL Haridwar.</p> <p>Dismantling, Erection, commissioning and proving out= 3 months (This three months shall be mutually agreed between CFFP/BHEL and the successful bidder, depending on the production schedule of CFFP)</p> <p>Vendors quoting period of Supply higher than above will be loaded at the rate of 0.5% of contract value per week.</p> <p>Vendors quoting period of Dismantling, Erection & commissioning higher than above will be loaded at the rate of 0.5% of contract value per week beyond 3 months but limited upto 6 months.</p> <p>If the time period of supply is more than 2 months from scheduled delivery (i.e. B/L date for foreign supplier and FOR Haridwar Delivery date for Indigenous) and /or period of dismantling, erection and commissioning is more than 6 months, the offers will be rejected.</p> <p>- Note: Vendor should quote their earliest schedule for Supply and E&C against the schedule indicated above. BHEL, however, reserves the right to accept an offer not meeting the above schedule.</p> <p>-All Indian suppliers or Foreign supplier where some Indian components are being offered are required to be FOR CFFP basis.</p>	

	-All Foreign supplier are required to supply material on CIF Nhavasheva Mumbai basis.(Only for foreign component)	
5.	<p><u>P.B.G. TERMS:</u></p> <p>Performance Bank Guarantee (PBG) valid for 30 days beyond the guarantee / warranty period by Supplier from any of the Consortium Banks of BHEL for 10% of total WO Value (supply + E&C) in the prescribed Format. The PBG confirmation charges shall be borne by vendor. This bank guarantee shall have to be submitted before release of last balance payment.</p> <p>Note : In case of foreign vendors if some indigenous supply is involved then PBG value shall be of combined order value (Import order value + indigenous order value in foreign currency) and to be submitted by foreign vendor.</p>	
6.	<p><u>WARRANTY/ GUARANTEE:</u> Vendor has to provide a guarantee of 12 months from the date of commissioning. Guarantee period less than 12 months is not acceptable and offers quoting guarantee period less than twelve months will be rejected.</p>	
7.	<p><u>SUBMISSION OF BANK GUARANTEE :</u></p> <p>All bank guarantees i.e Security deposit /PBG should be from one of the BHEL consortium banks (annexure-III) and the bank guarantees should be in the proforma as prescribed by BHEL (annexure-II). BGs shall be from one of the Consortium Banks of BHEL or from a reputed Bank and confirmed by any Consortium Bank of BHEL. All bank charges on account of issuance and confirmation of BG whether incurred in India or outside India will have to be borne by the vendor</p>	
8	<p><u>TAXES:</u> All statutory taxes, if any, will be deducted at source & to be borne by the beneficiary. Tax deduction certificate shall be issued at the end of relevant quarter.</p>	
9	<p><u>Dismantling, Erection and Commissioning Charges:</u></p> <p>For Indian Suppliers: It should be quoted in Rupees.</p> <p>For Foreign Suppliers: If supervision is being carried out by persons residing in India, it should be quoted in Indian Rupees</p>	
10	<p><u>FOR INDIGENOUS SUPPLY:</u> For indigenous supply the currency shall be Indian Rupees</p>	
11	<p><u>CURRENCY OF PAYMENT:</u> Mention the currency in which payment has to be made (Only for Foreign Supplies).</p> <p>(Euro / USD / Japanese YEN & GBP)</p>	
12	<p><u>DRAWING / DATA APPROVAL:</u> Any drawing / data approval required from BHEL after placement of order shall be the responsibility of the vendor and any delay on account of the same shall be the responsibility of the vendor and have no bearing on the penalty applicable.</p>	
13	<p><u>AUTHORIZATION OF PRE-INSPECTION:</u> BHEL is authorized to pre inspect the material at vendor's works. The material will be dispatched only after getting clearance from BHEL.</p> <p>Indigenous suppliers should give Pre-Dispatch Inspection (PDI) call at least 15 days in advance and foreign suppliers should give PDI call at least 45 days in advance. If supplier fails to give pre-inspection call with in</p>	

	stipulated time, this will not be a reason of penalty waiver or delivery extension.	
14	<u>DRAWING/DESIGN/ INFORMATION USE:</u> The vendor will have to give an undertaking that the drawing / design / information enclosed with the enquiry / proposed order will not be parted to any agency and will also not be used for manufacturing for any other customer.	
15	<u>DEPUTATION OF EXPERTS FOR ERECTION AND COMMISSIONING:</u> i- Time period for erection and commissioning: Vendor will have to ensure deputation of their people for erection within 15 days of intimation. In case of delay BHEL will be within their rights to get the job completed at the risk and cost of supplier. ii- The vendor will ensure the deputation of their engineers for attending to any complaints during the guarantee period within seven days of the complaint, failing which BHEL will take up the job and complete the same at supplier's cost.	
16	<u>PURCHASING OF BOI ITEMS:</u> The BOI should be from a reputed vendor and a list of all such vendors giving details such as contract person, phone-fax no and complete address should be part of the offer for future requirement of BHEL	
17	<u>BANK CHARGES:</u> Bank Charges on either side Or your prices will be loaded suitably.	
18	E&C value should be quoted separately by bidders. In case where quoted value of E&C is less than 10 % of Contract value or separate E&C values are not mentioned in the offer, value for E&C portion shall be considered 10 % of Contract value & accordingly supply value will be adjusted from that quoted value.	
19	Reverse Auction: Participation in Reverse Auction (R.A.): BHEL may decide to process the case through RA. Vendors to give their confirmation for participation in Reverse Auction process.	
20	L1 price will be decided on the basis of delivery cost (i.e. total cost to CFFP BHEL) For evaluation, exchange rate (TT selling rate of SBI) as on scheduled date of tender opening (part –I bid in case of two part bid) shall be considered in case of foreign supplier. If the relevant day happens to be a bank holiday then the forex rate as on the previous bank (SBI)working day shall be taken.	
21	Price bid should clearly indicate the details as per annexure F of price bid format. Replica of price bid (copy of price bid without price part) to be submitted along with techno commercial bid.	
22	Foreign Suppliers: Dispatching port & Country to be mentioned essentially in the offer	
23	Import Supply:	

	<p>a. Phyto-sanitary Certificate essential for packages (Wooden).</p> <p>b. Country or origin certificate: Vendor to furnish the country of origin certificate from Chamber of Commerce with dispatch documents</p>	
24	VALIDITY: Validity of the offer should be 180 days from the date of tender opening.	
25	<p><u>THE TOTAL WEIGHT OF THE CONSIGNMENT:</u></p> <p>Total weight - Gross / Net in Kg of packages, package size / dimensions essentially should be indicated in the offer. Transportation and insurance charges will be calculated on the basis of same to decide L1 offer. In case any additional charges incurred by CFFP BHEL later on due to deviation in packages weight / size, actual difference will be to vendor's account.</p>	
26	TRAINING: Vendor shall provide on the machine training for operation and maintenance to BHEL employees at BHEL after successful erection and commissioning	
27	TOOLS AND SPARES: Spares are to be provided as per the Spare list of annexure A. Erection and Commissioning spares are to be provided by the vendor.	
28	<p><u>5 SETS OF O&M MANUAL/ DRAWINGS (HARD COPY AND SOFT COPY i.e. IN CD):</u></p> <p>5 sets of operations and maintenance manuals/ drawings (hard copy and soft copy i.e. in CD) shall have to be supplied along with the equipment. Final payment will be released only after receipt of the required documentation, final acceptance criteria fulfilled as per Annexure B and issue of Completion Certificate by Maintenance & Services Department of CFFP.</p>	
29	<p>Penalty for delay in supply and Dismantling , Erection and commissioning :</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 WO value (supply + E&C) subject to a maximum of 10% of total WO value. - The rate of penalty for delayed E&C shall be @ 0.5% per week of delay of total WO value (Supply +E&C) in E&C subject to a maximum of 10% of total WO value (Supply + E&C). - Maximum penalty for delay in Supply and E&C together shall be limited to 15% of total WO value (Supply + E&C). - For calculating Late Delivery penalty delivery date shall be considered as per following: <ul style="list-style-type: none"> a . Indigenous Suppliers: Delivery FOR Destination: - Date of receipt at BHEL Hardwar. b . Import Supply: Delivery CIF- Nhavasheva Mumbai/ Mumbai - Port of dispatch: - B / L date will be considered for calculation of late delivery Penalty. <p>Note :</p>	

	<p>- In case any bidder is not accepting the above penalty for delayed Supply and/or E&C, the offer of bidder shall be loaded to the extent to which it is not agreed by the bidder.</p> <p>- In case, any shortage is noticed viz-a-viz WO 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. Custom Duty and freight charges etc. up to destination for such short supplies shall be borne by the supplier.</p> <p>Supply period indicated by bidder should include reasonable time required for approval of drawings and other inputs from BHEL. In the Techno-Commercial Bid, the bidder shall submit milestones for various activities in co-relation with Supply and E&C period quoted by him.</p> <p><i>E&C : Dismantling , Erection & Commissioning</i></p>	
30	<p><u>SETTLEMENT OF DISPUTES:</u></p> <p>For Foreign Vendor: In case of any dispute, settlement of disputes through arbitration shall be in accordance with Arbitration Rules of Conciliation and Arbitration of the ICC, Paris. The venue of arbitration shall be Delhi. The courts of Delhi shall have exclusive jurisdiction.</p> <p>For Indigenous Vendor : The venue of arbitration shall be Haridwar. Haridwar Courts will have exclusive jurisdiction.</p>	
31	<p><u>CONTACT DETAILS:</u> Details of Contact person Name, Designation, Department complete postal, E-mail address & Fax no, phone, Mobile no. to be mentioned.</p>	
32	<p>Note: Attach separate sheet for additional information if necessary. The above terms & condition supersedes the terms & conditions found contradictory written elsewhere in the tender enquiry</p>	

Note:

- a- Loading shall be applicable for any deviation in commercial terms viz payment terms, PBG etc. for the amount/period not agreed.
- b- Erection and Commissioning (E&C) Includes dismantling also

Annexure E
PRE QUALIFICATION CRITERIA

Qualification/ Eligibility:

The Quotation should be from the supplier who has the Minimum Qualification Requirements as below: (The documentary evidence of bidder's qualifications to bid shall establish to the BHEL's satisfaction that the bidder has the required experience and qualification to perform the contract. The contractor must ensure their eligibility against pre-qualification criteria before submitting tender.)

- 1) The bidder shall have designed, engineered, supplied, erected, commissioned, **or** reconditioned/modernized Hydraulic Forging Press of capacity of 2000 Tons or above and Oil Hydraulic Manipulator 25 T or higher size in India or abroad during last seven years which are ending last day of month previous to the one in which applications are invited & successful operation for a period of not less than 2 years. The date of completion of above work shall be taken for accounting of period. The bidders shall furnish the names of such projects, year of order, time of completion, scope of work, customer name & contact details, estimated project value, direct contact number .
- 2) Vendor should have established quality assurance systems to achieve high levels of equipment reliability, both during the manufacturing and the field installation activities. The vendor has to submit ISO 9001 certificate **or** its equivalent from an internationally recognized agency.
- 3) The bidder should have adequate financial capability to meet the financial obligations pursuant to the scope of the work. The bidder shall submit copies of their profit and loss accounts and balance sheets for the last three years (in case of language other than English bidder will be required to submit duly certified English translated copy). The Vendor must submit the annual reports giving the audited profit or loss account and balance sheet for last three financial years with year ending 31.03.16.
- 4) Average Annual financial turnover during the last 3 years ending 31st March (or whenever the financial year is ending in the country of the bidder) of the previous financial year, should be at least INR 200 lakhs (20million rupees). Vendor is to submit the balance sheets of previous financial years for the same. The balance sheet(s) submitted should be audited by a competent auditor of the respective country and have a translated (to English) copy duly attested. In case the currency is not INR, the same shall be converted to INR as per TT selling rate of SBI on the date of tender opening (PART I Bid).

5) Experience of having successfully completed similar works (As per 1 above) during last 7 years ending last day of month previous to the one in which applications are invited should be either of the following:

Three similar completed works costing not less than INR 260.00Lakhs (26 Million Rupees) each.

Or

Two similar completed works costing not less than INR 325.00Lakhs (32.5 Million rupees) each.

Or

One similar completed works costing not less than INR 520.00Lakhs (52Million Rupees)

Annexure F
PRICE BID

S.N.	Parameters	Cost (In Indian Rupees/USD/Euro)
1	Total cost of supply as per Annexure A, Including commissioning Spares. (On CIF Nhavasheva port , Mumbai India basis for foreign bidder and FOR CFFP Hardwar basis for indigenous bidder.)	
2	Total cost for Dismantling , Erection, Commissioning ,Cold and Hot trial (Minimum 10 % of total cost). (In case where quoted value of E&C is less than 10 % of Contract value or separate E&C values are not mentioned in the offer, value for E&C portion shall be considered 10 % of Contract value & accordingly supply value will be adjusted from that quoted value).	
3	Applicable Taxes and duties	Excise Duty / CVD.....
		CST.....
		Service Tax & Any other.....
6	Total	

NOTE:

A.	<i>Copy of this sheet without price part must be submitted along with techno-commercial offer.</i>
B.	<i>Prices to be Quoted In Words & Figures Both. In case of difference, prices quoted in words will prevail.</i>
C.	<i>In case of any change in Tax structure at the time of price bid opening same shall be applied for arriving L1 status of vendor. However payment will be made as per the statutory Taxes applicable at the time of supply of components/E&C</i>

Signature with seal of company.

INTEGRITY PACT

Between

Bharat Heavy Electricals Ltd. (BHEL), a company registered under the Companies Act 1956 and having its registered office at "BHEL House", Siri Fort, New Delhi – 110049 (India) hereinafter referred to as "The Principal", which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the ONE PART

and

_____, (description of the party along with address), hereinafter referred to as "The Bidder/ Contractor" which expression unless repugnant to the context or meaning hereof shall include its successors or assigns of the OTHER PART

Preamble

The Principal intends to award, under laid-down organizational procedures, contract/s for

_____. The Principal values full compliance with all relevant laws of the land, rules and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder(s)/ Contractor(s).

In order to achieve these goals, the Principal will appoint Independent External Monitor(s), who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 – Commitments of the Principal

- 1.1 The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
 - 1.1.1 No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for self or third person, any material or immaterial benefit which the person is not legally entitled to.
 - 1.1.2 The Principal will, during the tender process treat all Bidder(s) with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidder(s) the same information and will not provide to any Bidder(s) confidential / additional information through which the Bidder(s) could obtain an advantage in relation to the tender process or the contract execution.
 - 1.1.3 The Principal will exclude from the process all known prejudiced persons.
- 1.2 If the Principal obtains information on the conduct of any of its employees which is a penal offence under the Indian Penal Code 1860 and Prevention of Corruption Act 1988 or any other statutory penal enactment, or if there be a substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 – Commitments of the Bidder(s)/ Contractor(s)

- 2.1 The Bidder(s)/ Contractor(s) commit himself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
 - 2.1.1 The Bidder(s)/ Contractor(s) will not, directly or through any other person or firm, offer, promise or give to the Principal or to any of the Principal's employees involved

in the tender process or the execution of the contract or to any third person any material, immaterial or any other benefit which he / she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.

- 2.1.2 The Bidder(s)/ Contractor(s) will not enter with other Bidder(s) into any illegal or undisclosed agreement or understanding, whether formal or informal. 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.
- 2.1.3 The Bidder(s)/ Contractor(s) will not commit any penal offence under the relevant IPC/ PC Act; further the Bidder(s)/ Contractor(s) will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
- 2.1.4 The Bidder(s)/ Contractor(s) 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.
- 2.2 The Bidder(s)/ Contractor(s) will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 – Disqualification from tender process and exclusion from future contracts

If the Bidder(s)/ Contractor(s), before award or during execution has committed a transgression through a violation of Section 2 above, or acts in any other manner such as to put his reliability or credibility in question, the Principal is entitled to disqualify the Bidder(s)/ Contractor(s) from the tender process or take action as per the separate "Guidelines on Banning of Business dealings with Suppliers/ Contractors". framed by the Principal.

Section 4 – Compensation for Damages

- 4.1 If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover the damages equivalent Earnest Money Deposit/Bid Security.
- 4.2 If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.

Section 5 – Previous Transgression

- 5.1 The Bidder declares that no previous transgressions occurred in the last 3 years with any other company in any country conforming to the anti-corruption approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
- 5.2 If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 – Equal treatment of all Bidders/ Contractors/ Sub-contractors

- 6.1 The Bidder(s)/ Contractor(s) undertake(s) to obtain from all subcontractors a commitment consistent with this Integrity Pact and report Compliance to the Principal. This commitment shall be taken only from those sub-contractors whose contract value is more than 20 % of Bidder's/ Contractor's contract value with the Principal. The Bidder(s)/ Contractor(s) shall continue to remain responsible for any default by his Sub-contractor(s).
- 6.2 The Principal will enter into agreements with identical conditions as this one with all Bidders and Contractors.
- 6.3 The Principal will disqualify from the tender process all bidders who do not sign this pact or violate its provisions.

Section 7 – Criminal Charges against violating Bidders/ Contractors /Sub-contractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 –Independent External Monitor(s)

- 8.1 The Principal appoints competent and credible Independent External Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.

- 8.2 The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the CMD, BHEL.
- 8.3 The Bidder(s)/ Contractor(s) accepts that the Monitor has the right to access without restriction to all contract documentation of the Principal including that provided by the Bidder(s)/ Contractor(s). The Bidder(s)/ Contractor(s) will grant the monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his contract documentation. The same is applicable to Sub-contractor(s). The Monitor is under contractual obligation to treat the information and documents of the Bidder(s)/ Contractor(s) / Sub-contractor(s) with confidentiality.
- 8.4 The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the contract provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
- 8.5 As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or take corrective action, or heal the situation, or to take other relevant action. The Monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
- 8.6 The Monitor will submit a written report to the CMD, BHEL within 8 to 10 weeks from the date of reference or intimation to him by the Principal and, should the occasion arise, submit proposals for correcting problematic situations.
- 8.7 The CMD, BHEL shall decide the compensation to be paid to the Monitor and its terms and conditions.
- 8.8 If the Monitor has reported to the CMD, BHEL, a substantiated suspicion of an offence under relevant IPC / PC Act, and the CMD, BHEL has not, within reasonable time, taken visible action to proceed against such offence or reported it to the Vigilance Office, the

Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8.9 The number of Independent External Monitor(s) shall be decided by the CMD, BHEL.

8.10 The word 'Monitor' would include both singular and plural.

Section 9 – Pact Duration

9.1 This Pact begins and shall be binding on and from the submission of bid(s) by bidder(s). It expires for the Contractor 12 months after the last payment under the respective contract and for all other Bidders 6 months after the contract has been awarded.

9.2 If any claim is made / lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified as above, unless it is discharged/ determined by the CMD, BHEL.

Section 10 – Other Provisions

10.1 This agreement is subject to Indian Laws and jurisdiction shall be registered office of the Principal, i.e. New Delhi.

10.2 Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.

10.3 If the Contractor is a partnership or a consortium, this agreement must be signed by all partners or consortium members.

10.4 Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

10.5 Only those bidders/ contractors who have entered into this agreement with the Principal would be competent to participate in the bidding. In other words, entering into this agreement would be a preliminary qualification.

For & On behalf of the Principal

For & On behalf of the Bidder/ Contractor

(Office Seal)

(Office Seal)

Place-----

Date-----

Witness: _____

Witness: _____

(Name & Address) _____

(Name & Address) _____



ANNEXURE-II

WAM-28

Proforma for Bank Guarantee

In consideration of the Bharat Heavy Electrical Limited Siri fort N. Delhi through Division CFFP Hardwar (hereinafter called the Company') having agreed to exempt----- (hereinafter called 'the said Contractor' which term includes 'Suppliers' for the purpose of this Bond) from the demand under the terms and conditions of an Agreement no / PO no ----- date. ----- made between -----and ----- for (hereinafter called 'the said Agreement') of Security Deposit for the due fulfillment by the said Contractor of the terms and conditions contained in the said Agreement, on production of a Bank Guarantee for Rs. ----- (Rupees-----only).

1. We, _____(Indicate the name of the Bank)_____
(hereinafter referred to as 'the Bank') at the request _____
_____(Contractor (s) do hereby undertake to pay to the Company an amount not exceeding Rs. _____
_____ against any loss or damage caused to or suffered or would be caused to or suffered by the Company by reason of any breach by the said Contractor (s) of any of the terms and conditions contained in the said Agreement.
2. We, _____(indicate the name of the Bank)_____ do hereby undertake to pay the amounts due and payable under this guarantee without any demur, merely on a demand from the Company stating that the amount claimed is due by way of loss or damage caused to or would be caused to or suffered by the Company by reason of breach by the said Contractor(s), of any of the terms of conditions contained in the said Agreement or by reason of the contractor(s), failure to perform the said Agreement. 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. _____.
3. We undertake to pay to the Company any money so demanded notwithstanding any dispute or disputes raised by the Contractor(s) in any suit or proceeding pending before any court or Tribunal relating thereto our liability under this present being absolute and unequivocal.

The payment so made by us under this bond shall be a valid discharge of our liability for payment there under and the Contractor(s) shall have no claim against us for making such payment.

4. We, _____(indicate the name of the Bank)_____ 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 Agreement and that it shall

continue to be enforceable till all the dues of the Company under or by virtue of the said Agreement have been fully paid and its claims satisfied or discharged or till _____ Office / Department / Division of Bharat Heavy Electrical Limited certifies that the terms and conditions of the said Agreement have been fully and property carried out by the said contractor(s) and accordingly discharged this guarantee. Unless a demand or claim under this guarantee is made on us in writing on or before the _____ we shall be discharged from all the liability under this guarantee thereafter.

5. We, _____(indicate the name of the Bank)_____ further agree with the Company that the Company 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 Agreement or to extend time of performance by the said contractor(s) from time to time or to postpone for any time or from time to time any of the power exercisable by the company against the said contractor(s) and to forbear or enforce any of the terms and conditions relating to the said Agreement and we shall not be relieved from our liability by any reason of any such variation or extension being granted to the said contractor(s) or for any forbearance, act or omission on the part of the company or any indulgence by the company to the said contractor(s) 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.
6. This guarantee will not be discharged due to the change in the constitution of the Bank or the contractor(s).
7. We, _____(indicate the name of the bank)_____ lastly undertake not to revoke this guarantee during its currency except with the previous consent of the Company in writing.

Dated the _____ day of _____

For _____(indicate the name of the bank)_____

LIST OF BHEL CONSORTIUM BANK	
1	State Bank of India
2	Canara Bank
3	Bank of Baroda
4	Punjab National Bank
5	State Bank of Hyderabad
6	State Bank of Travancore
7	Corporation bank
8	Syndicate Bank
9	Indian Bank
10	Oriental Bank of Commerce
11	UCO bank
12	Central bank of India
13	IDBI Ltd.
14	HDFC Bank Ltd.
15	ICICI Bank Ltd.
16	Kotak Mahindra Bank ltd
17	The Federal bank Limited
18	Abn-Amro Bank
19	Citi Bank
20	HSBC
21	Deutsche Bank
22	Standard Chartered Bank
23	United bank of India
24	Vijaya Bank
25	Union Bank of India
26	Bank of India
27	Andhra Bank
28	Punjab & Sind Bank
29	Axis Bank