

ANNEXURE-A

Technical Specification and Pre Qualifying Criteria

* 1. Vendor to confirm rating/function/make wherever required, instead of writing, "confirmed/Yes/No".The vendor shall clearly indicate the specification, make and other details. A simple Yes/ No will not be acceptable to BHEL.

2. Schematic Diagram of Power Circuit is attached as Annexure B for reference only.

Sl. No.	Technical Specification	Vendor to Confirm	Deviation if any
1	Supply and Commissioning of VFD with IP 54 Enclosure Panel with bypass arrangement by circuit breaker suitable for Induction Motor (Make-ELGI) -250 KW , 3 Ph 415 V AC, 406 A, I (Max)- 487 A, Speed-1490 RPM, Eff-95.2,S1 Duty, S.F-1.2.		
2	Off Load Chage Over-630 A, TPN Open Execution , Manual Type in Drive Enclosure Panel		
3	Offered VFD and panel should have following Accessories having protection circuit for Current, Voltage and Temperature		
3.1	Suitable capacity MCB at the input side of VFD.		
3.2	Suitable choke at VFD input and output side		
3.3	Start/Stop/Reset/Emergency push buttons.		
3.4	RYB/ON/OFF/Trip Indicator lamps. All indication lamps shall be of LED type.		
3.5	Advance LCD display along with VFD for easy programming. The display shall indicate motor RPM, Load current etc. at real time . The display shall be mounted on the front door of VFD enclosure		
3.6	Suitable capacity cooling Fans for VFD panel to ensure sufficient cooling of VFD and its components.		

3.7	Suitable capacity Pressure transmitter must be provided for feedback from pressure vessel.		
3.8	Suitable rated terminal blocks must be provided for power and control wiring with clean marking/ferrules.		
3.9	The bottom plate of panel must be removable type with cable gland. (For cable entry)		
3.10	EMI/EMC protection is required.		
3.11	One step higher kW VFD is required for motor and fan motor consideration, please mention rating of VFD, motor rating at Sl. 1(mandatory)		
4	General Terms and Condition:		
4.1	After PO Placement, the vendor shall submit the drawings to BHEL for approval.		
4.2	The vendor shall offer the VFD panel for pre dispatch inspection at his work place.		
4.3	Three sets of operation and maintenance manual with one soft copy consisting of electrical drawings for power and control circuit, wiring diagram of the panel board, parameter & programming manual of VFD and bought out item shall be supplied.		
4.4	The vendor should submit catalogue of the offered model VFD.		
4.5	The scope of supply shall include assistance for installation and commissioning of the drive at BHEL's shop.		
4.6	The make of VFD shall be anyone of the following: L&T/ Yaskawa/ ABB/ Siemens/ Eurotherm/ Danfoss/ Mitsubishi/ ELGI/GE/Schneider		

4.7	One day Training shall be provided to BHEL technicians for Operation & maintenance of the drive.		
4.8	All electrical switchgears used in system shall be from reputed make like Siemens/ Schneider/ L&T/ABB		
4.9	Fuctionality: Auto ON/OFF depending upon pressure switch		
5	Pre Qualification criteria:		
5.1	Supplier should be OEM or Authorised dealer of OEM.		
5.2	The supplier must have experience of minimum of 3 years in installing and commissioning of drives of similar capacity or more. The installation and commissioning report with Performance Certificate from any one of the customers (PSU/ Govt. Organization/ Reputed Firm) shall be attached.		
6	Guarantee period of minimum two years from the date of installation & commissioning		
7	Erection and commissioning is required at BHEL Works/machine within 02 weeks by Vendor from the date of delivery at BHEL works		
8	Recommended spares list is required separately with price in a sealed cover with validity for 02 years		
9	After PO placed Panel drawing, bus bar arrangement drawing is required for approval before despatch		
10	Before price bid opening, bidder should visit at CS & FP, BHEL, Jagdishpur to understand site condition and finalization of scope of supply.		
11	BHEL Scope- Armoured Aluminium Cables and lugs will be provided by BHEL.		
12	Supply frequency should be 45-65% of current frequency.		
13	Test certificate required.		
14	Delivery Schedule: 12 weeks from date of issue of PO		
