

**BHARAT HEAVY ELECTRICALS LIMITED**

CORPORATE RESEARCH & DEVELOPMENT DIVISION

VIKASNAGAR, HYDERABAD - 500 093, INDIA

PHONES: 23774494 (EXCHANGE)

DIRECT: 23882104/23882204/

23778474/23776772

FAX : 91 40 23770698

RD:DP:MPX:F-04

ENQUIRY

To

Enquiry No:	Enq Date:	Due Date:	Delivery By:
330701141	29-MAY-07	19-JUN-07	21-OCT-07

PLEASE SUBMIT YOUR QUOTATION IN SEALED COVER SUPERSCRIBED WITH ENQUIRY NO, ENQUIRY DATE AND DUE DATE SUBJECT TO OUR TERMS AND CONDITIONS ENCLOSED, FOR THE FOLLOWING MATERIALS SO AS TO REACH US ON OR BEFORE THE DUE DATE BY 12 NOON. THE TENDERS WILL BE OPENED AT 2 PM ON THE SAME DAY

Pin

Email :

Attn. .

PLEASE GIVE REFERENCE OF ENQ NUMBER , ENQ .DATE AND DUE DATE IN ALL YOUR CORRESPONDENCE FOR PROMPT ACTION. IN CASE IF YOU ARE NOT MAKING THE OFFER PLEASE POST A REGRET LETTER AND RETURN THE DOCUMENTS.

SL NO	DESCRIPTION / SPECIFICATION	UNIT	QTY
1	INPUT TRANSFORMER SPECIFICATIONS AS ENCLOSED	NO.	1

NOTE: PLEASE SUBMIT YOUR OFFER IN TWO PARTS AS PER THE ENCLOSED ANNEXURE "AA" IN SEPARATE SEALED COVERS AS DETAILED BELOW:

1) FIRST COVER SHALLCONTAIN THE FOLLOWING:

- a) TECHNICAL COMMERCIAL BID ALONG WITH COMPLIANCE STATEMENT, MENTIONING APPLICABLE DUTIES,TAXES etc.,AND DELIVERY TIME CLEARLY, (TERMS, CONDITIONS AND COMPLIANCE FORM ENCLOSED)
- b) A COPY OF THE PRICE BID WITHOUT THE PRICES (UNPRICED PRICE BID)

2) SECOND COVER CONTAINING PRICE BID

3) IF THE PRICE BID IS FOUND TO BE DIFFERENT FROM THE UNPRICED PRICE BID IN ANY WAY, YOUR OFFER WILL BE REJECTED

Important:

1) Taxes & Duties quoted by you will be taken for cost evaluation and order placement and no change will be entertained later except in the case of changes made by the Government. Changes in Taxes and Duties because of the changes in Turnover etc. also be to the supplier's account. In case no tax/duty is included, a self declaration for the exemPtion may be attached along with the offer

2) The Supplier shall be an approved vendor of BHEL, Electronics Division, Bangalore, for transformers of similar rating and application

AS WE ARE ENGAGED IN R&D ACTIVITY "C" FORM WILL NOT BE ISSUED

Yours faithfully

for

PLEASE FILL UP THE ENCLOSED VENDOR REGISTRATION FORM AND SEND IT ALONG WITH YOUR QUOTATION. OTHERWISE YOUR QUOTATION WILL NOT BE CONSIDERED. (IGNORE THIS IF YOU HAVE ALREADY SUBMITTED THIS FORM)

BHARAT HEAVY ELECTRICALS LTD

N Narsimha Rao

Dy Manager

Email: nnrao@bhelrnd.co.in

SPECIFICATION FOR LINE SIDE CONVERTER TRANSFORMER FOR 3 LEVEL PWM INVERTER – 3 WINDING

PROJECT	: 1 x 250 MW - RETROFIT
CUSTOMER	: BHEL Corporate R& D Hyderabad
EQUIPMENT	: PWM INVERTER FOR ID FANS RETROFIT- 250 MW
1. Quantity	: 1 no.
2. Type of cooling	: ONAN. Mineral oil filled
3. Primary Rating (at all taps)	: 2750 KVA Continuous Winding is Delta connected
4. Secondary Rating (each wdg)	: 1375 KVA Continuous
5. Number of phases	: 3
6. Voltages primary (L-L) (HT side)	: 6600 volts \pm 10% RMS L-L
7. Secondary (L-L) (LV side)	: 1700 Volts, 1700 Volts RMS L-L. ONE wdg delta, another wdg Star with Neutral
8. Tappings on Primary	: \pm 2.5 % , \pm 5% Off circuit
9. Frequency	: 50Hz \pm 5%
10. Combined volt & freq. variation	: 10% (Absolute sum)
11. Number of winding	: 3
12. Vector group	: Ddo , Dyn11
13. Relative difference between Secondary Voltage	: < 0.5 %
14. Impedance / Tolerance	: 8% on principal tap (Minimum) Tolerance + 10 % - 0 %
15. Impedance / Coupling	: Impedance / tolerance as specified in pt 14 (i) 8% impedance with tolerance between HV and LV-1 on 1375 KVA base with LV-2 open. (ii) 8% impedance with tolerance between HV and LV-2 on 1375 KVA base with LV-1 open iii) The two LV windings should have minimum mutual leakage coupling inductance.

16. Voltage/ freq ratio : Shall be designed for 1.1 continuous.
17. Installation : Outdoor
(Under direct sunlight)
18. Ambient temp. : 50 Degree C
19. Duty : Rectifier duty.
20. Temperature rise
- (a) Design ambient temp. : 50 Degree C.
- (b) Temp. rise of top of oil by thermometer : 50 Degree C.
- (c) Temp. rise of wdg. by resistance method : 55 Degree C
21. Relative Humidity : 100 %
22. Short Ckt. level at 6.6 kV : 22 KA RMS
23. Fault level of supply system (MAX Value) : 250 MVA
24. Suitability to withstand vacuum breaker switching on HT side : Required
25. a) Material of winding / Insulation : Copper – Electrolytic Grade, Uniformly insulated
- b) Core : Not to exceed 1.8 Wb/m^2 at any tap position with $\pm 10\%$ voltage variation from voltage corresponding to the tap. The laminated core shall be of high grade cold rolled grain oriented silicon steel.
- c) Tank : Tank shall be of welded construction and fabricated from tested low carbon steel. It shall be designed for a continuous internal pressure of 0.35 Kg/sq.cm over normal hydrostatic pressure of oil. All bolted connections shall be fitted with weather proof hot oil resistant neoprene gasket, in between for complete oil tightness. Bi – directional skids, rollers, jacking pads(four nos), lifting lugs shall be provided.
- d) Hardware : All nuts and bolts exposed to weather shall be hot dip galvanised or cadmium plated or zinc passivated steel.
26. Noise : Not to exceed values specified in NEMA TR-1
27. Insulating oil : Fresh oil (before pouring into transformer) should be

as per IS 335, without inhibitor. 10% extra oil shall be supplied for top ping in non returnable containers in sealed drums.

- | | |
|---|--|
| 28. Terminal arrangement | : Suitable for termination of XLPE cable with Raychem type heat shrinkable terminating kits on HT side and LT side. 4mm thick Aluminum blank (undrilled) gland plates to be supplied with H.T., L.T. and Mar-shalling boxes. Bushings of Porcelain confirming to IS 2099 & IS 3347. The minimum length between cable gland plate and cable lug to be 550 mm for both H.V. and L.T. side cable boxes. Terminal marking shall be as per IS 2026. Epoxy bushings are not acceptable. |
| 29. Tap changer | : OFF circuit tap changer with padlocking facility as per IS 2026 with warning plate
" SWITCH TO BE OPERATED WITH TRANSFORMER DE-ENERGISED" |
| 30. Taps | : Taps +/- 5 % in steps of +/- 2.5 % |
| 31. Painting (Transformer and accessories) | : Epoxy. |
| 32. Shade | : 631 as per IS 5 |
| 33. Fittings and accessories | : As per Annexure-1 |
| 34. Standards | : IS 2026 |
| 35. Testing (Routine Tests) | : As per Annexure –2 |
| 36. Quality plan | : Supplier should submit his Standard Quality Plan. |
| 37. Testing (Type Tests) | : As per Annexure - 2 . |
| 38. No load loss & Load loss (valid for all transformers (GUARANTEED) | : Guaranteed maximum values without any positive tolerance shall be given with the offer.
(See page 17 of data sheet)
An amount of Rs. 15000/- per KW of differential copper loss and Rs.60,000/- per KW of differential iron loss will be levied on the manufacturer, if these losses exceed the guaranteed losses quoted.
For the bid comparison purpose, price loading will be done at above rates for losses. |
| 39. Clearances | : LV Winding to Core to be designed for 6.2 Kv RMS working Voltage
LV Winding to LV winding to be designed for 6.2 Kv RMS working Voltage. |

40 Construction	:- All coil windings shall be uniformly insulated and shall be designed for BIL level –2 as per IS 2026 Since the transformer is used for converter duty ,it should be 3 legged core 5 legged core is not allowed. Earthed screen between HV and LV windings to be Provided.	
41. List of spares	: Complete set of gaskets - 1 Set Oil temp. indicator (Dial Type) with alarm & trip contacts - 1 No Winding temp. indicator (Dial Type) with alarm & trip contacts -1 No Pressure Relief Device - 1 No HV bushing with metal parts and gaskets. - 3 Nos LV bushing with metal parts and gaskets. - 3 Nos Tap changer contacts - 1 set Magnetic oil level gauge - 1 No Bucholz relay complete - 1 No Explosion vent Diaphragm - 2 sets	
42. DATA SHEET	: DATA SHEET (Annexure – 3) is enclosed with this specification. The same is to be filled up and submitted along with the technical offer.	
43. INFORMATION REQD WITH OFFER	: (i) Filled up data sheet (ii) Deviations to this specification. If there are no deviations, supplier must mention the same explicitly in their technical offer. (iii) Unpriced prebid must be enclosed with technical offer. Price bid must contain list of type tests with individual charges and also price for individual items in list of spares in item 35 (iv) Supplier to give charges for individual type tests. (v) Supplier to furnish item wise price for list of spares. (vi) Short description on the construction of core, and desposition of windings in the transformer.	
35. Information required after order placement	: a) Outline GA Drg. showing weights, dimensions, foundation plan and List of Accessories b) Six (6) copies of Operation and Maintenance manual. c) Test Certificates for Routine & Type tests, and guarantee Certificates.	

ANNEXURE - 1

All accessories shall be provided confirming to IS 3639.
The following fittings and accessories shall be provided:

<u>SL.NO</u>	<u>DESCRIPTION</u>	<u>QTY</u>
01.	Oil filling hole with cover	1
02.	Conservator with sump & drainvalve with plug/cover plate. The Breather shall be mounted at a height less than 1600 mm from the ground.	1
03.	a) Magnetic Oil level gauge(Dial type) with minimum and maximum filling level markings. It should have two independent electrically insulated low level alarm contacts suitable for 220 V DC. The oil level at 30 deg C shall be marked on the gauge. Contact suitable for 220 V DC.	1
	b) Prismatic oil level gauge	1
04.	Thermometer pockets	1
05.	Air release plug on tank cover	1
06.	Lifting lugs	1 SET
07.	Top filter valve	1
08.	Dehydrating breather with Silicagel and oil seal	1
09.	Off circuit tap changing switch on tank cover with tap position indicator, locks and handle.	1
10.	Rating and terminal marking stainless steel/anodised aluminum plate, with details etched in MKS & SI units.	1
11.	Earthing terminals without lugs suitable for connecting 50x6 mm galvanized mild steel flat.	2
12.	Diagram plate	1
13.	Drain cum bottom filter valve	1
14.	Base channel with towing holes/lugs	2

<u>SL.NO</u>	<u>DESCRIPTION</u>	<u>QTY</u>
15.	Double Diaphragm explosion vent, with pipe connection to conservator.	2
16.	Four Jacking Pads to enable transformer with oil to be raised or lowered using hydraulic or screw jacks.	1 SET
17.	Manufacture's name plate (stainless steel)	1
18.	Bi-directional rollers + Bi-directional skids	1 SET
19.	Detachable radiator with bottom drain plug, top air release plug and top & bottom shut off valve.	1 SET
20.	Buchholtz relay should be of double float type with testing & sampling cocks, alarm and trip contacts and one isolating valve on conservator side	1 SET
21.	150mm dial type oil temp. Indicator and winding temp. Indicators with max. pointer with alarm and trip contacts. Contacts suitable for 220V DC. Indicator accuracy $\pm 2\%$. Alarm and trip points to be adjustable. Full scale temp. 240 deg C. Least count 2 deg C. Oil / Winding temp. Indicators should be provided with resetting device.	1 SET
22.	Cable glands & lugs Cable sizes shall be informed at the time of drawing finalisation. Cable lugs shall be of tinned copper for crimping to stranded aluminium conductor cable. Cable glands will be of double compression type.	1 SET
23.	Marshalling box (protection class IP55 and IS 2147) epoxy painted. Should be vermin, weather, dust proof. Terminal connector of control cable should be DOWELL make or equivalent. 20% extra spare terminals reqd. All TBs to be complete with insulating barriers, clip on type terminals suitable to 2.5 sq mm stranded copper wire. The marshaling box and temperature indicators shall not be mounted at a height greater than 1600 mm from the ground level. The box shall be tank mounted with sloping roof. All incoming cables shall enter from bottom. Sheet steel to be 1.6 mm thick. Thermostatically Controlled space heaters shall be provided.	1 No

<u>SL.NO</u>	<u>DESCRIPTION</u>	<u>QTY</u>
24.	Inspection openings on tank with handles	2 Nos
25.	Remote WTI – For Remote Control Panel It shall not be a repeater dial of Local WTI	1 No.

NOTE :1) Contacts of all temp indicators, Buchholz relays and auxiliary devices shall be suitable for 220 V dc supply. All alarm and trip contacts shall also be suitable for 220 V dc circuits. External power supply will not be provided.

2) Nuts and bolts exposed to weather to be hot dipped galvanized or cadmium plated or zinc passivated steel.

3) Control wiring to be done with 1100 V grade PVC wire, 2.5 mm stranded copper wire.

4) Cable glands and lugs shall be supplied loose alongwith transformer. See Pt 22.
Cable glands will be double compression nickel plated brass.
Cable lugs will be installed with fixing hardware in the cable box.

ANNEXURE - 2

B) Final testing of Finished Transformer

The following tests shall be conducted on the finished transformer.

- Routine tests in accordance with the latest issue/ amendments of IS 2026
Separate source voltage test on LV windings shall be 20 KV for 1 minute.
- Magnetic Balance Test

The following type tests shall be conducted on the transformer.

- Temperature rise test as per IS2026 with latest amendments.
- Full wave Impulse test on HV wdg, LV windings. Voltage peak shall be as per list 2 of IS 2026, The LV windings shall be considered as having a working voltage of 6.2 KV RMS.

Note : (i) Supplier shall submit itemised price for each type test test-wise in the offer.

ANNEXURE – 3

DATA SHEET

- 1) Manufacturer's Name and address :
- 2) Service Class / KVA rating :
- 3) Rated Voltage
 - a) HV Winding KV :
 - b) LV Winding KV :
- 4) Rated frequency :
- 5) Number of phases :
- 6) Connections
 - a) HV Winding :
 - b) LV Winding KV :
- 7) Connection symbol :
- 8) Type of cooling :
- 9) Tap changing equipment
 - a) Manufacturer :
 - b) Type :
 - c) No of steps :
 - d) Tap range % to % :
- 10) Guaranteed positive sequence impedance at 75 deg C with 100% rating
 - a) Principal tap :
 - b) Maximum tap (Approx) :
 - c) Minimum tap (Approx) :
- 11) Temp. rise over an ambient of 50 deg C
 - a) Top oil deg C :

b) Winding (by resistance measurement method deg C) :

12) Guaranteed losses at rated voltage on principal tap and at rated current rated frequency:

- | | | |
|---|-----|----------------|
| a) No load loss KW | * } | SEE NOTE BELOW |
| b) Copper loss at full load and 75 deg C KW | * } | |

13) Withstand time for three phase short circuit at terminals (sec.) :

14) No load current at rated voltage and rated frequency (Amps) (Approx) :

15) Insulation level

a) Separate source power frequency voltage withstand

- | | |
|-------------------------|---|
| i) HV Winding (KV rms) | : |
| ii) LV Winding (KV rms) | : |
| iii) HV Bushing | : |
| iv) LV Bushing | : |
| v) Neutral Bushing | : |

b) Induced over voltage withstand

- | | |
|-------------------------|---|
| i) HV Winding (KV rms) | : |
| ii) LV Winding (KV rms) | : |

c) Full wave lightning impulse withstand

- | | |
|---------------------|---|
| i) HV Winding (KV) | : |
| ii) LV Winding (KV) | : |
| iii) HV Bushing | : |
| iv) LV Bushing | : |
| v) Neutral Bushing | : |

*** NOTE : LOSS FIGURES TO BE GIVEN WITHOUT ANY POSITIVE TOLERANCE. THESE FIGURES WILL BE USED FOR BID COMPARISON PURPOSE.**

d) Switch impulse withstand voltage

- | | |
|---------------------|---|
| i) HV Winding (KV) | : |
| ii) LV Winding (KV) | : |
| iii) HV Bushing | : |

- 16) Regulation at full load at 75 deg C
- a) At unity power factor (percent) :
 - b) At 0.8 power factor (percent) :
- 17) Terminal arrangement
- a) High Voltage :
 - b) Low Voltage :
 - c) LV Neutral :
 - d) HV Neutral :
- 18) Over excitation withstand time (sec)
- a) 120% :
 - b) 150% :
- 19) Bushing
- a) High Voltage
 - i) Manufacturer :
 - ii) Type :
 - iii) Minimum creepage distance(mm) :
 - b) Low Voltage
 - i) Manufacturer :
 - ii) Type :
 - iii) Minimum creepage distance(mm) :
 - c) Neutral
 - i) Manufacturer :
 - ii) Type :
 - iii) Minimum creepage distance(mm) :
- 20) Proposed method of transformer shipment :
- 21) Total quantity of oil (litres) required for first filling :
- 22) Is vacuum filling required, if so, state absolute pressure :

- 23) Efficiency at 75 deg C at unity power factor
- a) At full load (percent) :
- b) At 3/4 full load (percent) :
- c) At 1/2 full load (percent) :
- 24) Approximate dimensions
- a) Tank enclosure (mm) :
L x B x H
- b) Overall L x B x H (mm)
- c) Limiting dimensions confirmed as in pt 37 of spec: YES / NO
- 25) Untanking height (mm) :
- 26) Approximate weight
- a) Core and winding (Kg) :
- b) Tank cover (Kg) :
- c) Tank fitting (Kg) :
- d) Oil (Kg) :
- e) Total weight (Kg) :
- 27) Despatch details (Kg)
- a) Approximate mass of heaviest package (Kg) :
- b) Approximate dimensions of largest package
- i) Length (mm) :
- ii) Breadth (mm) :
- iii) Height (mm) :
- 28) Reference standards :
- 29) Type of Construction (Core/Shell) :
- 30) Thermal time constant (Hours) :
- 31) Magnetizing inrush current (Amps) :
- 32) No load current at rated frequency and at(Approx)
- i) 90% voltage (Amps) :

ii) 100% voltage (Amps)	:
iii) 110% voltage (Amps)	:
33) Power factor of no load current	:
34) Zero sequence impedance at principle tap	:
35) Capacitance between winding and to earth (micro farads)	:
36) Percentage reactance at rated current and frequency and at	
i) Principal tap	:
ii) Maximum tap	:
iii) Minimum tap	:
37) Off circuit tap changer details	
a) Ratings	
i) Rated voltage	:
ii) Rated current	:
iii) Step voltage	:
iv) Numbers of steps	:
38) Radiator	
i) Overall dimensions lxbxh (mm)	:
ii) Total weight with oil (Kg)	:
iii) Total weight without oil (Kg)	:
iv) Type of mounting	:
v) Thickness of Radiator tube(approx) radiator sheet steel (approx)	:
39) Weight of Transformer	
a) Core (Kg) (approx)	:
b) Windings	
i) HV (Kg)(approx)	:

- ii) LV (Kg) :
- c) Insulation (Kg)(approx) :
- d) Tank/enclosure and fittings (Kg) :
- e) Oil (kg) :
- f) Untanking weight (Heaviest weight) (Kg) :
- g) Total weight (Kg) :
- 40) Dimensions
- a) Tank enclosure (mm) :
L x B x H(approx)
 - b) Overall L x B x H (mm) :
- 41) Shipping details
- a) Weight of heaviest package (Kg) :
 - b) Total shipping weight (Kg)(approx) :
 - c) No. of packages :
 - d) Dimensions of largest package :
(mm) l x b x h
 - e) Parts detached for transport: conservator tank, :
radiator,eq.pipe,explosion vent etc.
- 42) Size of filter hose (mm) :
- 43) Core
- a) Form of core :
 - b) Net core area (mm^2) :
 - c) Type of joint between core and yoke :
 - d) Thickness of stamping (mm) :
 - e) Percentage silicon content (percent) :
 - f) Maximum flux density in core at
rated frequency and at
 - i) 90% voltage (Wb/m^2) :
 - ii) 100% voltage (Wb/m^2) :

- iii) 110% voltage (Wb/m^2) :
 - g) Type of core binding :
- 44) Winding
 - a) Type of winding
 - i) HV :
 - ii) LV :
 - b) Current density at rated load
 - i) HV (A/mm^2) :
 - ii) LV (A/mm^2) :
 - c) Conductor area
 - i) HV (A/mm^2) :
 - ii) LV (A/mm^2) :
 - d) Maximum current density under short circuit
 - i) HV (A/mm^2) :
 - ii) LV (A/mm^2) :
- 45) Clearance
 - a) Minimum clearance between phase
 - i) In oil (mm) :
 - ii) In air (mm) :
 - b) Minimum clearance of HV winding to tank/enclosure (in oil, if applicable),(mm) :
 - c) Minimum clearance of HV winding to earth (In oil, if applicable),(mm) :
 - d) Clearance between core and coil (mm) :
 - e) Clearance between coils (mm) HV to LV / LV to LV :
- 46) Tank/enclosure details
 - i) Side (mm) :
 - ii) Bottom (mm) :
 - iii) Cover (mm) :

47) Insulation levels

		HV	LV
i) Power Frequency	:	20 kV	20 kV
ii) Lightning Impulse	:	60 kV	60 kV

48) Bushings

		HV	LV
i) Type	:	Porcelain	Porcelain
ii) Rated Voltage	:	7.2 kV	7.2 kV
iii) Lightning Impulse	:	60 kV	60 kV
iv) Creepage distance	:	175mm	175mm
v) Power Frequency	:	20 kV	20 kV

49) Magnetic Oil Level Gauge :
(Dial type) Size

50) List of deviations (if any)enclosed : YES / NO
enclosed with offer. If no deviations please mention
the same here.

NOTE : Under Sl. No 19 (c) of this data sheet the neutral bushing if applicable
will be enclosed in a box with adequate clearances on top of transformer tank.
No external cable connections will be taken from it. Adequate insulation level should be
provided for this isolated neutral. The clearances should be for 6.6 KV working voltage.



BHARAT HEAVY ELECTRICALS LIMITED

CORPORATE R&D DIVISION, VIKAS NAGAR, HYDERABAD – 500 093, AP, India

Ph: 0091-40 – 23778474, FAX: 0091-40 – 23770698

General Terms and Conditions of Enquiry & Contract for the Purchase of Goods/ Services

1. The quotation and any order resulting from this enquiry shall be governed by these General Terms and Conditions of enquiry and contract for the supply of goods and the supplier quoting against this enquiry shall, unless specifically stipulates any different terms or conditions, be deemed to have read and agreed to the same.
2. Sealed quotations in double cover with tenderer's distinctive seal, superscribing enquiry number, date and due date are to be submitted so as to reach on or before due date & time, addressed to **Additional General Manager(MM), Bharat Heavy Electricals Limited, Corporate Research & Development Division, Vikasnagar, Hyderabad, Andhra Pradesh, India – PIN-500 093, India.**

In the case of **Two-part bid**, each inner cover shall clearly be labeled as a) **Technical & Commercial Bid** containing technical data/ drawings/ catalogues/ quality plans along with commercial terms and conditions & copy of the price bid with the price columns left blank (unpriced price bid), b) **Price bid** containing prices quotes. Installation and/or Commissioning charges shall be spelt out in absolutely lucid terms, taking into account total charges, rather than quoting vaguely, such as charges per man-day or charges per engineer per day etc. **If the price bid was found later to be different from the unpriced price bid in any way, the offer will be rejected summarily.**

3. **Tender/ Technical bid Opening:** Unless specified otherwise, tenders/ technical bids will be opened on appointed date and time as mentioned in the enquiry or as communicated changed date/time, if any, in the presence of such of those tenderers who may be present.
4. **Delayed/ Late Tender:** Tenders, which have been posted by registered post through the postal department in time before opening date but received after tender opening, shall be treated as regular tenders. Other tenders received after tender opening time shall be treated as late tenders and normally they may be rejected.
5. The Quotation should be free from overwriting and erasures. Corrections and additions, if any, must be attested. Supplier should indicate in the quotation dimensions (Size), weight, rate etc., in the metric system unless the enquiry calls for different unit.
6. **Validity of Quotation:** All quotations shall be kept open for acceptance for a period of ninety days from the date of opening of Tenders/ Technical bid and this shall be deemed to be an express condition of all quotations. The rate shall be quoted in both figures and in words.
7. In the case of Two-part bid, the vendor should furnish technical clarifications, if any, within stipulated time mentioned, failing which, it will be construed that the vendor is not interested in the tender and BHEL shall not consider the offer for further evaluation.
8. **Revision of Pricebid:** In the event of any bidder, after finalizing the technical specifications and scope of supply, opting to revise and submit their latest price bid, then BHEL reserves the right to open their original / previous price bid also while evaluating revised bid.
9. **Pricebid Opening:** Unless specified otherwise in the enquiry, the Price bids of technically qualified vendors shall be opened with prior intimation in the presence of such of those tenderers who may be present.
10. **Conformity to Specifications:** The material should be of the best quality and shall be conforming to our specification given in our enquiry. Unless otherwise agreed upon by BHEL, no payment shall be due by BHEL in respect of any sample. Offers without details of specifications/ applicable catalogues will not be considered and are liable to be rejected.
11. **Terms of Delivery:** All suppliers shall quote the lowest prices on ex-works and FOB/FCA basis. Foreign suppliers will also indicate their Indian agent's name and address with percentage of agency commission out of the quoted price, if any. Name and Address of the supplier's Bankers address should also be given. Indian suppliers for the indigenously manufactured/ imported stock shall quote on Ex-works /Free-on-Rail/Road /FOR-destination basis, indicating packing & forwarding charges, if any, separately.
12. **Taxes and Duties:** Unless specified otherwise in the enquiry, BHEL do not provide "C" or "D" Form as it is engaged in R&D. All Indian suppliers shall clearly mention Sales Tax/ VAT, Excise Duty, and Service Tax etc, if any, payable in addition to the quoted price and indicate applicable rates/ percentage, item-wise. It will be paid

only if Registration Number under State(TIN)/ Central Sales Tax or Service Tax is specifically mentioned in the Bill/Invoice. Vendors without a Sales Tax/VAT registration and applicable Service Tax registration will not be considered.

13. **Insurance:** Insurance will be arranged by BHEL in case of Ex-Works as well as FOB basis supplies.
14. **Terms of Payment:** Full payment will be made within 30 days after receipt, inspection and acceptance of the material (and where involved, Erection and commissioning of the material/ equipment at BHEL/Destination) by Crossed cheque and no Bank commission charges are admissible. The Cheque will be sent by registered post and BHEL is in no way responsible if loss occurs due to delay by postal authorities and cheques falling into improper hands or through forgery or fraud. Suppliers having RBI-SEFT-enabled accounts can seek payment through Electronic Fund transfer. For foreign suppliers, the preferred payment term will be on Sight Draft basis and bank charges inside India will be to BHEL account and outside India will be to supplier's account.
15. Suppliers shall quote competitive price and best delivery for all the items mentioned in the enquiry. BHEL reserves the right to reject partial quotations and to place order on overall landed cost basis. Correct date of effecting supplies in the event of an order should be indicated in the offer. If the supplier's quoted terms are different from BHEL standard payment terms, interest @10.5% per annum (or as indicated in the enquiry) will be loaded to the quoted prices for difference of payment period.
16. **Packing:** The supplier shall be responsible for the goods being properly and adequately packed so as to prevent any loss, damage or deterioration during transit and indicate packing charges, if any, separately.
17. **Part/ Split Ordering:** BHEL reserves right to Order part of the item/ quantity of the enquiry and split the order among qualified vendors.
18. In case the goods enquired are on Rate Contract basis with any other unit of BHEL, such fact should be clearly indicated in the quotation giving full particulars of Rate Contract number, validity and price and also your willingness to comply with order if placed against such Rate Contract. A true copy of Rate contract signed by the supplier should be sent with the quotation.
19. **Inspection:** On receipt, the goods shall be subjected to inspection and also test, if necessary, and our decision regarding the acceptability of the goods shall be final and binding on the suppliers.
20. **Consequences of Failure To Deliver:** The time stipulated for delivery of goods shall be deemed to be the essence of the contract and delivery must be completed within the stipulated date/s. In the event of supplier's failure to supply the goods by the stipulated date/s, BHEL shall be entitled to levy a penalty of ½% per week for the delayed no of weeks or part thereof for the undelivered portion of PO subject to a maximum of 10% total order value.
21. **Withdrawal from the Contract:** In case the supplier withdraws the quotation after its acceptance by BHEL or fails to supply the goods as per the terms and conditions of contract, or at any time repudiated the contract wholly or in part, BHEL shall be at liberty to cancel the Purchase Order and to recover from the supplier the extra cost and other loss incidental to the breach of contract on the part of the supplier.
22. **Guarantee/ Warranty certificate and Manufacturer's Test report:** Invariably in all cases where it is so stipulated, the supplier should furnish Guarantee/ Warranty certificate valid for a period of 18 months from date of supply or 1 year from the date of receipt, acceptance and commissioning(or more, if provide by oem) whichever earlier and manufacturer's Test report along with the goods, failing which, BHEL shall have the right to reject the goods.
23. All ferrous/ non-ferrous items shall be colour coded as per bureau of Indian standards/ or IS standards/ BHEL Standards.
24. **Recovery of Dues:** BHEL shall recover any amount due from the supplier or any amount outstanding to the credit of the supplier with BHEL R&D unit or any other BHEL unit(s) and/or by legal action.
25. **Arbitration & Forum for Legal Proceedings:** All disputes arising in connection with indigenous/ foreign supplies shall be settled through arbitration held at Hyderabad, AP, India and arbitration shall be appointed by Arbitration Tribunal of the Federation of Andhra Pradesh Chambers of Commerce and Industry, Hyderabad, AP, India. The Courts at Secunderabad/ Hyderabad, AP, India shall have jurisdiction in respect of any suit or other legal proceeding arising from or relating to this contract

The rights and remedies of BHEL stated in these General terms and conditions shall be in addition and supplemental to its rights and remedies under law and custom or usage of trade or business and shall in no way be deemed to limit, curtail, supercede or derogate from its said rights and remedies.



ANNEXURE “AA”
BHARAT HEAVY ELECTRICALS LIMITED
CORPORATE RESEARCH & DEVELOPMENT DIVISION
VIKASNAGAR, HYDERABAD – 500 093. INDIA

MATERIALS MANAGEMENT DEPARTMENT
(Information for Technical & Commercial bids with general terms)

ENCLOSURE TO ENQ No:

DATE:

- a) Please indicate(_/) for applicable or (X) for not applicable against each clause of the enquiry
- b) Vendor shall confirm their compliance for applicable clauses (_/) in their offer without deviation.

1) **Technical offer:-**

- a) Vendors to confirm compliance to all points of specifications, attached if any. Deviations if any should be specified in the offer.
- b) Vendors shall furnish relevant technical Documents / Catalogues. Drawings and Quality plan duly taking care of Purchase Specification and Quality requirements along with their offer in duplicate for Purchaser’s review / Verification.

2) **Two Part Bid:-**

Vendor shall submit their offer in 2 parts.

2.1 Technical Bid:- Containing relevant technical data, drawings, catalogues, Quality Plan etc, along with Commercial Terms and Conditions and a copy of the price bid with the price columns left blank (unpriced price bid). If the price bid was found later to be different from the unpriced price bid in any way, the offer will be rejected.

2.2 Price Bid:- Containing the Price(s) quoted. Installation and or commissioning charges shall be spelt out in absolutely lucid terms taking into account the total charges rather than quoting vaguely such as charges as per man day or charges per Engineer per day etc.,

Technical bids will be opened on the due date of the enquiry or any other date fixed by BHEL. Further, vendor should furnish clarifications, if any, required within seven days after the same is sought by Purchaser. If no clarifications/reply received within 7 days, it will be construed that vendor is not interested in the tender and Purchaser will finalise tender accordingly. Price bids received on due date along with technical offers will be recorded and opened subsequently with due intimation to vendors after finalising of technical scope of supply.

These bids shall be submitted in separate sealed covers superscribing the nature of the offer (technical bid or price bid). BHEL Enq No. Due date etc.

Note: In case of non-compliance with the TWO_-PART-BID ie.. clause number 2 and subclauses 2.1 and 2.2. Purchaser reserves the right to summarily reject all such offers.

3) Delivery:-

Vendor shall confirm supply of materials as per the delivery schedule indicated in the enquiry.

4) Negotiations:-

Vendor shall quote competitive price and best delivery to avoid negotiations.

5) Commercial Terms & Conditions:-

Terms of Delivery:

- a) **Vendors shall clearly indicate terms of delivery Viz: Ex-Works/FOR Despatching station/FOR Despatching station FOR Destination/FOB port of loading/FAS Port of loading in their offer. If the terms of delivery is Ex-Works, then vendors shall clearly indicate the following:**
 - 1. Packing and forwarding charges.**
 - 2. Documentation / Handling charges if any**
 - 3. FOB FAS charges (Inland Freight & Insurance charges from vendor works to port of Loading).**
- b) **All Indian Vendors shall clearly specify the Excise Duty in percentage applicable for their supplies. Offers containing expressions such as “Extra as applicable” or “As applicable at the time of Delivery” will be summarily rejected.**
- c) **CST/Local Sales Tax in percentage shall be clearly indicated.**

6) Validity of Quotation:-

Validity of offer should be 90 days after the opening of price bid.

7) Part or split ordering:-

Purchaser reserves the right to order part of item / quantity of the enquiry.

8) For clauses not mentioned in this document see the enclosed “GENERAL TERMS AND CONDITIONS OF ENQUIRY AND CONTRACT FOR THE PURCHASE OF GOODS”

- 9) In case your terms of payment are different from our standard payment terms, interest at the rate of 10.5% per annum (or BHEL’s standard rate of interest) will be loaded to your prices for the difference of period of payment.**



BHARAT HEAVY ELECTRICALS LIMITED
CORPORATE R&D Division
Vikasnagar, Hyderabad – 500093, India.

Suppliers' compliance statement to basic conditions of enquiry

(In case Order to be placed on Indian supplier in Indian currency)

Condition	BHEL R& D's terms	Supplier's compliance (indicate Yes/No. if 'No', state terms desired)
1) Validity of offer	90 days from the tender opening date	
2) Delivery requirements	Free delivery at our stores or FOR destination (as indicated in the enquiry)	
3) Warranty	Unless specifically mentioned in the enquiry, all supplied items to be provided with warrantee for one year (or more, if provided by the OEM) from the date of acceptance/commissioning. In case of equipment involving erection and commissioning, warrantee shall be for 18 months from the date of dispatch or 12 months from the date of commissioning, whichever is earlier	
4) Terms of payment	Full payment will be made within thirty days after receipt, inspection and acceptance of the material at BHEL R&D (and where involved, erection and commissioning of the material/equipment at BHEL/destination), by Crossed Cheque and no Bank commission charges are admissible.	
5) Taxes & Duties	Unless specifically mentioned in the enquiry, we do not provide 'C' or 'D' form. Supplier to specify rates of taxes and duties element wise and related percentages.	
6) Penalty for late delivery	0.5% per week beyond the delivery date as mentioned in the Purchase order on undelivered portion subject to a maximum of 10% of the total order value	

* BHEL R&D reserves the right to reject any offer due to non-compliance with the above conditions and/or non-receipt of this form in duly filled condition

* Any other elements of cost in addition to the above may please be specified in detail

(Signature and Stamp/Seal of Vendor)



BHARAT HEAVY ELECTRICALS LIMITED
CORPORATE R&D Division
Vikasnagar, Hyderabad – 500093.

IMPORTED

Suppliers' compliance statement to basic conditions of enquiry

(In case Order to be placed on the Principal and foreign currency)

Condition	BHEL R& D's terms	Supplier's compliance (indicate Yes/No. if 'No', state terms desired)
01) Validity of offer	90 days from the tender opening date (or as per enquiry)	
02) Delivery requirements	FCA – Nearest International Airport (or as indicated in the enquiry)	
03) Warranty	Unless specifically mentioned in the enquiry, all supplied items to be provided with warrantee for one year (or more, if provided by the OEM) from the date of acceptance/ commissioning. In case of equipment involving erection and commissioning, warrantee shall be for 18 months from the date of dispatch or 12 months from the date of commissioning, whichever is earlier	
04) Terms of payment	Sight draft. All bank charges inside India will be to BHEL R&D account and out side India will be to suppliers account. Documents through State Bank of India, HAL Complex, Balanagar, Hyderabad, AP, India-500 042.	
05) Agency commission	Pl specify percentage charges, if any. Indian agency/agent commission will be in Indian Currency only.	
06) Erection/ Commission	As per enquiry	
07) Documentation	As per enquiry	
08) Insurance	BHEL will arrange Insurance based on intimation to our Insurance agency, United India Insurance Co., DO-2, Secunderabad, AP, India.	
09) Penalty for late delivery	0.5% per week beyond the delivery date as mentioned in the Purchase order on undelivered portion subject to a maximum of 10% of the total order value	

* BHEL R&D reserves the right to reject any offer due to non-compliance with the above conditions and/or non-receipt of this form in duly filled condition

* Any other elements of cost in addition to the above may please be specified in detail

(Signature and Stamp/ Seal of Vendor)



BHARAT HEAVY ELECTRICALS LTD.
Corp. R&D DIVISION
VIKAS NAGAR,
HYDERABAD-500 093 (INDIA)

VENDOR REGISTRATION FORM

[FORM TO BE SUBMITTED* BY THE BIDDER ALONG WITH TECHNICAL-BID]

Before filling please refer to instructions on page-4

1.0 VENDOR PROFILE:

1.1 & 1.2 Name and address of the vender:

Phone Nos.:

Fax No.:

Email:

1.4 Local representative of the vender in India/ Hyderabad:

Phone Nos.:

Fax No.:

Email:

Contact person:

Mobile No.:

2.0 & 2.1 Type of Organisation:

PROPRIETORSHIP	COMPANY	SISTER CONCERN	ANY OTHER (Please specify)
PARTNERSHIP	CORPORATION	Small Scale Industry	

3.0 Annual Turn Over:

Name and address of the Banker:

Sr.No.	Bank	Address

4.0 REGISTRATION PARTICULARS

4.1 IT Permanent Account No.(PAN):

4.2 & 4.3 State and central sales tax Registration No.:

4.4 ED/ Service Tax Registration No.:

PF Account No.:

Labour Licence No.:

ESI Account No.:

5.2 Contact person:

Mobile No. :

5.3 Total Number of employees:

Graduates (Engr./Scientists/Mgmt/Fin.)	Consultants	Workers		
		Sup./Skilled	Semiskilled	Unskilled

6.0 Wish to register for supplies/ services other than one bidding for :

<u>Sr.No.</u>	<u>Service/Supplies</u>	<u>Capacity</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		
<u>7</u>		

6.1 Reference list :

(Only recognized public and private sector companies, attach if printed copy available)

<u>Sr.No.</u>	<u>Customer</u>	<u>Volume / Year</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		
<u>7</u>		

7.0 & 8.0 Infrastructure / facilities :

<u>Sr.No.</u>	<u>Facility (with specifications)</u>	<u>Age/ Year procured</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		
<u>7</u>		
<u>8</u>		
<u>9</u>		
<u>10</u>		

9.0 Registration with other BHEL Unit/Units:

<u>Sr.No.</u>	<u>9.1.1 Unit</u>	<u>9.1.2 Registration No.</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		

Any Other information :

Declaration:

The information furnished above is true and authentic.

(CEO / Proprietor)

SEAL:

Date:

The competent authority reserves the right to accept or reject the registration. Registered vendors will be informed by mail / email, as convenient. Contact Sr.DGM (MM) for clarification/ additional information on registration.
A separate communication will be sent to you in case of non-registration, citing reasons thereof.

Instructions

1. Answer all items, use NA for items not applicable.
2. BHEL units do not require this registration.
3. Submit the form in duplicate.
4. Use additional sheets for want of space if required.
5. Attach copies of latest documents in respect of items 4.0 (Registration no.s)
6. Photographs of registered office and the chief executive/proprietor shall be furnished.
7. Use A4 sheets for this document and the enclosures.

* REGISTERED BIDDERS, HAVING BHEL (R&D) REGISTRATION NO./ HAVE SUBMITTED THIS FORMAT EARLIER, NEED NOT FURNISH THIS INFORMATION SECOND TIME (UNLESS DESIRE TO UPDATE IT).



BHEL CORPORATE R & D
VIKAS NAGAR- HYDERABAD - 500 093
ANDHRA PRADESH – INDIA
SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

ALL COLUMNS SHOULD BE PROPERLY FILLED IN THE SPACE PROVIDED FOR. WHEREVER IT IS NOT APPLICABLE PLEASE WRITE “NOT APPLICABLE”. INCOMPLETE OR INCORRECT FORMS MAY NOT BE CONSIDERED.

1.0 GENERAL INFORMATION:

1.1....NAME OF COMPANY

1.2....DETAILS OF HEAD OFFICE:

ADDRESS :
TELEPHONE :
FAX :
.EMAIL :
.WEB SITE :

1.3....DETAILS OF FACTORY/WORKS:

ADDRESS :
TELEPHONE :
FAX :
.EMAIL :
.WEB SITE :

1.4....DETAILS OF MARKETING AGENT

ADDRESS :
TELEPHONE :
.FAX :
.EMAIL :
.WEB SITE :

1.5 CHIEF EXECUTIVE

NOTE: PLEASE ATTACH SEPARATE SHEETS, IF SPACE FOUND IS INADEQUATE

AUTHORISED SIGNATORY



BHEL CORPORATE R & D
VIKAS NAGAR – HYDERABAD – 500 093
ANDHRA PRADESH – INDIA

SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

- 1.6 CONTACT PERSON(S)
FOR PRODUCT OFFERED
NAME(S)
OFFICIAL CAPACITY
ADDRESS:
TELEPHONE
FAX
E-MAIL
- 1.7 YEAR OF ESTABLISHMENT
- 1.8 PRODUCTION CAPACITY PER ANNUM
- 1.9 PARTICULARS OF PRODUCT INCLUDING
SPECIFICATION AND RANGE OFFERED
FOR REGISTRATION
(ATTACH BROUCHERS AND CATALOGUE)
- 1.10 NAME(S) OF BANKERS
- 1.11 BANKER’S CERTIFICATE
- 1.12 PORT OF LOADING
- 1.13 NEAREST AIRPORT
- 1.14 NAME OF THE INDIAN AGENT, IF ANY
WITH AUTHORISATION LETTER
- 1.15 ANY OTHER INFORMATION:

AUTHORISED SIGNATORY



BHEL CORPORATE R & D
VIKAS NAGAR – HYDERABAD – 500 093
ANDHRA PRADESH – INDIA

SUPPLIER REGISTRATION FORM

(FOREIGN SUPPLIER)

2.0 FINANCIAL INFORMATION

2.1...TOTAL CAPACITY

2.2...ANNUAL TURN OVER FOR LAST 3 YEARS

2.3...WHEHER CREDIT LICENSE ACCEPTABLE YES/NO

3.0 QUALITY MANAGEMENT SYSTEMS
ENCLOSED FORMAT PART-B

3.1 EXPERIENCE LIST FOR SAME/SIMILAR ITEMS
TO BE ENCLOSED

4.0.....FUTURE EXPANSION PLANS:
(GIVE DETAILS)

5.0 LIST OF ENCLOSURES:
INCLUDING BROUCHERS, CATALOGUES, TECHNICAL
LITERATURE etc...

6.0 ANY OTHER INFORMATION

SIGNATURE OF SUPPLIER
NAME
DESIGNATION
DATE
.....OFFICIAL SEAL

AUTHORISED SIGNATORY
