

**BHARAT HEAVY ELECTRICALS LIMITED**

CORPORATE RESEARCH &amp; DEVELOPMENT DIVISION

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**ENQUIRY**

To

-

Enquiry No: Enq Date: Due Date: Delivery By:

330804551 10-NOV-08 30-DEC-08

-

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     | DESIGN, MANUFACTURING, TESTING AND SUPPLY OF 3 MVA TRANSFORMER AS<br>PER SPECIFICATIONS<br>ENCLOSED IN ANNEXURE 1 | NO   | 1   |

Please submit your offer in Two parts as per enclosed "General Terms and Conditions of enquiry & Contract for the purchase of Goods/ Services" in separate sealed covers as detailed below:

- 1) First cover shall contain a) Technical & Commercial bid, b) Compliance Statement, c) Un-priced Price bid, i.e. a copy of the Price bid with the price(s) columns left blank.
- 2) Second Cover containing Price bid.

Note:

- 1) If the Price bid is found to be different from the un-Priced Price bid in any way, the offer will be rejected.
- 2) Unsigned offer(s) are liable for rejection.
- 3) Taxes & Duties quoted will be taken for cost evaluation & order placement and no change will be entertained later except in the case of changes made by the Government.
- 4) Changes in Taxes and Duties because of the changes in Turnover etc. will be to the supplier's account.
- 5) In case any Taxes/duties exempted, a self declaration for the same may be attached to the offer.

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

Yours faithfully  
 for

BHARAT HEAVY ELECTRICALS LTD

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)

RAMESH G  
 Sr Manager

**Email: gramesh@bhelrnd.co.in**

## **SPECIFICATIONS OF STATCOM TRANSFORMER (FOR 2.5 MVAR STATCOM)**

|   |  |
|---|--|
| <b>PROJECT</b>                                    | <b>: 2.5 MVAR STATCOM. The transformer will be used for connecting a 2.5 MVA Inverter with grid at 6.6 kV.</b>   |
| <b>EQUIPMENT</b>                                  | <b>: Transformer</b>   |
| Quantity  | : 1 No.  |
| 1. Primary Rating (at all taps)                   | : 3 MVA Continuous (Fundamental)   |
| 2. Frequency                                      | : 50 Hz (Fundamental)  |
| 3. Vector group                                   | : YNd11d11<br>HV Winding Star Connection<br>LV Windings Delta Connection   |
| 4. HV Winding Voltage (L-L)                       | : 6.6 kV $\pm$ 10%, 3-phase  |
| 5. LV Winding Voltage (L-L)<br>LV Winding Current | : 2365 V (Fundamental)<br>: 400 A (Each secondary winding should be capable of carrying 400 A. The transformer will not be loaded more than 3.0 MVA)   |
| 6. Tapping on HT Windings                         | : $\pm$ 2.5 % , $\pm$ 5 % (Rated kVA on all Taps)  |
| 7. H.V. Neutral                                   | : This will be the fourth terminal in HV cable box, and insulated to full line voltage including clearances and creepages. Current carrying capacity and size shall be same as line terminals.                 |
| 8. Impedance , Tolerance                          | : 5% on principal tap ( Minimum)<br>Tolerance + 10 % - 0 %<br>Impedance of the both the secondary windings should be identical   |
| 9. Duty   | : Inverter duty. The transformer secondary will be connected to a three-phase inverter with inductor of 0.15 PU inductance. The THD on inverter output voltage in operating range varies between 15 % to 25 %. |
| 11. DC Component (mV)                             | : 160mV ( This is always present in the input supply of transformer. Transformer should be suitably designed.  |
| 12. Over-fluxing                                  | : Transformer shall be suitable for 125% over fluxing at the time of STATCOM start-up (duration of 10 secs.)   |
| 13. Insulation                                    | : All windings to be uniformly insulated. The windings to be designed to BIL Level – 2 of IS 2026  |

14. Protection : The transformer should be provided with Buchholz relay.  
Other relevant protections as per BIS should be provided.
15. Current Transformers on HT side : Insulation Class of CT 6.6 kV  
 1) 2 nos. of 300 / 5 Amps , 10 VA , 5P10 Class on Line  
 2) 1 no. of 150 / 5 Amps , 10 VA , 5P10 Class on Neutral
- Current Transformers on LT side : Insulation Class of CT 3.3 k V  
 6 nos . of 600 / 5 Amps , 10 VA , 5P10 Class on Line.  
 (3 nos. of CT per each secondary winding)
16. Type of cooling : ONAN. Mineral oil filled
17. Installation : Outdoor duty (Under direct sunlight)
18. Ambient temp. : 55 Degree C
19. Temperature rise  
 (a) Design ambient temp. : 55 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
20. Relative Humidity : 100 %
21. Short Ckt. level at 6.6 kV : 300 MVA
22. Suitability to withstand : The transformer should be designed to withstand vacuum breaker switching on HT side
23. Transformer Material  
 a) Material of winding : Copper – Electrolytic Grade  
 b) Core : Not to exceed  $1.3 \text{ Wb/m}^2$  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. **The tank cover shall be sloped to prevent retention of rain water.**  
 All bolted connections shall be fitted with weather proof hot oil resistant neoprene gasket, in between for complete oil tightness.  
 Calculation for pressure test shall be submitted.  
 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.
24. Noise : Not to exceed values specified in NEMA TR –1
25. 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.

26. Construction : Earth screen to be provided between primary and secondary side. Since the transformer is used for converter duty. Since the transformer is used for converter duty, it should be 3 legged core, 5 legged core is not allowed.
27. 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 Marshalling 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. Terminals to be threaded or Plug type
28. Tap changer : OFF circuit tap changer with padlocking facility as per IS 2026 with warning plate  
" SWITCH TO BE OPERATED WITH  
TRANSFORMER DE-ENERGISED"
29. Painting (Transformer and accessories) : Polyurethane
30. Shade : 631 as per IS 5
31. Fittings and accessories : As per Annexure-A
32. Standards : IS 2026
33. Testing (Routine Tests) : As per Annexure – B
34. Quality plan : Supplier should submit his Quality Plan for approval (Post Ordering stage)
35. Testing (Type Tests) : As per Annexure - B . Procedure as per IS 2026
36. No load loss & Load loss : Guaranteed maximum values without any positive tolerance shall be given with the offer.
- 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.
37. Data Sheet : DATA SHEET is enclosed with this specification. The same is to be filled up and submitted along with the technical offer.

38. Information Req'd. with the offer : (a) Filled up data sheet (Annexure – C)  
(b) Deviations to this specification. If there are no deviations, supplier must mention the same explicitly in their technical offer.  
(c) 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  
(d) Supplier to give charges for individual type tests.  
(e) Supplier to furnish item wise price for list of spares.  
(f) Short description on the construction of core, and disposition of windings in the transformer.
39. Information required after order placement : Outline GA Drg. showing weights, dimensions, foundation plan and List of Accessories. Drawing along with design summary should be submitted for approval
40. Document to be submitted : (a) Operation and Maintenance manual.  
(b) Test Certificates for Routine & Type tests, and guarantee Certificates.  
(c ) Guarantee Certificate

Note : The test charges for each type test must be mentioned test wise in the price bid. However, a confirmation to that effect must be contained in the technical offer. Unpriced copy of price bid must be enclosed in Technical offer.

## **ANNEXURE - A**

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

| <b><u>SL.NO</u></b> | <b><u>DESCRIPTION</u></b>  | <b><u>QTY</u></b> |
|---------------------|--|-------------------|
| 01.                 | Oil filling hole with cover  | 1                 |
| 02.                 | Conservator with sump & drain valve 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 Silica gel 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      |
| 15. | Four Jacking Pads to enable transformer with oil to be raised or lowered using hydraulic or screw jacks.   | 1 SET  |
| 16. | Manufacture's name plate (stainless steel)   | 1      |
| 17. | Bi-directional rollers + Bi-directional skids  | 1 SET  |
| 18. | Detachable radiator with bottom drain plug, top air release plug and top & bottom shut off valve.  | 1 SET  |
| 19. | 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  |
| 20. | 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  |
| 21. | Cable glands & lugs<br>Cable sizes shall be informed at the time of drawing finalisation. Cable lugs shall be of tinned copper for crimping to stranded aluminum conductor cable. Cable glands will be of double compression type.   | 1 SET  |
| 22. | 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   |
| 23. | Inspection openings on tank with handles   | 2 Nos. |
| 24. | Remote WTI – For Remote Control Panel<br>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 LV Winding Delta Connection wire, 2.5 mm stranded copper wire.
- 4) Cable glands and lugs shall be supplied loose along with 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 - B**

**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
- 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,

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

**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 |
| b) Copper loss at full load and 75 deg C KW | * } | BELOW    |

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)<br>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 ( $\text{mm}^2$ ) :
- 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 ( $\text{Wb/m}^2$ ) :
  - ii) 100% voltage ( $\text{Wb/m}^2$ ) :
  - iii) 110% voltage ( $\text{Wb/m}^2$ ) :
- 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) :

46) Tank/enclosure details

i) Side (mm) :

ii) Bottom (mm) :

iii) Cover (mm) :

47) Insulation levels

**HV**

**LV**



i) Power Frequency :

ii) Lightning Impulse :

48) Bushings

**HV**

**LV**

i) Type : Porcelain Porcelain

ii) Rated Voltage :

iii) Lightning Impulse :

iv) Creepage distance :

v) Power Frequency :

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.



**BHARAT HEAVY ELECTRICALS LIMITED**  
**CORPORATE R&D DIVISION, VIKAS NAGAR, HYDERABAD – 500 093, AP, India**  
Ph: 0091-40 – 23778474, FAX: 0091-40 – 23770698

RD:MPX:F-20

**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) and Head, 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 current 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 clearly. 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) though Electronic Fund transfer (RTGS/NEFT/SEFT) with bank charges to the supplier's account. 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 (Refer #14 above), interest @11% 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. **Penalty for late delivery:** 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, 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% of total order value shall be levied at the discretion of BHEL.
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, incidentals due to the breach of contract on the part of the supplier through risk purchase.
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 indigenously/ 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.



RD:MPX:F-18

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

**IMPORTED**

**Suppliers' compliance statement to basic conditions of enquiry** (to be submitted along with Technical & Commercial bid)  
**Enquiry number:** **Enquiry dt:**

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

| Condition                    | BHEL R & D's terms  | Supplier's compliance<br>(indicate Yes/No. if 'No', state terms desired) |
|------------------------------|---|--|
| 1. Validity of offer         | 90 days from the tender opening date ( or as per enquiry)   |  |
| 2. Delivery requirements     | FCA – Nearest International Airport (or 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          | Sight draft. All bank charges inside India will be to BHEL R&D account and outside India will be to the supplier's account. Documents through State Bank of India, Trade Finance Central processing Cell (TFCPC), Opp. Anand Theatre, Secunderabad, Andhra Pradesh, India-500003.<br>SWIFT Code: SBININBB602,<br>Phone: 91-40-27816795, FAX: 91-40-27720459                       |  |
| 5. Agency commission         | Pl specify Indian agency commission charges, if any, in percentage of quotation. The same shall be paid to the agency in Indian Currency only.  |  |
| 6. Erection/ Commission      | As per enquiry  |  |
| 7. Documentation             | As per enquiry  |  |
| 8. Insurance                 | BHEL will arrange Insurance based on intimation to our Insurance agency. Address of the agency will be mentioned in the Purchase Order.   |  |
| 9. Penalty for late delivery | 0.5% per week beyond the delivery date 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)



RD:MPX:F-17

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

**Suppliers' compliance statement to basic conditions of enquiry** (to be submitted along with Technical & Commercial bid)  
**Enquiry number::** **Enquiry date::**

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

| Condition                    | BHEL R& D's terms  | Supplier's compliance<br>(indicate Yes/No. if 'No', state terms desired) |
|------------------------------|--|--|
| 1) Validity of offer         | Unless specifically mentioned in the enquiry, 90 days from the tender opening date   |  |
| 2) Delivery requirements     | Free delivery at our stores or FOR destination (or 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 despatch or 12 months from the date of commissioning, whichever is earlier |  |
| 4) Terms of payment          | Unless specifically mentioned, 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 EFT/RTGS with bank charges, if any, to supplier's account.   |  |
| 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. Terms like "inclusive" or "extra" are not acceptable. Please mention "NIL" if taxes/ duties are exempted/ not applicable.   |  |
| 6) Penalty for late delivery | 0.5% per week beyond the delivery date 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)**



RD:DP:MPX:F-14

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

1.6 CONTACT PERSON(S)  
FOR PRODUCT OFFERED  
NAME(S)  
OFFICIAL CPACITY  
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 REGISTRTION  
(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

**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 ( AUTHORIZED SIGNATORY)

NAME

DESIGNATION

DATE

.....OFFICIAL SEAL

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Note: Please attach separate sheets, if space found is inadequate



# BHARAT HEAVY ELECTRICALS LTD.

Corp. R&D DIVISION

VIKAS NAGAR,

HYDERABAD- 500 093 (INDIA)

Ph: 040 – 23778474, Fax: 040 – 23770698, email: mpx@bhelrnd.co.in

RD:DP:MPX:F-13

## VENDOR REGISTRATION FORM

(Indigenous supplier)

[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 Name and address of the vendor:

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Phone Nos.:

Fax No.:

Email: 1.

2.

#### 1.2 Local representative name & address in Hyderabad/ Secunderabad:

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Phone Nos.:

Fax No.:

Email:

Contact person:

Mobile No.:

### 2.0. TYPE OF ORGANIZATION:

|                |             |  |                               |
|----------------|-------------|--|-------------------------------|
| PROPRIETORSHIP | COMPANY     | SISTER CONCERN ( mention vendor<br>registration number of main organization) |                               |
|                |             |  |                               |
| PARTNERSHIP    | CORPORATION | Small Scale Industry   | ANY OTHER<br>(Please specify) |
|                |             |  |                               |

In case of SSI unit, copy of registration to be enclosed.

**3.0 ANNUAL TURN OVER:**

| # | Year                      | Turn-Over |
|---|---------------------------|-----------|
| 1 | Current Year(budgeted)    |           |
| 2 | Previous year ( 200 - 0 ) |           |
| 3 | Prior Year ( 200 - 0 )    |           |

**4.0 NAME AND ADDRESS OF THE BANKER:**

1. Bank Name
2. Branch name
3. Account number
4. Account Type
5. MICR Code:
6. IFSC Code(RTGS/NEFT):
7. Bank Phone number(s),

Blank cheque, duly cancelled, to be enclosed.

Please note that all payments shall be made through Electronic clearance services to your above account against the orders executed, if any.

**5.0 REGISTRATION PARTICULARS ( relevant copies to be enclosed)**

- 5.1 IT Permanent Account No.(PAN):
- 5.2 State sales tax/VAT Registration No.:
- 5.3 Central Sales Tax Registration No.
- 5.4 ED Registration No.
- 5.5 Service Tax Registration No.:
- 5.6 PF Account No.:
- 5.7 Labour Licence No.:
- 5.8 ESI Account No.:

**6.0 CONTACT PERSON: S/Sri**

Designation:::

Phone/ Mobile No. :

**7.0 TOTAL NUMBER OF EMPLOYEES:**

| Graduates<br>(Engr./Scientists/<br>Mgmt/Fin.) | Consultants | Workers      |             |           |
|---|-------------|--------------|-------------|-----------|
|   |             | Sup./Skilled | Semiskilled | Unskilled |
|   |             |              |             |           |
|   |             |              |             |           |
|   |             |              |             |           |

**8.0 WISH TO REGISTER FOR SUPPLIES/SERVICES:**

| # | Service/Supplies | Capacity |
|---|------------------|----------|
| 1 |                  |          |
| 2 |                  |          |
| 3 |                  |          |
| 4 |                  |          |
| 5 |                  |          |
| 6 |                  |          |
| 7 |                  |          |



## 9.0 REFERENCE LIST :

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

| # | Customer | Volume / Year |
|---|----------|---------------|
| 1 |          |               |
| 2 |          |               |
| 3 |          |               |
| 4 |          |               |
| 5 |          |               |
| 6 |          |               |
| 7 |          |               |

## 10.0 INFRASTRUCTURE / FACILITIES:

| #  | Facility (with specifications) | Age/ Year procured |
|----|--------------------------------|--------------------|
| 1  |                                |                    |
| 2  |                                |                    |
| 3  |                                |                    |
| 4  |                                |                    |
| 5  |                                |                    |
| 6  |                                |                    |
| 7  |                                |                    |
| 8  |                                |                    |
| 9  |                                |                    |
| 10 |                                |                    |

## 11.0 REGISTRATION WITH OTHER BHEL UNIT/UNITS:

| # | Unit | Registration No. | Year |
|---|------|------------------|------|
| 1 |      |                  |      |
| 2 |      |                  |      |
| 3 |      |                  |      |
| 4 |      |                  |      |

## 12.0 ANY OTHER INFORMATION :

### DECLARATION:

The information furnished above is true and authentic.

**(CEO / PROPRIETOR)**

**SEAL:**

**DATE:**

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The competent authority reserves the right to accept or reject the registration. Registered vendors will be informed by mail / email, as convenient. Contact AGM (MM) for clarification/ additional information on registration.

A separate communication will be sent to you in case of non-registration, citing reasons thereof.

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### Instructions

1. Answer all items; use NA for items not applicable.
2. BHEL units do not require this registration.
3. Use additional sheets for want of space if required.
4. Attach copies of latest documents in respect of items 5.0 (Registration no.s)
5. Photographs of registered office and the chief executive/proprietor shall be furnished.
6. Use A4 sheets for this document and the enclosures.

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\* REGISTERED BIDDERS, HAVING BHEL (R&D) REGISTRATION NO. OR HAVE SUBMITTED THIS FORMAT FOR REGISTRATION, NEED NOT FURNISH THIS INFORMATION AGAIN