

## **Tender Documents**

Tender No. ED/SWG/TR/003/09-10/RNB

Date: 23/06/2009

**Invitation:**

Firm price is invited for the item mentioned in our Tender as per our given specification. Any clarification or additional information, if required, the bidder should call on us personally to get those things cleared. Alternative tender is liable for rejection.

**Item:**

- 1). 315 KVA, 3.3 KV/550 Volt FLP Dry Type Transformer - 6 Nos.
- 2). 315 KVA, 3.3 KV/440-550 Volt FLP Dry Type Transformer - 24 Nos.

**Scope of work:**

Design, Manufacturing, Testing and Supply of above mentioned Transformer.

**Delivery:**

8 to 10 Nos. per months after receipt of Purchase Order from our end.

**Liquidated Damages:**

L.D. is applicable on your delayed supply @ ½ % per week maximum 5% for the value of the delay portion of your supply.

**Submission of offer:**

Tender should be submitted in two separate parts in two separate sealed envelopes as given hereunder:

- a) Part-1-Techno-Commercial Bid
- b) Part-II-Price Bid.

**Part I of the offer (Techno-Commercial Bid) should contain:**

1. Past experience in similar job.
2. Present customer Profile.
3. List of Plant & Machinery
4. Details of Man power: Technical/ Support function
5. Manufacturing capacity per month (dedicated for AYCL).
6. Delivery Period: Please Specify.
7. Design: The Transformer should be manufactured and supplied strictly as per our Specification and Drg. Nos. 3-TS-TEND-01. Transformer Tank will be free issued from our end.
8. Excise Duty: Bidders should state the rate of Excise Duty, if applicable and E.D. Gate Pass will have to be submitted along with their supply of materials.
9. VAT: The bidder should also mention their VAT registration number.
10. Packing/Forwarding Charges (if any).
11. Freight: F.O.R. Destination (Free of cost delivery at AYCL Works).
12. Insurance
13. Acceptance of L.D.: @ ½ % per week maximum 5% of the value of undelivered quantity will be applicable

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- .14. Guarantee Clause: The product shall be guaranteed against all manufacturing defects, bad workmanship, defective raw materials and faulty design for a period of 12 months from the date of commissioning or 18 months from the date of delivery whichever is earlier. During this period if the product is found to be defective due to any of the above reasons you shall undertake to repair/replace the same at free of cost.
15. Inspection Clause: Primary inspection at your Works and final inspection at our Works. Any small rectification/modification suggested by the ultimate customer as pointed out during inspection to be done at no extra cost. **Temperature Rise Test is mandatory** which should be witnessed by our inspector at your works.
16. Test Certificate: To be submitted along with your delivery Challan
17. Risk Purchase Clause: The Company reserves the right to impose Risk Purchase Clause for delay in execution / supply. The company shall have the right to do the same unexecuted job through some other agencies which shall be deemed fit and the additional cost of the same (incidental and consequential) shall be to your account which with respect to our intimation or observation whatsoever.
18. Payment Terms: PDC will not be entertained.
19. Validity Period of the Offer: The offer should remain valid for at least 90 days.
20. Registration: To be done for new vendors.
21. E.M.D.: Techno-Commercial Bid should accompany with an Earnest Money of Rs.50,000.00 (Fifty Thousand) in favour of Andrew Yule & Co. Ltd. by a demand draft/Pay order payable at Kolkata (For existing enlisted vendors having outstanding amount more than the E.M.D. amount may apply for adjustment of the same with their outstanding amount which is to be clearly spelt out) MSME registered vendors may appeal for exemption of depositing the E.M.D. amount along with the valid registration certificate.
22. PBG: The successful bidder shall have to submit a Performance Bank Guarantee from a Nationalized Bank amounting to 10% of the value of our Purchase Order covering Guarantee Period. In case of non submission of PBG the same amount will be retained from your bill as performance guarantee for the guarantee period and the same will be released after the expiry of Guarantee Period.

**Part-II of the offer (Price Bid):**

**It should exclusively based on scope of work & contain price/unit of the quoted Item only.**

**Price should be quoted in two separate parts: (a) Labour involve in per unit job. (b) KIT (the materials to be supplied by vendor to complete the job) per unit.**

Tenders super scribing Tender No. and due date on the envelope should be submitted (in English Language) in two parts in two separately Sealed Envelopes containing Techno-Commercial Bid and Price Bid in the Tender Box kept at purchase department of our Office within the specified date (up to 4.00) p. m as mentioned in our Tender. Tenders arriving after the date & time specified will not be considered. The bidder must sign the tender pages at bottom for each page. Any tender containing vague and indefinite expression such a "Subject to immediate acceptance or subject to prior sale" will not be considered.

Techno-Commercial Bid to be opened on the date of opening at 10.00 A.M. Only after finalization of Techno-Commercial Bid, Price Bid to be opened Representatives of the bidders may be present at the time of the tender opening.

**Last date of submission: 21-07-2009, Date of Opening: 22-07-2009**

Special Note:

Price Variation Clause:

No request for price revision will be entertained once the rate is settled.

The buyer reserves the right to accept or reject any or all the tenders or to waive any informality, minor deviation or omission without assigning any reasons whatsoever.

During the execution of the order and also at the time of placement of Purchase Order, the buyer reserves the right to decrease, increase or distribute the required quantity among the bidders at the L-1 rate and terms and conditions

Timely delivery is the essence of the contract. In the event of manufacturers capacity and financial constraint or customer's delivery fulfillment AYCL reserves the right to split the total requirement among L1, L2 and L3 etc at the negotiated L1 price.

The items of the Tender should be manufactured at bidder's premises only and sub-contacting shall not be allowed without proper authority or prior permission from AYCL.

**The CORE Drawing and COIL Winding details to be submitted by successful bidders before taking the manufacturing process.**

Testing & Inspection:

Our Inspection Authority may inspect the Job at the different stages of production (if required) and approval to be obtained for final production.

The GA drawing and Tank to be collected from our factory at 14, Mayurbhanj Road kolkata – 700 023. Tank will be free issued to the successful bidders. All other materials including Hardwires, Insulators etc. are vendor's scope of supply. The Free Issue materials to be collected by you from our factory at 14, Mayur Bhanj Road, Kolkata-23 at your cost of transportation.

A Bank Guarantee covering the value of Free Issue items to be submitted by the successful bidders before lifting the same.

Hardware:

All hardware, fasteners and other consumable items used should be as per I.S. and cost of those should be included in price.

Offer is subjected to rejection in case of any ambiguity or omission of any point as per our specification and requirement. AYCL reserves the right to reject any or all the bids received, without assigning any reason whatsoever.

In case of any dispute relating to this contract, the decision of AYCL Management shall be binding and final.

**Specification of FLP Transformer****3.3 KV 315 KVA 3300/550 V FLP Transformer- Qty Reqd 6 Nos.**

Transformer will be flameproof M S Fabricated naturally air cooled double wound wheel mounted and as detailed below:

No load Voltage Ratio	: 3300V / 550 V
Rated Capacity	: 315 KVA
Connection	: Delta / Star
Vector Group	: Dy 11
Winding	: Copper
Tapings on HV Winding	: Tapings to be provided. For +/- 2.5%, +/- 5%, +/- 7.5% & +/- 10%.
Impedance	: 4%
Ambient temp	: 45 deg C
Class of Insulation	: H

The Transformer should be fitted with following:

- There must be a provision for attaching haulage rope chapel for hauling in underground mines.
- 4 Nos Lifting Lugs & Shackles.
- Lifting Lugs for core & winding.
- Inspection cover & access cover for internal links.
- Sump for transformer tank.
- Adjustable roller & axle to be provided to suit 610 mm track gauge in order to facilitate transportation in mines. The wheels will be 305 mm dia deep flanged broad tread to easily accommodate any unevenness in the tracks. Clearance between the rail level & bottom of the transformer tank at either 125 mm or 150 mm. The wheel track can be adjusted to any known gauge between 610 mm and 914 mm.

Terminal arrangement: Suitable resin cast bushings will be provided on the HV & LV Sides. Pockets with flanges will be provided on HV & LV sides to receive circuit breaker on HV Side & Air Insulated terminal chamber on LV Side.

Details of Transformer:

- |                            |  |
|----------------------------|--|
| a. Winding                 | : Copper Wound.                                  |
| b. Cooling                 | : Air Cooled.                                    |
| c. Rating                  | : 315 KVA.                                       |
| d. Voltage Ratio           | : 3.3 KV/550 V                                   |
| e. Connection & Vector Gr. | : Delta / Star DY 11                             |
| f. Tapping                 | : +/- 2.5%, +/- 5%, +/- 7.5% & +/- 10%           |
| g. Temp rise & Amb Temp    | : As per relevant IS.<br>Ambient Temp: 45 deg C. |

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- h. Humidity : 100 %  
i. Loss fig : No Load Loss: 700 Watts +/- Tol as  
per IS Full Load Loss: 3000 Watts +/-  
Tol. as per IS  
j. Drain sump & Inspection cover : To be provided.  
k. FLP Feature : As per IS 2148

Provision of roller axle assembly to be provided.  
Details of Insulating material will be non hygroscopic type.  
There will be inspection cover in tap changing.  
Drain sump valve to be provided for periodical draining of condensed vapor.  
Relevant IS – IS 2148 – 2004, IS 13118.  
There will be provision for neutral of all transformers to be grounded through a proper resistance.

TRANSFORMER ENCLOSURE WILL BE MADE FREE ISSUE.

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**TECHNICAL SPECIFICATION****315 KVA 3.3 KV/ 550-440 V FLP Transformer**Qty Reqd: **24 Nos**

Specification of Transformer	: 315 KVA at 440 V.
No of Phases	: 3
Frequency	: 50 Hz +/- 3%
No load Voltage HV	: 3300 V
Highest System Voltage	: 3600
LV	: 440 – 550 V
Type	: Core
Service	: FLP Dry Type.
Vector Group reference	: Dyn 11
Transformer Tapping	: -5% to 5% in steps of two & half % (through off circuit links)
Winding	: Double wound copper conductor
Insulation	: Class C
Cooling	: Natural Air
Percentage Impedance voltage	: 4.00

The transformer should conform to the latest issues for the following Specification.

IS 2148 – 1981: For Flameproof Construction.

IS 1271 – 1985: For Insulation materials.

IS 5351 - 2001: Do

IS 5352 - 1999: Do

IS 11333 – 1985: For Dry Type Transformer for use in mines.

IS 2026 – 1977: For general design rating & performance.

IS 6789 – 1972: For cable adopters & couplers

IS 13118-1971: For HV AC Breaker

The transformer portion should be provided with the following fittings:

- a. Inspection cover for tap changing gears (tap changing by off circuit links)
- b. 2 Nos separate earthing terminals.
- c. Rating & Diagram plate.
- d. Lifting lugs fitted with shackle, four lugs shall be of sufficient strength to support the whole wt of the transformer when slung by any one lug.
- e. The complete Transwitch unit with the skid shall be suitable to mount on Tub Chassis (AY Scope).
- f. The core & winding assembly shall be provided with means for attaching for attaching to lifting tackle.
- g. Two nos FLP Drain plugs to be provided on either side of bottom of transformer Tank for draining the condensed water.
- h. Means shall be provided to ensure correct registration of the core in the tank and to prevent movement of the core and windings when transformer/Transwitch is transporting into the mine.
- i. One No NGR ( Scope of AY )to be provided between the Star Connection of the secondary winding of Transformer and earth to restrict the earth fault current to 750mA



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## Efficiencies at 75 deg C

At FL at UPF	: 98.86%
At 75% FL at UPF	: 99.01%
At 50% FL at UPF	: 99.09%
At FL at 0.8 UPF	: 98.58%
At 75% FL at 0.8 PF	: 98.77%
At 50% FL at 0.8 UPF	: 98.87%

Load at which maxm effy occurs	: 50% of rated KVA.
Maxm effy (%)	: 99.08
Regulation at Full Load at 75 deg C, at UPF	: 1.0
At 0.8PF	: 3.10

HV Turn Insulation	: Nomex.
LV Turn Insulation	: Nomex.
Core to Low Voltage Insulation	: Nomex Wrap & Air Duct.
High Voltage to Low Voltage Insulation	: Nomex wrap & Air duct.
Wt of assembled bushing	: 16 Kg (Approx.)
HV Bushing	: 4 Kg (Approx.)
LV Bushing	: 8 Kg (Approx.)
Neutral Bushing	: 4 Kg (Approx.)
Weight of Core in Kgs	: 800 Kg (Approx)
Weight of HV Winding	: 195 Kg (Approx.)
Weight of LV Winding	: 158 Kg (Approx.)
Approx Overall dimensions: Length (mm)	: 3673
Breadth (mm)	: 950
Height (mm)	: 1205

No of jacking lugs : 4

Inspection covers to be provided

All fittings shall conform to relevant BIS Standards.

Approx masses to be furnished.

Core (Kgs) before dispatch	: 800 Kgs.
Copper used in winding (Kgs)	: 290 Kgs.
Tank & Fittings & Accessories (Kgs)	: 1710 Kgs.
Total Masses	: 2800 Kgs

Connection drgs, dimensional drgs, operation maintenance manual & spare parts manual to be submitted with each transformer.

TRANSFORMER ENCLOSURE WILL BE MADE FREE ISSUE.