2 AM(Tech cell)

BHARAT COKING COAL LIMITED
(A Subsidiary of Coal India Limited)
Office of the Chief General Manager(MM)
Materials Management Department
Commercial Block L-III , Koyla Bhawan : Koyla Nagar
Dhanbad : 826005(Fax No- 0326-2230183)

SUPPLY ORDER NO. BCCL/PUR/211017/11-12/TRANSFORMER/12-13/ 52/256 **DATE- 21.01.2014**

BY REGD POST

To,
M/S Shree Nursingsahay Mudungopal Engineers Private Limited,
1B,Mahanadi Tower,Matamath,Cantonment Road,
CUTTACK -753001(ODISHA) (VENDOR CODE: 1/01/M/T/038)

SUB: SUPPLY OF POWER TRANSFORMERS

REF: i) our e tender no. BCCL/PUR/211017-019/11-12/TRANSFORMER/12-13/52 DATE-27-08-2012,Part-I opened on 12.10.12,Price bid(on line) opened on 20.08.13
ii)Your offer no.SNMG-CTC/BCCL/TRANSFORMER/12-13/54 Dated 09.10.2012.
iii) Our letter no. 2111017-19/ /TRANSFORMER/12-13/52/4411 dated 21.03.13 & 2642 dated 17/19.08.13
iv)Your letter no. SNM/BCCL/TRANSFORMER/13-14/08 Dated 06.04.2013 &no.179 Dated 13.01.2014
v)Letter no.SAI/SNM/BCCL/12-13/Authorisation/09 Dated 09.10.12 of M/S SAI Electricals,Meerut

Dear Sirs,

With reference to the above, we are pleased to place an order on you for **Supply of Power Transformers** at the rates and scope of supply as indicated under as per the technical specification specified in the Annexure-A &A-1 enclosed and as per the terms and conditions given hereunder alongwith general terms and conditions of NIT.

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SUPPLY ORDER NO. BCCL/PUR/211017/11-12/TRANSFORMER/12-13/ 52/256 DATE- 21.01.2014

NIT Sl. No.	MATERIAL CODE	ITEM DESCRIPTION	QTY	UNIT RATE(RS)	TOTAL VALUE(RS)
1	28311991253	TRANSFORMER 2MVA,11KV/3.3KV	01	8,00,000.00	8,00,000.00
2	28311991241	TRANSFORMER 3MVA,6.6KV/3.3KV	01	11,30,000.00	11,30,000.00
3	28311991265	TRANSFORMER 2MVA,11KV-6.6KV,3.3KV	02	8,75,000.00	17,50,000.00
5	28311991309	TRANSFORMER 300KVA,11KV,0.44KV	02	2,18,000.00	4,36,000.00
8	28311991277	TRANSFORMER 300KVA,3.3KV,0.44KV	01	2,13,000.00	2,13,000.00
		Manufactured by M/S Sai Electricals,Saidham,Victoria Park,Meerut-250001,UP.			43,29,000.00
		ED including cess @12.36%.			5,35,064.40
					48,64,064.40
		CST@2%			97,281.29
					49,61,345.69
		Freight charges as per clause no.1 below .			1,66,900.00
					51,28,245.69
		Pre dispatch inspection charges@1%			51,282.45
		Service tax on Pre dispatch inspection charges @12.36%			6,338.51
		TOTAL LANDED COST			51,85,866.65

DETAILED TECHNICAL SPECIFICATIONS AS PER ANNEXURE-A &A-1 ENCLOSED
(RUPEES FIFTY ONE LAKHS EIGHTY FIVE THOUSAND EIGHT HUNDRED SIXTY SIX AND PAISE SIXTY FIVE ONLY)

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1.PRICES: The above prices are on FOR destination basis inclusive of Packing& Forwarding and Insurance Charges. However,Freight charges shall be payable extra on the above basic price for FOR destination supply itemwise as under,the impact of which has been incorporated as above.

NIT Sl. N	Freight charges per ur
1	32,000.00
2	45,000.00
3	32,000.00
5	8,700.00
8	8,500.00

2.EXCISE DUTY ED including cess shall be payable extra at actual against documentary evidence as legally leviable with in the stipulated delivery period .You being registered with central excise you shall submit the excise invoice (indicating therein all excise registration details) at the time of supply of materials alongwith the supply documents enabling BCCL to avail input credit,if applicable, as per provisions of CENVAT.The present/offerred rate is @12.36%,the impact of which has been incorporated as above.

3.SALES TAX: CST shall be payable extra,as applicable at the time of delivery within the stipulated delivery period.The present/offered rate is @2% against form "C" ,the impact of which has been incorporated as above.

4.DELIVERY PERIOD: 50% of the order quantity shall be supplied within 4months from 10th day of issue of order and remaining 50% of order quantity shall be supplied within next two months thereafter.However, you may improve upon the delivery.

5.PAYMENT TERMS: 100% Payment shall be made within 21 days of receipt and acceptance of the materials or from the date of submission of the bill,whichever is later, against submission of Performance Bank Guaranty. Scanned copy of Your bank details/EFT mandate submitted by you alongwith your offer is enclosed for payment through EFT.

6.CONSIGNEE: Depot Officer,Central stores,Ekra,Dist;Dhanbad,Jharkhand. However,If need be BCCL area Regional store wise consignee shall be communicated to you subsequently.

7.ALLOCATION: Shall be provided by GM(E&M)I/C for internal circulation.

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8.**PAYING AUTHORITY:** GM(F)MM,BCCL, Koyla Bhawan,Dhanbad .

9.GURANTEE /WARRANTY: The supply shall be covered by the maker's standard guarantee as follows:

The supplier shall warrant that the equipment supplied under the contract / supply order
(a)is new, unused and of current design not likely to be discontinued or become obsolete till the life of the offered equipment.
(b) Is in accordance with the contract specifications.
(c) Shall have no defects arising out of design, materials or workmanship.
The supplier shall guarantee for the satisfactory performance of the complete equipment/ stores for a period of 12 months from the date of commissioning or 18 months from the date of receipt and acceptance of the materials, whichever is earlier.In the event of any defects in materials, design and workmanship during the aforesaid period is found due to faulty design or poor workmanship, the defective part or parts will be replaced by the supplier at site free of cost within 30 days of settlement of warranty claims.The supplier will be required to stock spare parts to take care of warranty failures. Spares should be available within 2 weeks of the breakdown being intimated to them.
The guarantee/composite warranty shall be submitted along with the bill. The warranty shall cover for the total equipment so that the necessity of having to approach different manufacturers of various components/assemblies does not arise and all services under warranty clause shall be the responsibility of the ultimate supplier of the composite equipment. You will also replace the defective parts, if any, during the warranty period free of cost. The responsibility to collect the defective / rejected material will lie with the supplier and the cost for such collection will have to be borne by the supplier.

10.SECURITY DEPOSIT: You shall deposit as security money 10% of the value of the contract ie for **Rs 5,18,587.00**(Rupees Five Lakhs Eighteen Thousand Five hundred and eighty seven only) in the form of Bank Draft /Bank Guarantee within 15 days from the date of order.The validity of B.G. will be for a period of three months beyond the expiry of delivery period. If the contractor fails to deposit the security deposit within 15(fifteen) days from the date of order, the same shall be recorded as unsatisfactory performance for future dealings apart from taking any other penal action as may be deemed fit by BCCL . For successful contractor,the Security Money shall be Refunded within 30 days of satisfactory execution of contract. For unsatisfactory execution of contract and/or failure of execution of contract, the security money shall be forfeited.The Security money may be converted into PBG.Your EMD furnished alongwith the tender shall be returned on submission of Security deposit duly confirmed.The BG format for security deposit shall be as was provided alongwith the NIT.

11.PERFORMANCE BANK GUARANTEE (PBG)- PBG on schedule/Nationalized Bank in India valid for three months beyond the expiry of Guarantee/Warranty period of the contract(ie valid for 21 months from the date of receipt and acceptance of materials at destination site) for 10% value of the

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contract ie **for Rs 5,18,587.00**(Rupees Five Lakhs Eighteen Thousand Five hundred and eighty seven only) shall have to be submitted to MM Division, BCCL, Koyla Bhawan on or before commencement of supply/ installation/commissioning. The format for PBG shall be as was provided alongwith the NIT.

The original Bank Guarantee should be sent to the beneficiary directly by the issuing bank under registered post with A.D

12.Inspection and Tests:

i)The purchaser or its authorised representative shall have the right to inspect and/or to test the goods to confirm their conformity to the contract. The purchaser shall notify the supplier in writing of the identity of any representative retained for these purposes.

ii) The inspections and tests may be conducted on the premises of the supplier or its sub-contractors), at point of delivery and/or at the goods final destination when conducted on the premises of the supplier or its subcontractor(s), all reasonable facilities and assistance, including access to drawings and production date, shall be furnished to the inspectors at no charge to the purchaser.

iii) Should any inspected or tested Goods fail to conform to the specifications, the purchaser may reject them and the supplier shall either replace the rejected goods or make all alternatives necessary to meet specification requirements free of cost to the Purchaser.

iv) The Purchaser's right to inspect, test and, where necessary, reject the goods after the Goods arrival in the Purchaser's country shall in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representatives prior to the Goods shipment from the country of origin.

v)Materials are subject to inspection by the purchaser before dispatch.The materials may also be subject to stage inspection by a third party nominated by BCCL for the purpose. Final inspection shall, however, be carried out at the consignee's end.

v)Materials are subject to inspection by the purchaser before dispatch.The materials may also be subject to stage inspection by a third party nominated by BCCL for the purpose. Final inspection shall, however, be carried out at the consignee's end.

vi)Nothing in these documents shall in any way release the supplier from any warranty or other obligations under this contract.

vii)The purchaser shall, at its discretion, have the right to test the ordered material in a Government Test House or in a test house nominated by the purchaser. In case of failure of the material after testing, the cost of tests as well as of the material shall have to be borne by the supplier.

Final Inspection at destination site shall be arranged by the consignee within one week from the date of receipt of the material.Supplier's technical representative must be available at the time of inspection.

12A.PRE-DISPATCH INSPECTION:Pre-dispatch inspection of each consignment shall be carried out by M/s. Central Mine Planning & Design Institute Ltd(CMPDIL), Ranchi/their Regional Office as per the terms and conditions indicated hereunder:

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Pre-dispatch inspection shall be carried out by M/s.CMPDIL(the above firm) as per their methodology. The third Party Inspection shall include examination of raw material, test certificate verification, continuous monitoring of quality assurance by manufacturer which will include regular and surprise visits. In brief, the scope and condition of inspection by M/s.CMPDIL will be as follows :

Checking and approval of test procedures/quality assurance plans.

Verification of records and documents of your works.

Verification of documents and test certificate of bought out items and cross checks.

You shall provide facilities for carrying out all necessary tests as required in the specification at your works else these will be carried out at an independent test house at your cost.

Final testing and checking of materials as per specifications.

M/s.CMPDIL will have full and free access to the premises of manufacturer during the process of manufacturing and during inspection activities.

Inspection fee @ 1% of total consignment billing (plus statutory levis like service tax @12.36% etc,as aplicable on inspection fee) is to be paid to M/s.CMPDIL along with inspection call letter payable by DD which will be reimbursed subsequently by BCCL together with consignment billing.

Minimum 7 calendar days notice shall be given by the manufacturer to M/s.CMPDIL for arranging inspection within valid delivery period as per contract.

The ultimate responsibility for supply of correct materials as per requirement of relevant specification lies solely with the manufacturer inspite of clearance/acceptance by inspection authority i.e. M/s.CMPDIL. The manufacturer will be required to replace the material free of cost if found defective/unserviceable/not according to relevant specifications.

The charges for third party inspection and the cost of materials that would be required for destructive tests, if any, shall be reimbursed by BCCL together with the consignment billing. Such cost shall be reimbursed only if it is duly certified by M/s.CMPDIL.

Inspection call to M/s.CMPDIL, Ranchi/ their Regional. Office must be given.

Final inspection shall be arranged by the consignee after receipt of the material at our destination.

The purchaser shall, at its discretion, have the right to test the ordered material in a Government Test House or in a test house nominated by the purchaser. In case or failure of the material after testing the cost of tests as well as of the material shall have to be borne by the supplier.

13.TRANSIT INSURANCE: Shall be arranged and covered by you for safe arrival of the materials to the consignee end at your cost and risk.

14.PENALTY FOR FAILURE TO SUPPLY IN TIME: Liquidated Damage(LD) Clause/Risk Purchase clause: The delivery of stores stipulated in Purchase order shall be deemed to be of the essence of the contract and delivery of the stores must be completed by the date specified. No materials should be supplied beyond the specified delivery period, unless specific approval has been obtained from the purchaser.

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In the event of failure to deliver the stores within the stipulated date/ period in accordance with the samples and/or specification mentioned is the supply order, and in the event of breach of any terms and conditions mentioned in the supply order. Bharat Coking Coal Limited reserves the right:

a) To recover from successful tenderer, as agreed liquidated damages,a sum not less than 0.5% (half percentage) of the price of the stores which successful tenderer has not been able to supply (for this purpose part of a unit supplied will not be considered) as aforesaid for each week or part of a week during which the delivery of such stores may be in arrears limited to 10%. Where felt necessary the limit of 10% can be increased to 15% at the discretion of Head of the Materials Management Division .

b) To purchase elsewhere, after due notice to the successful tenderer on the account and at the risk of the defaulting supplier the stores not supplied or others of a similar description without cancelling the supply order in respect of consignment not yet due for supply or

c) To cancel the supply order or a portion thereof, and if so desired to purchase the store at the risk and cost of the defaulting supplier and also

d) To extend the period of delivery with or without penalty as may be considered fit and proper. The penalty, if imposed shall not be more than the agreed liquidated damages referred to in clause (a) above.

e) To encash any Bank guarantee which is available for recovery of the penalty or

f) To forfeit the security deposit full or in part.

g) Whenever under the contract a sum of money is recoverable from and payable by the supplier, BCCL shall be entitled to recover such sum by appropriating,in part or whole by deducting any sum or which at any time thereafter may be due to the successful tenderer in this or any other contract with Bharat Coking Coal Ltd. or any subsidiary of Coal India Ltd. Should this sum be not sufficient to cover the full amount recoverable, the successful tenderer shall pay BCCL on demand the remaining amount. The supplier shall not be entitled to any gain under this clause.

15.PRICE FALL CLAUSE:

i)The prices charged for the stores supplied under the contract by the supplier shall in no event exceed the lowest price at which the supplier offer to sell the stores of identical description to any other organization from date of offer till completion of supply under the contract.

ii) If at any time during the said period the supplier offers lower sale price of such stores to any other organization at a price lower than the price chargeable under this contract, the supplier shall forthwith notify such reduction or sale to the consignee concerned under intimation to GM(MM),Bharat Coking Coal Limited , Commercial Block , Level –III , Koyla Bhawan , Koyla Nagar , Dhanbad and the price payable under the contract for the stores supplied after the date of coming into force of such reduction or sale, shall stand correspondingly reduced. The above stipulated will not, however apply to exports by the supplier.

A certificate to this effect shall be submitted by you alongwith the supply bill.

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16.SUBMISSION OF BILL: Pre–receipted stamped original bill for 100% value in four copies along with delivery challan in original,Guarantee/ Warranty certificate, and other relevant documents as indicated elsewhere in the order should be submitted to the Paying Authority through Consignee only.

17.PACKING: Consignment shall be supplied in suitable standard proper packing.

18.FORCE MAJEURE CLAUSE: If the execution of the supply order is delayed beyond the period stipulated in the supply order as a result of out-break of hostilities, declaration of an embargo / curfew or blockade or fire, flood, acts of nature or any other contingency beyond the supplier's control due to act of God then BCCL may allow such additional time by extending the delivery period, as it considers to be justified by the circumstances of the case and its decision shall be final.

19.ISSUE OF ROAD PERMIT: Road Permit if required may be obtained directly from the Consignee under intimation to this office.

20.DOCUMENTS: Following Documents will have to be submitted at the time of supply :

1)The manufacturer shall carry out all routine standard tests in accordance with IS;2026 on each transformer and a copy to be submitted.
2)Operation & maintenance manual
3)Manufacturer test certificate

This contract is concluded with the issuance of this order.Two copies of the order are being sent to you.You are advised to acknowledge the receipt and acceptance of the order by returning one copy duly signed and stamped to this office within 10days,failing which this order shall be deemed to have been accepted by you for execution.

Yours faithfully,

Nadeem 21/01/2014
(Nadeem Khan)
MT(MM)

21/01/14
(C R Samantray)
Chief Manager(MM)
For & on behalf of Bharat Coking Coal Ltd.

INDENT AND BUDGET REFERENCE:

Indent reference	Budget Certification no. & dt., & FC No.& dt.
No. BCCL/CGM(E&M)/F-Central Indent(Elect)/2010-11/022(i) dated 21.01.11, 022(ii) dated 21.01.11&022(ii) dated 21.01.11 under covering Notesheet vide no. BCCL/CGM(E&M)/F.C.INDENT/09-10/187/N dated 31.08.2009 registered vide MMD regn no. 211017 to 019/11-12 dtd 15.04.11,approved by CMD,BCCL	BC NO.BCCL/C&B/CAP/Reg PN.34/SN.274/ebc no.510 Dated 06.01.2014 For Value: Rs 97,01,136.51,given by Chief Manager(F)Cost & Budget Dept,BCCL FC given by CM(F)OP vide e-FC No.179 dated 17.01.2014 for Rs 97,01,136.51

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Enclosure:1.Annexure-A- Detailed technical specifications and Technical Data sheet.

2.Annexure-A-I -Technical particulars (General & Special)-containing ten pages

3.Photocopy of Your bank details/EFT mandate

COPY: **M/S Sai Electricals,Saidham,Victoria Park,Meerut-250001,UP.**

COPY:1.GM(E&M), Koyla Bhawan- may like to provide the distribution of the above order qty area wise based on the requirement,so that Regional stores area wise consignee shall be communicated to the firms, if need be.

2. GM(F),MM , Koyla Bhawan.

3.Chief manager(F)C&B, BCCL HQ, Dhanbad.

4. Depot Officer,Central Stores,BCCL,EKRA,Dist:Dhanbad, Jharkhand,India .

5. CGM(E&M),CMPDIL,Gondwana Place,Kanke Road,Ranchi

6.MM(Tech Cell), MM Div, Koyla Bhawan.

7.IEM: Justice Ashok Kumar Chakraborty (Retd),BB-69, Sector I Salt Lake, Kolkata – 700 064

8.GM(MM)CIL/CCL/SECL/ECL/NCL/WCL/MCL/NECL

9.MF/Office Copy

Noted 21/01/2014

MT(MM)

21/01/14

Chief Manager(MM)

Annexure-A (FIVE PAGES)

TECHNICAL SPECIFICATIONS OF POWER TRANSFORMER

NIT SL NO	MATERIAL DESRIPTION/RATED CAPACITY
1	Transformer 2MVA,Primary Voltage-11KV,Secondary Voltage-3.3KV
2	Transformer 3MVA,Primary Voltage-6.6KV,Secondary Voltage-3.3KV
3	Transformer 2MVA,Primary Voltage-11KV-6.6KV,Secondary Voltage-3.3KV
5	Transformer 300KVA,Primary Voltage-11KV,Secondary Voltage-0.44KV
8	Transformer 300KVA,Primary Voltage-3.3KV,Secondary Voltage-0.44KV

This specification broadly covers design , manufacture , supply and other requirements of power transformers to be used for power supply to coal mines .This shall meet all the technical requirements of IS 2026 & other relevant standards .

The transformer shall be of proven design for giving satisfactory and reliable performance in heavily coal dust laden atmosphere unit ambient temperature of 45°C and other service condition prevalent in coalfield areas of BCCL.

The power transformer shall be of indoor type , vector group DY11 , naturally oil cooled , copper wound of suitable class of insulation and shall be suitable for 3 phase , 50 HZ , ac power supply system .Continuous operated at rated KVA within ± 10% variation of voltage .Temp. rise limited to the following values :

Cooling	Oil	Winding
ONAN	45°C	55°C

Mechanical features

a) The transformer shall withstand the electro-dynamic stress due to thermal short circuit of the LV side assuming the HV side fed from an infinite bus . All leads and windings in cores shall be properly supported , clamped and tightened after vacuum drying to ensure the short circuit withstand ratings . The short circuit withstand duration shall be minimum 2 sec.

b) The Transformer shall be so designed as to minimize any undue noise and vibration .

Constructional details

Core

a) The transformer core shall be made of high grade non- ageing grain oriented cold rolled steel sheets of low hysterisis loss and high permeability . The core structure shall be securely grounded to prevent electrostatic potential . Lifting eyes and lugs shall be provided on the limbs and coils assembly . Preferably no bolt shall be used in the cores . Clamping shall be done externally to the limb.

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b) The design of the magnetic circuit shall be such as to avoid static discharges , development of short circuit paths within itself or to the earthed clamping structure and the production of flux component at right angles to plane of lamination which may cause local heating .

c) Core and windings shall be capable of withstanding shocks during transport , installation & service and adequate provision shall be made to prevent movement of core & winding relative to tank during these conditions.

d) All steel sections used for supporting the core shall be thoroughly sand blasted after cutting , drilling and welding .

Tanks

a) Tanks shall be of welded construction and fabricated from boiler steel plates of adequate thickness . The weld procedure and performance shall be in line with ASME BPV –IX.

b) All seams and joints those are not required to be opened at site shall be factory welded and wherever possible shall be double welded.

c)Tanks stiffness shall be provided for general rigidity and these shall be designed to prevent retention of water.

d)The tanks shall be designed to withstand – Mechanical shocks during transportation , Vacuum filling of oil & short circuit force

e)Adequate space shall be provided at the bottom of the tank for settlement of sediments .

f)Suitable guides shall be provided in the tank for positioning the core & coil assembly.

g)The tanks shall be suitable for movement in both direction during shipment & each tanks shall be provided with Lifting lugs suitable for lifting the complete transformer and a minimum of four jacking pads.

Tank cover

a) The tank cover shall be sloped to prevent retention of rain water and shall not distort when lifted.

b) At least two adequately sized inspection covers one at each end of the tank shall be provided for easy access to bushing and earth connection. The inspection covers shall have suitable lifting arrangement.

c) The tank covers shall be fitted with thermometer pockets. The thermometer pocket shall be fitted with a captive screwed top to prevent ingress of water.

Mounting arrangement

The transformers shall be provided with two nos. bi- directional skids and pulling eyes integral with tank body for fixing the transformer tank on foundation.

Conservator tank

a) The conservator tank shall have adequate capacity to accommodate oil preservation system and volumetric expansion of the total cold oil volumetric expansion of the total cold oil volume in transformer and radiators for a change in temperature from minimum ambient air temperature of 5°C to 110°C.

b) The conservator shall be bolted into position so that it can be removed for cleaning purpose.

c) The conservator tank , shall be fitted with a silica gel filter breather.

d) The conservator of all transformers below 1000 KVA shall be fitted with plain oil level gauge with two independent low level electrically insulated alarm contacts . The oil level at 30°C shall be marked on the gauge.

The conservator of all transformer of 1000 KVA and above shall be provided with magnetic oil level gauge with two independent low level electrically insulated alarm and trip contacts . The oil level at 30°C shall be marked on the gauge.

Explosion vent

a) The transformers shall be provided with the single diaphragm type of explosion vent with air release device .

b) An equalizer pipe shall be connected to explosion vent from the conservator.

Buchholtz Relay

A double float type buchholtz relay confirming to IS 3637 shall be provided . All gas evolved in the transformer shall be collected in this relay . The relay shall be provided with a test coke suitable for a flexible pipe connection for checking its operation . A copper tube shall be connected from the gas collector to a valve located about 1200 mm above ground level to facilitate sampling with the transformer in the service . The device shall be provided with two potential free contacts , one for alarm on gas accumulation and the other for tripping on rise of pressure.

Temperature indicator

a) Oil temperature indicator (OTI)

The transformers shall be provided with a 150 mm dial type thermometer for top oil temperature indication. The thermometer shall have adjustable, potential free alarm and trip contacts, maximum reading pointer and resetting device and shall be mounted in the marshalling box (1000 KVA and above) or on tank cover (below 1000 KVA). A temperature sensing element located in a pocket in the top oil shall be furnished. This shall be connected to the OTI by means of capacity tubing. Accuracy class of OTI shall be 2° C or better. The OTI shall have full scale deflection of at least 240° C and shall have linear graduation to read every 2° C.

b) Winding temperature indicator (WTI)

A device for measuring the hot spot temperature of the winding shall be provided on all transformer 1000 KVA and above. Accuracy class of WTI shall be ± 2° C or better. It shall comprise the following :

- Temperature sensing element
- Image coil and bushing CT
- Auxiliary CT, if required to match the image coil
- 150 mm local indicating instrument with max. reading pointer mounted in marshalling box. It shall have two adjustable potential free contacts, one for winding temp. high alarm and one for trip, in addition to the contacts required for control of cooling equipment.
- Automatic temperature compensation
- All contacts shall be adjustable on a scale and suitable for connection in 240V circuit. These shall be accessible on removal of the cover.

  The WTI shall have a full scale deflection of at least 240° C and shall have linear graduation to read every 2° C.

Winding

- The conductors shall be of electrolytic grade copper free from scales & burns.
- All winding shall be fully insulated .

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- Coil assembly and insulation spacers shall be so arranged as to ensure free circulation of oil and to reduce the hot spot of winding.
- All bus bars and leads shall be adequately supported in insulated cleats or frames shall be effectively locked.

Insulation materials

- Class "A" insulating materials specified in IS 1271 or latest version shall be used . Wood insulation , where used , shall be well seasoned and treated .
- **Insulating oil :** The new insulating oil shall confirm to IS 335 . No inhibitors shall be used in the oil.

The manufacturer shall dispatch the transformer filled with oil . Ten percent extra oil shall be supplied for topping up , in non returnable sealed containers suitable for outdoor storage.

Earthing Terminals

Two earthing terminals suitable for connecting 50 x 8 mm mild steel flat shall be provided at position close to the two diagonally opposite bottom corners of tank . These grounding terminals suitable for bolted connection . Two earthing terminals shall also be provided on marshalling box and any other equipment mounted separately

Cable boxes and disconnecting chambers

Cable boxes of suitable sizes shall be provided to accommodate cable termination . Cable boxes shall have terminals connectors of adequate size and bolt holes to receive cable lugs . Cable boxes shall have degree of protection IP-52 as per IS : 2147.Disconnecting chamber will be as per standard norms & practice.

Off circuit Tap change switch

The tap change switch shall be three phase , hand operated , for simultaneous switching of similar taps on the three phases by operating an extra handle .Arrangement shall be made for securing and pad locking the tap chamber in each of the working position . An indicating device shall be provided to show tap in use.

Radiators : The radiators shall be detachable type , mounted on the tank . Each radiator shall be provided with the following :

a) A drain valve at the bottom
b) An air release plug at the top
c) Shut off valve

Marshalling box : A sheet steel weather, vermin and dust proof marshalling box shall be provided with each transformer of 1000 KVA and above to accommodate

- Temperature indicators
- Terminal blocks for incoming & outgoing cables

The marshalling box shall be supplied with space heater and cubical lighting with ON/OFF switches and associated fuses.

Fittings : The following fittings shall be provided with all the transformers :

1. Rating and diagram plate
2. Terminal marking plate
3. Two earthing terminals
4. Lifting lugs
5. Jacking lugs

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6. Drain valve with plug of 50mm size
7. Dehydrating breather
8. Buchholtz relay with alarm and trip contacts with one shut off valve on 50mm conservator side
9. Plain oil level indicator
10. Magnetic oil level indicator for 1000 KVA and above
11. Off load tap changing switch
12. Oil filling hole with cover
13. Conservator
14. OTI
15 WTI for 1000 KVA and above
16. Explosion vent with air release device
17. Skids and pulling eyes on both sides
18. Rollers
19. Filter valve
20. Inspection cover

TESTS

The manufacturer shall carry out all routine standard tests in accordance with IS : 2026 on each transformer . The manufacturer shall submit copies of type test in accordance with IS :2026 at CPRI for similar or above than similar rating during last 5 years .

TECHNICAL DATA SHEET OF TRANSFORMERS
FROM 50 KVA TO 3000 KVA

1. Rated capacity /quantity :-as indicated above
2. No. of phases : 3
3. Frequency : 50 HZ +3%,- 5%
4. Location : Indoor
5. Type of cooling : ONAN
6. Type of oil : Mineral oil
7. Impedance voltage at rated current : 5%± 10% up to 500 KVA
   6.5%± 10% from750 to 1500 KVA
   7% to ± 10% from2000 to 2500 KVA
8. Tap changer type : Off circuit
9. Tapping : ±2.5%,±5%,±7.5%,0
10. Temp. rise (over ambient) in oil : 45°C
11. Temp. rise (over ambient) in Winding : 55°C
12. Earthing of neutral terminals : Required for LV winding
13. Method of system earthing : Star – solid (LV winding)

Following documets have to be submitted at the time of supply;-
1)The manufacturer shall carry out all routine standard tests in accordance with IS;2026 on each transformer.
2)Operation & maintenance manual
3)Manufacturer test certificate

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21/01/24

ANNEXURE-A-1(TEN PAGES)

TECHNICAL PARTICULARS (GENERAL & SPECIAL)

Technical Particulars of Transformer 2MVA, 11-3.3KV

NIT SL-1 Page No. 1/10

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
A)	GENERAL	
	a) Name of manufacturer :	SAI ELECTRICALS MEEERUT
	b) Service	Indoor
	c) Rating	
	Rated KVA : KVA	2000
	Rated voltage of HV : KV	11
	Rated voltage of LV : KV	3.3
	Temperature rise in oil : °C	45 Deg C
	Temperature rise in winding : °C	55 Deg C
	Rated frequency :	50Hz
	d) Number of phases :	3Nos.
	e) Connection	
	HV	Delta
	LV	Star
	Vector group	Dyn11
	f) Tapping :	+7.5% to -7.5% @2.5%
	h) No load loss at rated voltage & frequency : KW (IS Tol. App.)	2600W
	i) Load loss at rated current at 75°C: KW (IS Tol. App.)	24500W
	j) Impedance at rated current & frequency at 75°C : Percent	7% +/- IS Tolerance.
	k) Reactance at rated current & frequency : Percent	6.89%
	l) Efficiency at 75°C at unity p.f. :	
	At full load : Percent	98.66%
	At 3/4 full load : Percent	98.92%
	At 1/2 full load : Percent	99.14%
	m) Regulation at full load at 75°C	
	At unity p.f. : Percent	1.46%
	n) No load current at rated voltage & frequency : Percent	3% of Full load Current
	o) Approximate weights :	
	Core & winding : kg	1975Kg Approx.
	Tank & fitting : kg	1200Kg Approx.
	Oil : kg	710Kg Approx.
	Total weight : kg	3885Kg Approx.
	p) Approx quantity of oil : Ltr.	875 Ltr. Approx.
	q) Approx overall dimensions :	
	Length : mm	2320 mm +/- 15%
	Breadth : mm	2590 mm +/- 15%
	Height : mm	2270 mm +/- 15%
	r) Terminal arrangement :	
	HV	Cable Box
	LV	Cable Box
	Height : mm	2270 mm +/- 15%
	s) Reference standard ;	IS 2026

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Contd. Annex-A-1 2/2

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
B)	SPECIAL	
	1) Approximate maximum flux density at rated voltage & frequency: CGS. Line/cm²	1.7 Tesla
	2) Efficiency at 75°C at 0.8 p.f. lagging	
	At full load : Percent	98.33%
	At 3/4 full load : Percent	98.65%
	At 1/2 full load : Percent	98.92%
	3) Load at which maximum. Efficiency occurs : Percent full load	32.40%
	4) Maximum efficiency : Percent	99.21%
	5) Impulse level	As per IS 2026
	HV	
	LV	
	6) No load loss at 110% rated voltage & frequency : KW	As mentioned above
	7) No load current at 110% rated voltage & frequency : Percent	As mentioned Above
	8) Type of winding :	
	HV	Cross Over
	LV	Spiral
	9) Insulating materials :	
	Turn insulation HV	Press Board & Kraft Paper
	Turn insulation LV	
	Insulation core to LV	
	Insulation HV to LV	
	10) Clearances :	As per Specs./ IS 2026
	Minimum clearance between phases	
	a) In oil : mm	
	b) Out of oil : mm	
	Minimum clearance HV to earth in oil : mm	
	Minimum clearance – HV to tank in oil : mm	
	11) Details of tank :	
	Approx. thickness of sides	5.00mm
	do - Bottom : mm	6.00mm
	do- cover : mm	6.00mm
	do- tube radiators : mm	1.0mm
	12) Minimum clearance height for : mm	2500mm Approx.
	lifting core and windings from tank	
	13) Shipping details :	
	Parts detached for transport	NA
	Approx. wt. of heaviest package	3950Kg Approx.
	Approx. dimension of largest package(L x B x H) : mm	2380 x 2650 x 2320mm +15%
(C)	OFF-LOAD TAP CHANGER	
	· Make and type	Std. Make
	· Rated voltage and current	As above
	· Step voltage & no. of steps	As above
	· Locking arrangement	Provided
	· Position indication & Line drop compensation	Provided

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Technical Particulars of Transformer 3MVA, 6.6-3.3KV

NIT SL. 2.

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	(BIDDER TO INDICATE
A)	GENERAL	
	a) Name of manufacturer :	SAI ELECTRICALS MEEERUT
	b) Service	Indoor
	c) Rating	
	Rated KVA :KVA	3000
	Rated voltage of HV : KV	6.6
	Rated voltage of LV : KV	3.3
	Temperature rise in oil : °C	45 Deg C
	Temperature rise in winding : °C	55 Deg C
	Rated frequency :	50Hz
	d) Number of phases :	3Nos.
	e) Connection	
	HV	Delta
	LV	Star
	Vector group	Dyn11
	f) Tapping :	+7.5% to -7.5% @2.5%
	h) No load loss at rated voltage & frequency : KW (IS Tol. App.)	3600W
	i) Load loss at rated current at 75°C: KW (IS Tol. App.)	32200W
	j) Impedance at rated current & frequency at 75°C : Percent	7% +/- IS Tolerance.
	k) Reactance at rated current & frequency : Percent	6.92%
	l) Efficiency at 75°C at unity p.f. :	
	At full load : Percent	98.82%
	At 3/4 full load : Percent	99.04%
	At 1/2 full load : Percent	99.23%
	m) Regulation at full load at 75°C	
	At unity p.f. : Percent	1.31%
	n) No load current at rated voltage & frequency : Percent	3% of Full load Current
	o) Approximate weights :	
	Core & winding : kg	2700 Kg Approx.
	Tank & fitting : kg	1850Kg Approx.
	Oil : kg	925Kg Approx.
	Total weight : kg	5475Kg Approx.
	p) Approx quantity of oil : Ltr.	1140Ltr. Approx.
	q)Approx overall dimensions :	
	Length : mm	3950mm +/- 15%
	Breadth : mm	2500mm +/-15%
	Height : mm	2245mm +/-15%
	r) Terminal arrangement :	
	HV	Cable Box
	LV	Cable Box
	s) Reference standard ;	IS 2026

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Contd P/4

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
B)	SPECIAL	
	1) Approximate maximum flux density at rated voltage & frequency: CGS. Line/cm^2	1.7 Tesla
	2) Efficiency at 75°C at 0.8 p.f. lagging	98.53%
	At full load : Percent	98.81%
	At 3/4 full load : Percent	99.04%
	At 1/2 full load : Percent	33.41%
	3) Load at which maximum. Efficiency occurs : Percent full load	99.29%
	4) Maximum efficiency : Percent	
	5) Impulse level	As per IS 2026
	HV	
	LV	As mentioned above
	6) No load loss at 110% rated voltage & frequency : KW	As mentioned Above
	7) No load current at 110% rated voltage & frequency : Percent	
	8) Type of winding :	Cross Over
	HV	Spiral
	LV	
	9) Insulating materials :	
	Turn insulation HV	Press Board & Kraft Paper
	Turn insulation LV	
	Insulation core to LV	
	Insulation HV to LV	
	10) Clearances :	
	Minimum clearance between phases	
	a) In oil : mm	As per Specs./ IS 2026
	b) Out of oil : mm	
	Minimum clearance HV to earth in oil : mm	
	Minimum clearance – HV to tank in oil : mm	
	11) Details of tank :	6.00mm
	Approx. thickness of sides	8.00mm
	do - Bottom : mm	8.00mm
	do- cover : mm	1.0mm
	do- tube radiators : mm	2700mm Approx.
	12) Minimum clearance height for lifting core and windings from tank : mm	
	13) Shipping details :	NA
	Parts detached for transport	5525Kg Approx.
	Approx. wt. of heaviest package	4025 x 2550 x 2300 mm +15%
	Approx. dimension of largest package(L x B x H) : mm	
(C)	OFF-LOAD TAP CHANGER	Std. Make
	. Make and type	As above
	. Rated voltage and current	As above
	. Step voltage & no. of steps	Provided
	. Locking arrangement	Provided
	. Position indication & Line drop compensation	

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Contd P/5

Technical Particulars of Transformer 2MVA, 11-6.6-3.3KV

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
A)	**GENERAL**	
	a) Name of manufacturer :	SAI ELECTRICALS MEEERUT
	b) Service	Indoor
	c) Rating	
	Rated KVA :KVA	2000
	Rated voltage of HV : KV	11/6.6
	Rated voltage of LV : KV	3.3
	Temperature rise in oil : °C	45 Deg C
	Temperature rise in winding : °C	55 Deg C
	Rated frequency :	50Hz
	d) Number of phases :	3Nos.
	e) Connection	
	HV	Delta
	LV	Star
	Vector group	Dyn11
	f) Tapping :	+7.5% to -7.5% @2.5%
	h) No load loss at rated voltage & frequency : KW (IS Tol. App.)	2750W
	i) Load loss at rated current at 75°C: KW (IS Tol. App.)	25750W
	j) Impedance at rated current & frequency at 75°C : Percent	7% +/- IS Tolerance.
	k) Reactance at rated current & frequency : Percent	6.89%
	l) Efficiency at 75°C at unity p.f. :	
	At full load : Percent	98.60%
	At 3/4 full load : Percent	98.86%
	At 1/2 full load : Percent	99.09%
	m) Regulation at full load at 75°C	
	At unity p.f. : Percent	1.52%
	n) No load current at rated voltage & frequency : Percent	3% of Full load Current
	o) Approximate weights :	
	Core & winding : kg	1975Kg Approx.
	Tank & fitting : kg	1200Kg Approx.
	Oil : kg	710Kg Approx.
	Total weight : kg	3885Kg Approx.
	p) Approx quantity of oil : Ltr.	875 Ltr. Approx.
	q) Approx overall dimensions :	
	Length : mm	2320 mm +/- 15%
	Breadth : mm	2590 mm +/- 15%
	Height : mm	2270 mm +/- 15%
	r) Terminal arrangement :	
	HV	Cable Box
	LV	Cable Box
	s) Reference standard ;	IS 2026

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Contd P/6

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
B)	**SPECIAL**	
	1) Approximate maximum flux density at rated voltage & frequency: CGS. Line/cm²	1.7 Tesla
	2) Efficiency at 75°C at 0.8 p.f. lagging	
	At full load : Percent	98.25%
	At 3/4 full load : Percent	98.58%
	At 1/2 full load : Percent	98.86%
	3) Load at which maximum. Efficiency occurs : Percent full load	32.40%
	4) Maximum efficiency : Percent	99.21%
	5) Impulse level	As per IS 2026
	HV	
	LV	
	6) No load loss at 110% rated voltage & frequency : KW	As mentioned above
	7) No load current at 110% rated voltage & frequency : Percent	As mentioned Above
	8) Type of winding :	
	HV	Cross Over
	LV	Spiral
	9) Insulating materials :	
	Turn insulation HV	Press Board & Kraft Paper
	Turn insulation LV	
	Insulation core to LV	
	Insulation HV to LV	
	10) Clearances :	
	Minimum clearance between phases	As per Specs./ IS 2026
	a) In oil : mm	
	b) Out of oil : mm	
	Minimum clearance HV to earth in oil : mm	
	Minimum clearance – HV to tank in oil : mm	
	11) Details of tank :	
	Approx. thickness of sides	5.00mm
	do - Bottom : mm	6.00mm
	do- cover : mm	6.00mm
	do- tube radiators : mm	1.0mm
	12) Minimum clearance height for : mm	2500mm Approx.
	lifting core and windings from tank	
	13) Shipping details :	
	Parts detached for transport	NA
	Approx. wt. of heaviest package	3950Kg Approx.
	Approx. dimension of largest package(Lx B x H) : mm	2380 x 2650 x 2320mm ±15%
(C)	**OFF-LOAD TAP CHANGER**	
	· Make and type	Std. Make
	· Rated voltage and current	As above
	· Step voltage & no. of steps	As above
	· Locking arrangement	Provided
	· Position indication & Line drop compensation	Provided

Nadeem 21/2/2019

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Contd P/7

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Technical Particulars of Transformer 300KVA, 11-0.440KV

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
A)	**GENERAL**	
	a) Name of manufacturer :	SAI ELECTRICALS MEEERUT
	b) Service	Indoor
	c) Rating	
	Rated KVA :KVA	300
	Rated voltage of HV : KV	11
	Rated voltage of LV : KV	0.440
	Temperature rise in oil :°C	45 Deg C
	Temperature rise in winding :°C	55 Deg C
	Rated frequency :	50Hz
	d) Number of phases :	3Nos.
	e) Connection	
	HV	Delta
	LV	Star
	Vector group	Dyn11
	f) Tapping :	+7.5% to -7.5% @2.5%
	h) No load loss at rated voltage & frequency : KW (IS Tol. App.)	750W
	i) Load loss at rated current at 75°C: KW (IS Tol. App.)	5500W
	j) Impedance at rated current & frequency at 75°C : Percent	5% +/- IS Tolerance.
	k) Reactance at rated current & frequency : Percent	4.64%
	l) Efficiency at 75°C at unity p.f. :	
	At full load : Percent	97.94%
	At 3/4 full load : Percent	98.31%
	At 1/2 full load : Percent	98.60%
	m) Regulation at full load at 75°C	
	At unity p.f. : Percent	1.94%
	n) No load current at rated voltage & frequency : Percent	3% of Full load Current
	o) Approximate weights :	
	Core & winding : kg	525Kg Approx.
	Tank & fitting : kg	340Kg Approx.
	Oil : kg	200Kg Approx.
	Total weight : kg	1065Kg Approx.
	p) Approx quantity of oil : Ltr.	245Ltr. Approx.
	q) Approx overall dimensions :	
	Length : mm	1535mm +/-15%
	Breadth : mm	1785mm +/-15%
	Height : mm	1550mm +/-15%
	r) Terminal arrangement :	
	HV	Cable Box
	LV	Cable Box
	s) Reference standard ;	IS 2026

Nadeem 24/01/2024

SHREE NURSINGHSAHAY MUDUNGOPAL ENGINEERS PVT. LTD. CANTONMENT ROAD CUTTACK

24/01/24

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Contd. P/8

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
B)	**SPECIAL**	
	1) Approximate maximum flux density at rated voltage & frequency: CGS. Line/cm²	1.7 Tesla
	2) Efficiency at 75°C at 0.8 p.f. lagging	
	At full load : Percent	97.46%
	At 3/4 full load : Percent	97.91%
	At 1/2 full load : Percent	98.26%
	3) Load at which maximum. Efficiency occurs : Percent full load	36.90%
	4) Maximum efficiency : Percent	98.67%
	5) Impulse level	As per IS 2026
	HV	
	LV	
	6) No load loss at 110% rated voltage & frequency : KW	As mentioned above
	7) No load current at 110% rated voltage & frequency : Percent	As mentioned Above
	8) Type of winding :	
	HV	Cross Over
	LV	Spiral
	9) Insulating materials :	Press Board & Kraft Paper
	Turn insulation HV	
	Turn insulation LV	
	Insulation core to LV	
	Insulation HV to LV	
	10) Clearances :	As per Specs./ IS 2026
	Minimum clearance between phases	
	a) In oil : mm	
	b) Out of oil : mm	
	Minimum clearance HV to earth in oil : mm	
	Minimum clearance – HV to tank in oil : mm	
	11) Details of tank :	
	Approx. thickness of sides	3.15mm
	do - Bottom : mm	4.00mm
	do- cover : mm	5.00mm
	do- tube radiators : mm	1.0mm
	12) Minimum clearance height for : mm	1640mm Approx.
	lifting core and windings from tank	
	13) Shipping details :	
	Parts detached for transport	NA
	Approx. wt. of heaviest package	1115Kg Approx.
	Approx. dimension of largest package(Lx B x H) : mm	1585 x 1830 x 1600 mm +15%
(C)	**OFF-LOAD TAP CHANGER**	
	· Make and type	Std. Make
	· Rated voltage and current	As above
	· Step voltage & no. of steps	As above
	· Locking arrangement	Provided
	· Position indication & Line drop compensation	Provided

Noted 11/01/2014

SHREE NURSINGHSAHAY MUDUNGOPAL ENGINEERS PVT. LTD. CANTONMENT ROAD CUTTACK

11/01/14

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Contd. P/9

Technical Particulars of Transformer 300KVA, 3.3-0.440KV

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
A)	GENERAL	
	a) Name of manufacturer :	SAI ELECTRICALS MEEERUT
	b) Service	Indoor
	c) Rating	
	Rated KVA :KVA	300
	Rated voltage of HV : KV	3.3
	Rated voltage of LV : KV	0.440
	Temperature rise in oil : °C	45 Deg C
	Temperature rise in winding : °C	55 Deg C
	Rated frequency :	50Hz
	d) Number of phases :	3Nos.
	e) Connection	
	HV	Delta
	LV	Star
	Vector group	Dyn11
	f) Tapping :	+7.5% to -7.5% @2.5%
	h) No load loss at rated voltage & frequency : KW (IS Tol. App.)	800W
	i) Load loss at rated current at 75°C: KW (IS Tol. App.)	5200W
	j) Impedance at rated current & frequency at 75°C : Percent	5% +/- IS Tolerance.
	k) Reactance at rated current & frequency : Percent	4.69%
	l) Efficiency at 75°C at unity p.f. :	
	At full load : Percent	98.04%
	At 3/4 full load : Percent	98.37%
	At 1/2 full load : Percent	98.62%
	m) Regulation at full load at 75°C	
	At unity p.f. : Percent	1.84%
	n) No load current at rated voltage & frequency : Percent	3% of Full load Current
	o) Approximate weights :	
	Core & winding : kg	550Kg Approx.
	Tank & fitting : kg	340Kg Approx.
	Oil : kg	190Kg Approx.
	Total weight : kg	1080Kg Approx.
	p) Approx quantity of oil : Ltr.	230Ltr. Approx.
	q) Approx overall dimensions :	
	Length : mm	1965mm +/-15%
	Breadth : mm	2000mm +/-15%
	Height : mm	1610mm +/-15%
	r) Terminal arrangement :	
	HV	Cable Box
	LV	Cable Box
	s) Reference standard ;	IS 2026

Nadeem 21/01/2014

SHREE NURSINGSAHAY MUDUNGOPAL ENGINEERS PVT. LTD. CANTONMENT ROAD CUTTACK

21/01/14

Shree Nursinghsahay Mudungopal Engineers Pvt. Ltd.
Admin. Head

Contd P/10

	TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER	BIDDER TO INDICATE
B)	**SPECIAL**	
	1) Approximate maximum flux density at rated voltage & frequency: CGS. Line/cm²	1.7 Tesla
	2) Efficiency at 75°C at 0.8 p.f. lagging	
	At full load : Percent	97.56%
	At 3/4 full load : Percent	97.97%
	At 1/2 full load : Percent	98.66%
	3) Load at which maximum. Efficiency occurs : Percent full load	39.23%
	4) Maximum efficiency : Percent	98.66%
	5) Impulse level	As per IS 2026
	HV	
	LV	As mentioned above
	6) No load loss at 110% rated voltage & frequency : KW	As mentioned Above
	7) No load current at 110% rated voltage & frequency : Percent	
	8) Type of winding :	
	HV	Cross Over
	LV	Spiral
	9) Insulating materials :	
	Turn insulation HV	Press Board & Kraft Paper
	Turn insulation LV	
	Insulation core to LV	
	Insulation HV to LV	
	10) Clearances :	
	Minimum clearance between phases	As per Specs./ IS 2026
	a) In oil : mm	
	b) Out of oil : mm	
	Minimum clearance HV to earth in oil : mm	
	Minimum clearance – HV to tank in oil : mm	
	11) Details of tank :	
	Approx. thickness of sides	3.15mm
	do - Bottom : mm	5.00mm
	do- cover : mm	5.00mm
	do- tube radiators : mm	1.0mm
	12) Minimum clearance height for : mm	1450mm Approx.
	lifting core and windings from tank	
	13) Shipping details :	
	Parts detached for transport	NA
	Approx. wt. of heaviest package	1150Kg. Approx.
	Approx. dimension of largest package(Lx B x H) : mm	2015 x 2050 x 1650mm ±15%
(C)	**OFF-LOAD TAP CHANGER**	
	· Make and type	Std. Make
	· Rated voltage and current	As above
	· Step voltage & no. of steps	As above
	· Locking arrangement	Provided
	· Position indication & Line drop compensation	Provided

Nodeem 21/01/2016

SHREE NURSINGHSAHAY MUDUNGOPAL ENGINEERS PVT. LTD. CANTONMENT ROAD CUTTACK

21/01/16

Shree Nursinghsahay Mudungopal Engineers Pvt. Ltd.

Admin. Head

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MANDATE FORM FOR ELECTRONIC FUND TRANSFER/INTERNET BANKING PAYMENT

To,
Bharat Coking Coal Limited,
Koyla Bhawan, Koyla Nagar,
Post- B.C.C.L. Township,
Dhanbad (Jharkhand),
Pin – 826005

Dear Sir,

Sub: Electronic Fund Transfer/Internet Banking (SBI-NET)

Ref.: Tender No. BCCL/PUR/211017-019/11-12/TRANSFORMER/12-13/52 DT. 27.08.2012

(Please fill in the information in CAPITAL LETTERS, Please TICK wherever it is applicable)

1. Name of the Party : SHREE NURSINGSAHAY MUDUNGOPAL ENGINEERS PRIVATE LIMITED
2. Address of the Party : 1B, Mahanadi Tower, Matamath, Cantonment Road

City : Cuttack PIN CODE: 753001

E – Mail ID : snmg.ctc@gmail.com

Permanent Account Number: AAECS4329M

3. Particulars of Bank:

Bank Name	**UNION BANK OF INDIA**	Branch Name	**COLLEGE SQUARE**
Branch Place	**BHIMA ICE FACTORY ROAD, COOLEGE SQUARE**	Branch City	**CUTTACK**
PIN Code	**753001**	Branch Code	540714
MICR No.	**753026003**		

(9 Digits code number appearing on the MICR Band of cheque supplied by the Bank. Please attach Xerox copy of a cheque of your Bank for ensuring accuracy of the Bank name, Branch name, and code number)

RTGS CODE	U	B	I	N	0	5	4	0	7	1	4						
Account Type	Saving				**CURRENT-√**							Cash Credit					
Account Number (as appearing in the Cheque Book)	4	0	7	1	0	1	0	1	0	0	3	1	4	5	7		

4. Date from which the mandate should be effective.

I hereby declare that the particulars given above are correct and complete. If any, transaction is delayed or not effected for reasons of incomplete or incorrect information. I shall not hold Bharat Coking Coal Limited responsible. I also undertake to advise any change in the particulars of my account to facilitate updation of records for purpose of credit of amount through SBI Net.

Shree Nursinghsahay Mudungopal Engineers Pvt. Ltd.

Branch Head

SHREE NURSINGSAHAY MUDUNGOPAL ENGINEERS PVT. LTD. CANTONMENT ROAD CUTTACK

Place:

Date:

Signature of the Party / Authorized Signatory

Credit that particulars furnished above are correct as per our records

Banker's Stamp
Date 22/3/2013

UNION BANK OF INDIA COLLEGE SQUARE CUTTACK

Signatory of Authorized official from the Banks)

21/3/13