TENDER ENQUIRY

Document issued to: ..............................................  If this Tender Document has been downloaded from our website Part-III envelope(Clause 9[c] bearing required Bank Draft for the requisite Tender Fee must be enclosed along with the tender otherwise their offer shall be rejected out rightly without any reference. However, the contents of the tender documents available for sale in our office shall be deemed as authentic. The responsibility of errors & omissions in the downloaded documents will be with tenderer

Dear Sirs,

Sub: Notice Inviting Tender for supply of Power Transformer

1. Sealed tenders are invited in duplicate only from the proven manufacturers or their exclusively authorized sole selling agents authorized by their manufacturer to offer against this tender for supply of Power Transformer to various Areas of BCCL as per detailed specifications as Annexure — “A”.

FOR SPARE PARTS
2. The offers are to be submitted before the closing date and time as mentioned above. Late tenders will not be considered.

3. Tenderers may be deposited in person by the tenderer in the Tender Box kept at Tender cell, Purchase Department, office of the CGM(MM), Bharat Coking Coal Limited, Commercial Block, Level –III, Koyla Bhawan, Koyla Nagar, Dhanbad or sent by post or courier to the above address. Bharat Coking Coal Limited, however, do not take any responsibility for loss of tender in transit. A tender which has not been received on the due date and before the time of opening of the tender, the same will not be considered. No relaxation in this respect will be entertained.

4. Tenders sent through telegram, telex, Fax or E-Mail will not be considered.

5. Tender documents/forms purchased by one firm are not transferable to another firm.

6. The tender document is divided into the following parts:
   i) Annexure ‘A’ - Technical specification
   ii) Annexure ‘B’ - Commercial terms without price.
   iii) Annexure ‘C’ - Check List

7. (a) The offers are to be submitted in three parts. The first part “Part-I i.e. Techno-commercial offer” should contain the detailed Technical and commercial terms of the offer. However, this should not contain the price. The envelope should be sealed superscribed with the tender number and the date of opening and must mark Part I

   (b) The second Part “Part-II i.e. Price Bid” should contain the details of price only. The envelope should be sealed superscribed with the tender number and the date of opening and must mark Part II.

   (c) “Part – III” [Applicable for those tenderers who will downloaded tender documents from our web site.]

In this case the intending tenderer must enclose the requisite tender fee as Bank Draft from any schedule Bank drawn in favour of “BHARAT COKING COAL LIMITED” payable at Dhanbad in
the “Part – III” envelope. The envelope shall be sealed, superscribed with tender number and due date of opening and must mark “Part-III”.

All the envelopes containing the tender shall be properly sealed. Envelopes stapled shall not be accepted. The name and address of the bidder must also be indicated on the envelopes. Please note that envelopes stapled shall not be accepted.

All these three sealed envelopes i.e. “Part – I” [Techno-commercial bid], “Part- II” [Price bid] and “Part – III” [Requisite tender fee as indicated in the tender notice] should be kept in a bigger envelope giving details of the tender No. and due date of submission and opening along with the name and address of the bidder.

In absence of “Part-III” envelope offer shall be rejected out rightly without any reference for those tenderers who have downloaded the tender documents from our website.

8. Part - I (Techno commercial Offer) and “Part – III” (Tender fee) will be opened on the due date of tender opening in presence of the authorised representative of the attending bidders

NOTE.

a) Tenders not submitted in the above manner will not be accepted.

b) If tender disclose their price in the techno-commercial bid(Part-I), the offer will be re-sealed and will be treated as invalid offer by the Tender opening Committee.

09. The price bids i.e. Part-II of only those tenders whose Part-I is found to be techno-commercially acceptable to BCCL will be opened later on. Date and time of opening will suitably be intimated to such bidders whose offers are found techno-commercially acceptable.

10. Bharat Coking Coal Limited reserves the right to accept or reject any or all offers in part or in full without assigning any reason thereof. No dispute of any kind can be raised against this right of the buyer in any court of law or elsewhere.

11. Earnest Money:

a) An Earnest money of Rs.150000/- in terms of Bank Draft of any schedule Bank drawn in favour of Bharat Coking Coal Limited payable at Dhanbad must accompany the Part I (Techno-commercial offer) otherwise offer shall be considered unresponsive.

b) If it is accompany the Part-II(Price bid), it will be presumed that tenderer has not deposited the requisite Earnest money and their offer shall be considered unresponsive.

12. Security money – Successful tenderer are required to deposit security money in the form of Bank Draft/Bank Guarantee of any schedule Bank of 10% of the order (value means F.O.R destination price) within 15 days from the date of receipt of order. Bank draft should be drawn in favour of “BHARAT COKING COAL LIMITED” payable at Dhanbad. In case they fail to deposit the same, the supply order shall be cancelled and the shall be processed to order elsewhere and the firm’s performance is to be kept recorded for future dealings with them. The security will be refunded to the firm within 30 days of satisfactory execution of the contract (Execution of the contract means successfully completion of supply against the order). For unsatisfactory performance and/or contractual failure the security money shall be forfeited. Please note that security money may be converted in to Performance Bank Guarantee wherever required. Please note that validity of Performance Bank Guarantee shall be as per clause 11 (a) of Commercial terms & conditions. Please confirm the acceptance of this clause clearly.
13. State/Central Govt. Organisation /PSU & Valid DGS&D/NSIC registered (for tendered items), firm shall be considered for exemption for submission of EMD/ Security money, if they can submit these documents after duly signed by Notary Public.

14. The bidders must give a declaration that they have not been banned or de-listed by any Government or quasi-Government agencies or PSUs. If a bidder has been banned by any Government or quasi-Government agencies or PSUs, this fact must be clearly stated and it may not necessarily be a cause for disqualifying them. If this declaration is not given, the bid will be rejected as non-responsive.

15. Bharat Coking Coal Limited reserves the right not to make any procurement against this tender without assigning any reasons.

16. Tenders of those tenderers who suo moto offer different prices or change the terms which effects the quoted price of the firm within the validity of the offer shall be treated as invalid offer ab initio and the action against such tenderer as per CIL rules / procedure will be taken.

17. ALL CONTRACTS WILL BE IN ACCORDANCE WITH THE PREVALENT INDIAN LAW AND ALL DISPUTES ARE SUBJECT TO THE JURISDICTION OF DHANBAD COURT ONLY.

IMPORTANT NOTE:

(i). The tenderers are requested to go through all the Annexure and furnish specific replies to each question raised therein.

(ii). Printed terms and conditions of the vendor shall not be considered. Tenderers are requested to submit their offer complete in all respects maintaining serial number of items, terms and conditions as per tender documents along with all supporting documents failing which offer may not be considered.

(iii). Normally no deviation is acceptable to our tender documents. Terms and Offers which are in deviation are liable for rejection without asking back reference to the tenderers. Offers as asked must be submitted complete in all respects.

(iv). Self attested copies of orders received from subsidiaries of CIL for the quoted items should be submitted along with the quotation in the Part-I (Techno-commercial offer). List of past supplies with the details of order reference and the performance report if any should be furnished along with the offer.

(v). The complete offer should be typed in the letter head of the tender (Hand written quotation will be summarily rejected). If firm’s letter heads are not sufficient to accommodate technical and pricing details preferably bigger papers may be used, such sheets alongwith other pages of the offer should be signed and stamped by company’s authorised signatory.

(vi). All pages of tender documents should be signed including all enclosures with the tenders except printed leaflets/catalogues and have company’s seal. This is must otherwise offer shall be rejected.

(vii). Erased and over written quotations will be summarily rejected unless corrections are authenticated with the tenderer’s signature.

(viii). BCCL reserves the right to increase or decrease the tendered quantity against any/all the items of the tender.

(ix). The tenderer must submit separate sheet in Part ‘I’ (Techno-commercial offer) indicating any deviation in their offer from the Technical and Commercial terms specified/required.
(x). Offer of those tenderers will not be considered commercially acceptable who did not successfully execute previous order placed on them by BCCL despite giving commercial notice and against whom penal action have been initiated for breach of contract.

(xi). In case a firm is proven for a sub-assly of any particular Equipment, it will be considered proven for components of that particular sub-assly of the Equipment only.

(xii) Purchase Preference Policy as per Govt. of India’s office memorandum no. DPE 13(12)/2003-Fin. Vol II dt. 18th July 2005 valid upto 31/03/2008 is applicable for any Govt. Dept/PSU tender. It is applicable to contracts of value of 5.0 crore and above but not exceeds 100.00 crore.

(xiii). As per Central Vigilance Commission (CVC) guidelines, no post tender negotiations may be held except in case of Proprietary Purchase or for items with limited source of supplies (negotiation in such case may be held only with L-1 / preferred L-1 vendor)

(xiv). If L-1 tenderer do not have adequate capacity to supply full quantity tendered, the uncovered quantity order may be distributed to L-2 tenderer at L-1 rate.

Notwithstanding anything said above, BCCL reserves the right to follow any guideline or instruction received from the Government or any statutory bodies from time to time.

Encl: As above Yours faithfully

For & on behalf of Bharat Coking Coal Limited.
ANNEXURE- B

COMMERCIAL TERMS:-

1. Part-I i.e. TECHNO COMMERCIAL OFFER should contain the following (but not the price of any item):-
   i) Name and address of the original Manufacturer along with full details of the contacts persons, Telephone No, Fax No., E. Mail address etc.
   ii) Details of order received giving the name of the buyer, their address and country, date of order and number/quantity item ordered and supplied. Specific details should be given regarding the item supplied with full address of the user, so that the same can be verified if felt necessary.
   iii) Details of collaborations, if any.
   iv) Details of After Sales Service to be provided, namely address of service depots, if any, strength of after sales service personnel and their qualifications and backgrounds.
   v) Details of Training offered, if any.
   vi) Details of quality control measures/stage inspections carried out. Accreditation of any approved std. quality control institute or organization may be indicated certifying the quality system of the bidder.
   vii) Details regarding location of the works. The purchaser reserves the right to inspect the works of the bidder. What are the facilities they will provide to carry out pre-despatch inspection in stages of manufacturing process, if buyer wish to do so.
   viii) A statement certifying that the bidder accepts all the commercial terms and conditions of Bharat Coking Coal Limited given in this bid documents without any reservation what so ever.

2. (A) PART II i.e. PRICE BID should contain the following:-
   i) Rate (Prices) must be quoted on variable basis & FOR Destination basis with the following break up.
      a) Ex-Works Price
      b) Freight, Insurance, Packing & Forwarding charges on lump-sum basis.
      c) Excise duty if applicable (It will be payable extra on Ex-works price basis)
      d) Sales Tax (It will be payable extra as applicable)

   NOTE: - 1. Please confirm in the technical bid Part-I that their rate is not inclusive of sales tax otherwise their offer may be ignored. However if their rate is inclusive of Ex-duty they must indicate the applicable rate of Excise duty in the technical bid i.e. Part-I
   2. The rate must be indicated both in figure and words. If there is difference between both, the amount appearing in words shall be taken for consideration.
i) In case of direct import by us (BCCL), price will be on F.O.R. delivery Port basis only. The price must be on Firm basis.

ii) In case of Imported stores and prices are in Indian rupees on FOR destination basis, only applicable sales tax and statutory local levies (if any) will be payable extra. The price should be on VARIABLE as per formula enclosed as Annexure-5.

iii) Conditional discount including quantity discount will not be considered for comparative purpose. Cash discount or Prompt payment discount will also be treated in the same manner. However only unconditional discount will be taken into account for comparative evaluation to ascertain the competitiveness of the tender. In case of F.O.B. price all discount attracts custom duty etc. except trade discount.

iv) In case of Imported stores other than direct import by BCCL, the firm should quote FOR destination price in Indian Rupee and firm shall give a certificate along with their offer of their Auditors certifying that they have paid Customs and other applicable Duties as per prevailing Customs Rates and refund if any shall be passed on to the buyer.

2 (B) – Detail evaluation of financial bids.

2 (B) (a) In spite of mentioning that offers should be submitted by the tenderers on FOR destination basis as per clause 2(A)(i) above, in case a tenderer does not specify the basis of price or quoted on ex-works or FOR despatching station basis, the price will be loaded to arrive at the F.O.R. destination price on the following manner.

<table>
<thead>
<tr>
<th>Approximate distance of dispatching Station from Consignee’s end.</th>
<th>Percentage FOR dispatching station price regarding Freight.</th>
<th>Packing and Forwarding Charges</th>
<th>Transit Insurance Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above 2001 Km</td>
<td>5%</td>
<td>2%</td>
<td>½%</td>
</tr>
<tr>
<td>1501Km - 2000 Km</td>
<td>4%</td>
<td>2%</td>
<td>½%</td>
</tr>
<tr>
<td>1001 Km - 1500 Km</td>
<td>3%</td>
<td>2%</td>
<td>½%</td>
</tr>
<tr>
<td>501 Km – 1000 Km</td>
<td>2%</td>
<td>2%</td>
<td>½%</td>
</tr>
<tr>
<td>Below 500 Km</td>
<td>1%</td>
<td>2%</td>
<td>½%</td>
</tr>
</tbody>
</table>

2 (B) (b) In case of Imports, the tenderers are required to quote on FOB delivery port basis. The total price will be estimated in the following manner to arrive at the CIF price & landed price of the import offers.

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Description</th>
<th>Imported from USA, Canada and Japan</th>
<th>Imported from European and other countries.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Freight &amp; Insurance</td>
<td>12% of FOB value</td>
<td>10% of FOB value</td>
</tr>
<tr>
<td>2</td>
<td>Insurances Charges</td>
<td>1/2% of FOB value</td>
<td>½% of FOB value</td>
</tr>
<tr>
<td>3</td>
<td>Custom Duty</td>
<td>As applicable</td>
<td>As applicable</td>
</tr>
<tr>
<td>4</td>
<td>Port handling and clearance Charges, Inland transportation and other miscellaneous charges</td>
<td>5% of FOB value</td>
<td>5% of FOB value</td>
</tr>
</tbody>
</table>

To arrive the FOR destination Price in Indian Rupees, the exchange rate published in National Newspaper applicable on the date of opening of Price Bids will be taken. The applicable rate will be “Selling BC Rate”.
3. VALIDITY:- The offer must be valid for acceptance for a period of 6(Six) months from the date of opening tender. Offers will not be permitted to be withdrawn during this period.

4. ULTIMATE CONSIGNEE:- The materials may be consigned to any of the depot of BCCL.

5. PRICE VARIATION: As per formula enclosed as Annexure -5 of technical specification.

6. PAYMENT TERM:-
   a) For indigenous supplies.
      100% within 30 days of receipt and acceptance of the materials by the consignee or from the date of receipt of Bill, whichever is later by the consignee.
   b) For imported supplies if Price is on FOB basis.
      In case of imported items where the price is on F.O.B. value 90% will be paid against letter of credit. Balance 10% will be paid after receipt and acceptance of materials. Agency commission will be paid in Indian Rupee. Clearly indicate the quantum of Agency Commission included in the F.O.B Price.

7. Either the Indian Agent on behalf of the foreign principal or the foreign principal may directly bid in a tender but not both.
   If an agent participates in a tender on behalf of one manufacturer, he should not quote on behalf of another manufacturer along with the first manufacturer for the same item.

8. In case of indigenous supplies, Tenderers are required to furnish the following details/information in the techno-commercial bid Part-I for transferring the Money to the supplier’s account through e-banking while making payment
   a. Name of the Bank.
   b. Name of the Branch with complete address.
   c. Party’s Account Style.
   d. Party’s nature of Account.
   e. Party’s Account Number.

9. DELIVERY:-
   i) Required delivery schedule-

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Item</th>
<th>Delivery Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Bidders should quote their earliest delivery schedule.</td>
</tr>
</tbody>
</table>

   ii) The bidder should be in a position to supply in specific delivery period at least 25% of the total tendered quantity, otherwise offer shall be considered unresponsive.
   iii) The delivery schedule quoted in the offer shall be firm and final. Delivery will be counted from the date of receipt of the order. Failure to supply the material in time may attract penalty as per clause No. 10

10. PENALTY FOR FAILURE TO SUPPLY IN TIME: As per Appendix –I
11. (a) GUARANTEE/WARRANTY/PERFORMANCE BANK GUARANTEE – As per Annexure A

12. PACKING FOR TRANSIT.
   The bidder should confirm provision of proper packing of the goods to be shipped by them if order is placed on them as is required to prevent their damage or deterioration during transit to their final destination. The packing shall be sufficient to withstand, without limitation, rough handling during transit. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the goods final destination and absence of heavy handling facilities at all the points in transit. The packing, marking and documentation within and outside the package shall comply strictly with such special requirement as shall be expressly provided for in the order.

13. QUALITY CONTROL MEASURE
   The bidder shall furnish details of quality control measures being adopted by him, including any International / Indian standard being followed.

14. PRICE FALL CLAUSE:
   - As per Appendix -II

15. FORCE MAJEURE CLAUSE
   If the execution of the contract/supply order is delayed beyond the period stipulated in the contract / 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. If and when additional time is granted by BCCL the contract/supply order shall be read and understood as if it had contained from its inception the delivery date as extended. Further this clause state that:
   a) The successful bidder will, in the event of his having to resort to this clause by a registered letter duly certified by the local Chamber of Commerce or statutory authority, the beginning and end of the causes of the delay, within fifteen days of the occurrence and cessation of such Force Majeure Conditions. In the event of delay lasting out of Force Majeure, BCCL will reserve the right to cancel the contract and provisions governing termination of contract, as stated in the bid documents will apply.
   b) For delays arising out of Force Majeure, the bidder will not claim extension in completion date for a period exceeding the period of delay attributable to the causes of Force Majeure and neither BCCL nor the bidder shall be liable to pay extra costs provided it is mutually established that Force Majeure Conditions did actually exist.
   c) If any of the force majeure conditions exists in the place of operation of the bidder even at the time of submission of bid, he will categorically specify them in his bid and state whether they have been taken into consideration in their quotations.
16. INSPECTION & TESTS.

i) The purchaser of its authorized 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) If the inspections and tests is conducted on the premises of the supplier or its subcontractor(s) 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 data, 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 and make all alternatives necessary to meet specification requirements free of cost to the Purchaser.

iv) The materials will be inspected on arrival at site by the consignee, which will be considered as final. This 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 representative’s i.e. third party prior to the dispatch of the Goods.

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

For Chief General Manager (MM)
The time and date of 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.

In the event of failure to delivery or dispatch 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.

The bidder must confirm the acceptance of this Penalty clause which will not be altered.
PRICE FALL CLAUSE.

APPENDIX-II

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 sells the stores of identical description to any other organization till validity of the contract.

ii) If at any time during the said period the supplier reduces the sale price of such stores or sells 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 CGM(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.

The bidder should confirm their acceptance of the above clauses.
LETTER OF PERFORMANCE GUARANTEE.

APPENDIX-III

1. Messers  ------------------------------------- ------------------  a company having its office
at  ------------------------------------------------ -------------------------------------------hereinafter
called the Seller has entered into a Contract No.------------------(hereinafter called the said Contract)
with Bharat Coking Coal Limited (hereinafter called , the Purchaser) to supply equipment on the terms and conditions in
the said Contract.

   It has been agreed that hundred percentage( 100% ) payment of the value of the
equipment will be made to the seller in the terms of the said Contract on the seller
furnishing to the Purchaser a Bank Guarantee for the sum of ---------------- equivalent  to
10 % of the value of each equipment and accessories dispatched by the seller as security
for the due and faithful performance of the terms of the said contract and against any loss
or damage caused to or would be caused to or suffered by the purchaser by reason of any
of the terms or conditions contained in the said contract.

   The------------------------ Bank havi ng its office at ------------------- has at the
request of seller agreed to give the guarantee herein after contained.

2. We,----------------------------- Bank Ltd.,do hereby undertake to pay the amounts due
and payable under this guarantee without any demur merely on a demand from the
purchaser stating that the amount claimed is due by way of loss or damage caused to or
would be caused to or suffered by the purchaser by reason of any breach by the said seller
of any of the terms or conditions contained in the said contract or by reason of the
seller’s failure to perform the said contract. Any such demand made on the Bank shall be
conclusive as regards the amount due and payable by the Bank under this guarantee. We
shall not withhold the payment on the ground that the seller has disputed its liability to
pay or has disputed the quantum of the amount or that any arbitration proceeding or
legal proceeding is pending between purchase and the seller regarding the claim.
However , our liability under this guarantee shall be restricted to an amount not
exceeding ------------------.

3. We,-------------------------------- Bank Ltd., further agree that the guarantee herein
contained shall come into force from the date hereof and shall remain in full force and
effect during the period that would be taken for the performance of the said contract and
that it shall continue to be enforceable till all the dues of the purchase under or by virtue
of the said contract have been fully paid and its claim satisfied or purchase certified that
the terms and conditions of the said contract have been fully and properly carried out by
the said seller and accordingly discharged the guarantee .Unless a demand or claim under
this guarantee is made on us in writing on or before the ------------------( date to be given---
----------months from the date of Bank Guarantee) we shall be discharged from all
liability under this guarantee thereafter.

4. We., Bank Ltd. further agree with the purchaser ,that the purchaser , shall have the
fullest liberty without our consent and without affecting in any manner no obligations
hereunder to vary any of the terms and conditions of the said contract or to extend time
of performance by the said seller(s) from time to time or to postpone for any time or
from time to time any of the powers exercisable by the purchaser , against the said seller
and to forbear or enforce any of the terms and conditions relating to the said contract and
we shall not be relived from our liability by reason or any such variation or extension
being granted to the said seller or for any forbearance act or omission on the part of the purchaser, or any indulgence by the purchaser to the said seller by any such matter or thing whatsoever which under the law relating to sureties would be for this provision have effect of an relieving us. The Bank further agrees that in case this guarantee is required for a longer period and it is not extended by the bank beyond the period specified above, the bank shall pay to this purchaser the said sum of ------------------ or such lesser sum as may than be due the purchaser and as the purchaser may demand.

5. We, ---------------- Bank Ltd. lastly undertake not to revoke this guarantee during its currency except with the previous consent of the purchaser, in writing.

6. The Bank has under its constitution power to give this guarantee and Mr.----------------- ----Manager, who has signed it on behalf of the Bank has authority to do so.

7. This Bank Guarantee will not be discharged due to the change in the constitution of the Bank or the Contractor.

Date------------------------  Day of ----------------------------20

For ------------------------ Bank Limited

Signature of the authorised person
for and on behalf of the Bank
CHECK- LIST

( To be filled by the Tenderer duly signed and stamped )

1. Whether the tenderer is a Manufacturer  Yes/No

2. Whether the tenderer is a exclusively authorized
marketing outlet of a manufacturer  Yes/No

3. If the reply against(2) above is yes, then indicate name &
full address of the Principal.

4. In case of (2) above whether the Principals Authorisation as
Exclusive Authorised Marketing Outlet is enclosed with
the offer  Yes/No

5. Acceptance of 180 days offer’s validity period as per
clause No.3 of Annexure B of NIT  Yes/No

6. Whether quoted prices are FIRM/VARIABLE
as per clause No.5of Annexure ‘B’ of NIT  Yes/No

7. Whether Price quoted is on FOR destination basis
as per NIT  Yes/No

8. **Whether Payment terms as per clause No.6 of Annexure
‘B’ of NIT accepted**  Yes/No

9. Whether Liquidated damages & Risk purchase clause as
per clause No.10 of Annexure ‘C’ of NIT accepted  Yes/No

10. Whether acceptance of Price fall clause as per clause 15
of Annexure ‘C’ of NIT accepted  Yes/No

11. Whether banned or delisted by any Govt or Quasi Govt
Agency/PSU  Yes/No

NOTE: NON-ACCEPTANCE OF ANY OF THE TERMS AND CONDITIONS MAY
LEAD TO REJECTION OF OFFER/THE OFFER MAY BE TREATED AS
UN-RESPONSIVE.

SIGNATURE OF THE TENDERER
WITH SEAL & STAMP
ANNEXURE- ‘A’

(a) GUARANTEE/WARRANTY/PERFORMANCE BANK GUARANTEE

i) The item will be warranted against any manufacturing defects/workmanship for a period of 12 months from the date of commissioning or 18 months from the date of receipt and acceptance. Any defect observed on this account shall be attended to immediately and in no case beyond a period of one month. For specific warranty on assemblies and sub-assemblies, details given in Technical specification may be referred to.

ii) Special Warranty Clause:- If the order is decided to be placed on the bidder, the bidder should confirm against the clause that in the event of any breakdown or failure of performance due to defects in materials, design, workmanship, spare parts etc. BCCL shall promptly notify the supplier in writing of any claims arising under this warranty. The repairs replacement or rectification work shall be carried out by the supplier at site at no cost to the purchase within 21 days of settlement of warranty claims.

“At no cost to the purchaser” means, the supplier will have to bear all the expenses up to the destination site i.e. Ex-works prices, Excise Duty, Sales Tax, Insurance, Inland Transportation charges etc. as applicable to ensure free delivery of warranty replacement at BCCL colliery sites.

The supplier will be required to stock spares to take care of warranty period breakdown. Spares should be available immediately from the date of intimation of breakdown.

iii) The suppliers must ensure that there is no major breakdown due to Manufacturing/ design defect during the warranty period. In cases such Breakdown occurs, the purchaser will reserve the right to extend the warranty period suitably as per the availability clause mentioned in the Technical Specification.

iv) A Performance Bank Guarantee on Scheduled/Nationalised Bank in India valid for 18 months from the date of receipt/acceptance of material for 10% value of the order (value means F.O.R. destination price including taxes, duties, transportation & insurance charges and other charges) shall have to be submitted to MM Division, BCCL, Koyla Bhawan on or before commencement of supply.

Dy Chief Materials Manager(P)
CHECKLIST

Please confirm the followings:

<table>
<thead>
<tr>
<th>Q.No</th>
<th>List of questions</th>
<th>Indicate in Yes / No below</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Are you a Manufacturer ?</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Are you a exclusively authorized marketing outlet of a manufacturer ?</td>
<td></td>
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<tr>
<td>3</td>
<td>If the reply against (2) above is yes, than have you indicated the name &amp; full address of the Principal.</td>
<td></td>
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<tr>
<td>4</td>
<td>In case of (2) above whether the Principals exclusive Authorisation to quote against this tender is enclosed with the offer</td>
<td></td>
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<tr>
<td>5</td>
<td>Have you submitted the tender fee or Proof of payment of tender fee in Part-I as indicated in Annexure-B (This is applicable in case of those bidders who have downloaded the tender papers through BCCL’s website.)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Have you carefully prepared and signed with name &amp; designation and have stamped the company's seal on all pages of tender documents/offer along with enclosures consisting of PART-I, PART-II &amp; PART –III.</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Have you enclosed in Part-II a blank format of price bid (Price format as per Annexure), as quoted by you (WITHOUT PRICE) along with confirmation that Price bid have been carefully prepared and signed on all pages of price bid.</td>
<td></td>
</tr>
<tr>
<td>8(a)</td>
<td>Have you quoted FOR Destination /FOB price(s) and indicated the break-up as per NIT.?</td>
<td></td>
</tr>
<tr>
<td>8(b)</td>
<td>In case of imported items, have you accepted to submit certificate with each supply of your Auditor certifying that you have paid Customs Duty as per prevailing Customs Rates and refund if any shall be passed on to buyer ?</td>
<td></td>
</tr>
<tr>
<td>8(c)</td>
<td>Have you accepted to submit certificate of the auditor that Refund/Credit, if any, obtained in respect of Excise duty shall be passed on to the buyer.</td>
<td></td>
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<tr>
<td>9</td>
<td>Have you quoted variable price as per NIT?</td>
<td></td>
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<tr>
<td>10</td>
<td>Is your offer valid for 180 days from the date of opening of tender ?</td>
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<tr>
<td>11</td>
<td>Have you specified firm delivery period ?</td>
<td></td>
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<tr>
<td></td>
<td>Question</td>
<td></td>
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<td>-------------------------------------------------------------------------</td>
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<tr>
<td>12</td>
<td>Have you accepted Liquidated Damages &amp; Force majeure clause?</td>
<td></td>
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<tr>
<td>13</td>
<td>Have you accepted Payment terms?</td>
<td></td>
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<tr>
<td>14</td>
<td>Have you accepted Inspection terms?</td>
<td></td>
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<tr>
<td>15</td>
<td>Have you submitted Earnest Money OR enclosed any documentary evidence for exemption towards submission of EMD?</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Have you accepted to deposit Security Money OR enclosed any documents for exemption towards submission of SD?</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Have you accepted to submit Performance Bank Guarantee? <em>(If applicable)</em> Refer Clause 11 of Annexure B ie Commercial terms and conditions.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Have you sought any deviations in COMMERCIAL OR TECHNICAL PARAMETERS and have specified them in the schedules prescribed for them in schedule of tender submission?</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Have you submitted copies of documents DGS&amp;D in case of DGS&amp;D approved items?</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Have you accepted Price fall clause?</td>
<td></td>
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<tr>
<td>21</td>
<td>Have you accepted Jurisdiction of Dhanbad Court and Jharkhand High court?</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Have you accepted Warranty clause?</td>
<td></td>
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<tr>
<td>23</td>
<td>Have you submitted declaration that you have not been banned or de-listed by any Government or quasi-Government agencies or PSUs.?</td>
<td></td>
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<tr>
<td>24</td>
<td>Have you submitted declaration that you have accepted all the commercial terms and conditions as per NIT without any reservation.</td>
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</tbody>
</table>

**SIGNATURE OF THE TENDERER WITH SEAL & STAMP**
TECHNICAL SPECIFICATION

SCOPE
(1) Design, manufacture & supply of 20 MVA, 132/11-6.6 KV Power Transformer - One no.
(2) Installation and commissioning of above Transformer at 132 KV Balihari substation of BCCL where all the other arrangement i.e. availability of plinth for Transformer and primary / secondary circuit breaker, isolators etc are already installed. - One job as per IER (Bidder may inspect the site at above substation of PB area of BCCL for observing compatibility of primary & secondary installation and other allied job which are already commissioned there.)
(3) Provision of system earthing for HV & LV winding with supply & commissioning of required material as for above : One job

SPECIFICATION FOR OIL IMMERSED POWER TRANSFORMER
20 MVA 132 KV CLASS

This specification broadly covers design, manufacture, supply, installation and commissioning etc. 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.

SERVICE CONDITION
a) Ambient Air temperature – Minimum 5°C to maximum 50°C with daily average ambient temperature of 40°C.
b) Altitude - Maximum up to 1000 meters above MSL.
c) Humidity - Relative humidity maximum up to 100% during rainy season.
d) Location - Outdoor

The power transformer shall be of outdoor type, vector group YND11, naturally oil cooled, copper wound of suitable class of insulation and shall be suitable for 3 phase, 50 HZ, ac power supply system. Continuous operation at rated KVA within ±10% variation (combined) of voltage & frequency. Continuous operation at rated KVA at each of the tap voltages. Over loading of units as indicated in IS 6600 (latest) Temp. rise limited to the following values:

<table>
<thead>
<tr>
<th>Cooling</th>
<th>Oil</th>
<th>Winding</th>
</tr>
</thead>
<tbody>
<tr>
<td>ONAN</td>
<td>45°C</td>
<td>55°C</td>
</tr>
</tbody>
</table>

The insulation level shall confirm to the following values:

<table>
<thead>
<tr>
<th>Nominal system</th>
<th>Highest system</th>
<th>Rated lightning</th>
<th>Power frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage kv rms</td>
<td>Voltage kv rms</td>
<td>impulse withstand</td>
<td>voltage kv peak</td>
</tr>
<tr>
<td>132</td>
<td>145</td>
<td>550</td>
<td>230</td>
</tr>
</tbody>
</table>

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 silicon steel sheets of low hysteresis 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.

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.

e) The manufacturer shall furnish the exact type of core material, source of procurement, BH curve & design flux density at normal tap.

**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 stiffeners 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) The transformer tank and its accessories shall be designed without pockets wherein gas may collect.

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

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

h) 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 (in the position of maximum oil temperature) for bulbs of oil and winding temperature indicators. The thermometer pocket shall be fitted with a captive screwed top to prevent ingress of water. It shall be possible to remove these bulbs without lowering the oil in the tank.
d) Bushing, turrets, inspection covers, thermometers pockets etc shall be designed to prevent ingress of water in to or leakage of oil from the tank.
e) All bolted connections shall be fitted with weather proof hot oil resistant neoprene gasket in between for complete oil tightness. If gasket is compressible metallic stop shall be provided to prevent over compression.

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. These skids shall be such that the bottom of the tank is at sufficient height above foundation for cleaning purposes. Each transformer shall be provided with four numbers of bi-directional flanged rollers of 1676 mm length.

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 5ºC to 110ºC.
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 shall be fitted with magnetic oil level gauge with two independent low level electrically insulated alarm and trip contacts. The oil level at 30ºC shall be marked on the gauge.

Pressure Relief Device
a) The transformers shall be provided with the single diaphragm type of explosion vent and a spring loaded type pressure relief device.
b) An equalizer pipe shall be connected to explosion vent from the conservator.
c) The pressure relief device shall be of sufficient size for rapid release of any pressure that may be generated in the tank. The device shall be operate at a static pressure less than hydraulic test pressure of transformer tank. Means shall be provided to prevent ingress of rain water. An extension pipe fitted above the device shall direct the measure flow of ejected oil downwards and permit its removal without disturbing the device.
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. 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 2º C or better. The OTI shall have full scale deflection of at least 240º C and shall have linear graduation to read every 2º C.

b) Winding temperature indicator (WTI)
A device for measuring the hot spot temperature of the winding shall be provided. Accuracy class of WTI shall be ± 2º 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, shall be furnished and mounted in the marshalling box.
- 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 240º C and shall have linear graduation to read every 2º C.

Winding
- The conductors shall be of electrolytic grade copper free from scales & burns.
- All winding shall be fully insulated. No graded insulation shall be accepted. Use of enamel as a sole conductor insulation is prohibited.
- The insulation of transformer windings and connections shall be free from insulating compounds which are liable to soften, ooze out, shrink or collapse and be non-catalytic and chemically inert in the transformer during service.
Coil assembly and insulation spacers shall be so arranged as to ensure free circulation of oil and to reduce the hot spot of winding.

Tapping shall be so arranged as to preserve the magnetic balance of transformer at all voltage ratios.

The maximum fault level to which the transformer may be subjected is 10000 MVA. Transformer manufacturer may take this aspect into account while designing the transformer for the through fault withstand capability.

All bus bars and leads shall be adequately supported in insulated cleats or frames shall be effectively locked.

Bus bars and leads shall be supported throughout their length to ensure that they do not move under normal service or transport or not forced from the prescribed position during any short circuit.

The studs, set screws or bolts provided for securing cleats or frames shall be effectively locked.

The percentage impedance shall be 10% for transformer ratings 16 MVA and 20 MVA with a tolerance of 10%.

The transformer shall have two windings.

**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.
  - Prior to filling the oil in the main tank suitable number of samples shall be tested for BDV, moisture content, resistivity at 90ºC, tan delta at 90ºC and interfacial tension. The oil samples taken from the transformer at site shall confirm to the requirement of IS : 1866.
  - 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.

**Oil Preservation system**

- The transformers shall be provided with the diaphragm sealing type oil preservation system. The rubber diaphragm shall be suitably sized to accommodate total change in oil volume from minimum ambient temperature (5 deg C) to 110 deg C. The diaphragm shall withstand full vacuum intake.
The conservator shall be fitted with a silica gel filter breather. It shall be so designed that:
1. Passage of air is through dust filter and silica gel.
2. Silica gel is isolated from atmosphere by an oil seal.
3. Moisture absorption indicated by a change in color of the tinted crystal can easily be observed from a distance.
4. Breather shall be mounted not less than 1400mm above rail top level.

Terminal Arrangement
a) The minimum clearances in air between the phases and between phase and earth potential of the porcelain bushing shall be in accordance with IS : 2026 – part V.
b) Bushing terminals shall be provided with suitable terminal connectors of approved type and size of ACSR/AAA conductors.
c) All transformer bushings shall be solid / capacitor porcelain with rain sheds.
d) The removal of bushing shall be possible without disturbing current transformers, secondary terminals and connectors or pipe work.

Current Transformer
a) Bushing CTs shall be provided. It shall be possible to remove the turret mounted CTs from the transformer tank without removing the tank cover.
b) The CT shall comply with IS 2705. Protective class of CT with accuracy not less than 5% shall be provided for restricted earth fault protection.
c) All secondary leads of bushing mounted CTs shall be brought to a terminal box near each bushing and then wired up to transformer marshalling box. The CT terminals have shorting facility.

Terminal Marking: The terminal marking and their physical position shall be in accordance with IS 2026.

On load Tap changer
The tap change switch shall be three phase, motor operated for simultaneous switching of similar taps on the three phases. Detail is given in annexure 3.

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 at each point of connection to the tank.

Marshalling box:
a) sheet steel weather, vermin and dust proof marshalling box shall be provided with each transformer to accommodate
   • Temperature indicators
   • Terminal blocks for incoming & outgoing cables
b) The sheet steel used shall be at least 2.0 mm thick. The box shall be free standing floor mounted type with sloping roof. The degree of protection shall be IP 53 in accordance with IS 2147
c) The temperature indicators shall be so mounted that dials are not more than 1600 mm from ground level.
d) The marshalling box shall have a glazed door of suitable size for convenience of temperatures indicators readings.

e) All cables shall enter the kiosk from the bottom and the gland plate shall be not less than 450 mm from the base of box. The gland plate and the associated compartment shall be sealed in a suitable manner to prevent the ingress of moisture, rodents, insect from the cable trench. Gland plates, cable lugs, cable glands, etc shall be provided.

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

g) It shall be located in such a way that the front shall not face transformer. It shall be mounted at least 500mm above the ground level.

h) The gland plate shall be made into two detachable halves, for facilitating termination of incoming and outgoing cables separately.

COOLING FAN
The transformer shall be fitted with a number of cooling fans, 240V, which shall be in operation as long as the winding temperature is more than 55ºC. The fans shall have low wattage, energy efficient motors.

PAINTING
The internal and external surface including oil filled chambers and structural work to be painted shall be sand blasted to remove all rust and scale or foreign adhering matter. All steel surface in contact with insulating oil shall be painted with two coats of heat resistant, oil insoluble, insulating varnish. All steel surface exposed to weather shall be given a primary coat of zinc chromate, second coat of oil and weather resistant varnish of a color distinct from primary and last two coats of flossy oil and weather resisting non fading paint of light grey color corresponding to shed no. 631 of IS 5. Primary paint shall be as per IS 104 and intermediate and final coats of paint shall be as per IS2932.

BOLTS AND NUTS
All bolts and nuts exposed to weather shall be of hot dip galvanized or cadmium plate or zinc passivated steel. All bolts nuts and washers in contact with non ferrous part which carry current, shall be of phosphor bronze.

CONTROL WIRING
All controls, alarms, indicating and relaying devices provided with the transformer shall be wired by the bidder up to the terminal blocks inside the marshalling box. The bidder shall supply and install the required 1100V grade heavy duty PVC insulated, steel wire armored PVC sheathed, multi core cables with copper conductors of the least 2.5 sq. mm conforming to IS 1554. The cable shall be properly supported. All devices and terminal blocks within the marshalling box shall be clearly identified by symbols corresponding to those used on applicable schematic or wiring diagrams. Not more than two wires shall be connected to one terminal. At least 20% spare terminals shall be provided. Each terminal shall be suitable for connecting two numbers 2.5 sq. mm stranded copper conductor from each side. Terminal blocks for CT secondary shall have shorting facility.
**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
6. Drain valve with plug of 80mm
7. Dehydrating breather
8. Buchholtz relay with alarm and trip contacts with one shut off valve on conservator side of 80mm size.
9. Plain oil level indicator with minimum breaking
10. Thermometer pocket
11. Magnetic oil level gauge with two electrical contact, one for alarm and other for tripping.
12. Bushing with metal parts and gaskets
13. On load tap changing switch
14. Oil filling hole with cover
15. Conservator
16. OTI with one electrical contact for alarm
17. Pressure release device, spring loaded system
18. WTI with one electrical contact for trip and another for switching on cooler fans.
19. Explosion vent with air release device
20. Skids and pulling eyes on both sides
21. Rollers – flanged and bi-directional of 1676 mm.
22. Filter valve at the top of transformer tank.
23. Inspection cover
24. Cooling fans
25. Marshalling Box
26. Lightning arrestors.

**PERFORMANCE**

1) **Operating condition**
   a) The transformers shall be capable of being loaded in accordance with IS 6600 up to load of 150%. There shall be no limitation imposed by bushings, tap changers etc.
   b) The transformers shall be capable of being operated continuously without danger on any tapping at the rated KVA with voltage variation of ± 10% corresponding to the voltage of tapping.
   c) For consideration of specific loading, the transformer shall be suitable for flux density of 1.1 to 1.9 weber/m².

2) **Fault conditions**
   a) The transformer and all accessories including CTs shall be capable for withstanding any external short circuit at bushing terminal without damage for 2 seconds.
b) The maximum flux density in any part of the cores and yoke at normal voltage and frequency shall not exceed 1.9 weber/m².

3) Impedance
The impedance on principal tapping shall be guaranteed to be as indicated in annexure.

4) The price will be evaluated on the basis of Capitalised cost and the formula for same is furnished in Annexure 4.

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.

Past supply performances
For judging the technical suitability of the offers past supply experiences, reliability of the equipments in service shall be main consideration. Hence tenderers shall separately submit the details of past supply to any subsidiaries of CIL, other Govt. organization for similar rating or above than similar rating.
1. Rated capacity : 20000 KVA
2. Quantity : 1 no.
3. Type : Core type oil immersed
4. No. of phases : 3
5. Frequency : 50 HZ +3%,- 5%
6. Location : Outdoor
7. Type of cooling : ONAF
8. Type of oil : Mineral oil
9. Rated capacity at the main tapping : Rated KVA at s.n. 1
10. Rated voltage
    HV Winding : 132 KV (±10%) 
    LV Winding : 11-6.6 KV(±10%)
11. Impedance voltage at rated current : 10 %± 10%
12. Highest system voltage
    HV Winding : 145 KV (±10%)
    LV Winding : 12-7.2 KV(±10%)
13. Rated insulation level
    One minute power frequency with stand voltage : 230KV rms
    Switching impulse with stand test voltage : 550 KV peak
    with standard full wave for windings for 1/50 micro seconds
    Lighting impulse withstand voltage for winding : 550 KV peak
    for 1.2/50 microseconds.
14. Connection symbol : YND11
15. Tap changer type : On load
16. Tapping : ±5%,±7.5%,±10%
17. Temp. rise (over ambient) in oil : 50°C
18. Temp. rise (over ambient) in Winding : 55°C
19. Type of winding : Double wound copper.
20. Terminal arrangement :
    HV side : Weather proof capacitor type porcelain bushing
    LV side : Weather proof porcelain bushing
21. Details of auxiliary supply voltage for :
    Fans : 240V AC
    Tap changer : 240V AC
    Alarms/Relay : 240V AC
22 Standard applicable for transformer : IS 2026(current)
23 Standard applicable for oil used : IS 335 (current)
24 Method of system Earthing : Bidder will give offer as mentioned in scope of job at s.n. 3 of page 1
ANNEXURE - 2

TECHNICAL PARTICULARS TO BE SUPPLIED BY THE BIDDER

A) GENERAL

a) Name of manufacturer :

b) Service

c) Rating

d) Rated KVA : KVA

e) Rated voltage of HV : KV

f) Rated voltage of LV : KV

g) Rated frequency :

h) Number of phases :

i) Connection

   HV
   LV

   Vector group

ej) Tappings

k) Reference ambient temperatures

   Maximum ambient air temperature ºC
   Minimum ambient air temperature ºC

l) Type of cooling :

m) Temperature rise

   1) Top oil ºC
   2) Winding ºC

n) Total loss at rated voltage at principal tapping & rated frequency : KW

o) Component losses

   1) No load loss at rated voltage at principal tapping & rated frequency : KW
   2) Full load loss at rated current at principal tapping at 75ºC : KW

p) Impedance voltage at rated current for the principal tapping percent

q) Reactance at rated current & frequency : Percent

r) No load current at rated voltage and frequency : Percent

s) Input to cooling plant : KW

t) Insulation level

   a) Separate source power frequency voltage withstand

      1) HV Winding : kV rms
      2) LV Winding : kV rms
      3)

   b) Induced over voltage withstand

      1) HV Winding : kV rms
      2) LV Winding : kV rms

   c) Lightning impulse withstand voltage

      1) HV Winding : kV peak
      2) LV Winding : kV peak

Switching impulse withstand voltage

      1) HV Winding : kV peak
      2) LV Winding : kV peak
u) 150% over voltage withstand time : secs

v) Efficiency at 75°C at unity power factor.
   - At full load : Percent
   - At 3/4 full load : Percent
   - At 1/2 full load : Percent

w) Regulation at full load at 75°C
   - At unity p.f. : Percent
   - At 0.8 p.f. lagging : Percent

x) Equipment for ONAF Cooling
   - Radiators on main tank
   - Separate cooler bank

y) Number of coolers
z) Rating of each cooler

a1) Terminal arrangement
   - HV
   - LV
   - Neutral

a2) List of fittings to be provided

a3) Approximate weights :
   - Core & winding : kg
   - Tank & fitting : kg
   - Oil : kg
   - Total weight : kg

a4) Approx quantity of oil for first filling : Ltrs.

a5) Approx overall dimensions inclusive of fitting:
   - Length : mm
   - Breadth : mm
   - Height : mm

a6) Dispatch details
   - a) Approximate mass of heaviest package : kg
   - b) Approximate dimension of largest package
     - Length : mm
     - Breadth : mm
     - Height : mm

a7) Un tanking height : mm

a8) Reference standard ;

a9) System earthing of both primary & secondary of transformer : Bidder has to give offer the cost of which will be mentioned in the price bid against item 3 of page 1 of scope of job.
(B) Special

1) Approximate maximum flux density at rated voltage & frequency : CGS.Line/cm²

2) Efficiency at 75°C at 0.8 p.f. lagging
   - At full load
   - At 3/4 full load
   - At 1/2 full load
   : Percent

3) Load at which maximum. Efficiency occurs : Percent full load

4) Maximum efficiency : Percent

5) Impulse level:
   - HV : KV
   - LV : KV

6) No load loss at 110% rated voltage & frequency : KW

7) No load current at 110% rated voltage & frequency : Percent

8) Type of winding : HV & LV

9) Insulating materials :
   - Turn insulation HV
   - Turn insulation LV
   - Insulation core to LV
   - Insulation HV to LV

10) Clearances :
    - 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
    - - do -  bottom : mm
    - - do -  cover : mm
    - - do -  tube radiators : mm

12) Minimum clearance height for lifting core and windings from tank : mm

(C) On-load tap changer

- Make and type
- Rated voltage and current
- Step voltage & no. of steps
- Control
- Auxiliary supply details
- Voltage control
- Line drop compensation
- Protective device
- Approx. over all weight : kg
- Approx. over all dimensions : mm
- Approx. overall quantity of oil in ltrs.
- Position indicator
- Remote control panel for OLTC operation
ANNEXURE – 3

Details of OLTC

a) On load tap changer: Suitable for outdoor installation, oil immersed, high speed, snap switches combining both selector and divertor duties, housed in self contained single compartment chamber and suitable for mounting externally on a part flange provided on the transformer tank. The tap changer shall be suitable for connection to adjacent tapping brought out from 132 KV windings (from +10% to –10% in suitable steps each) covering approx. range of 14 steps making a total of approx. of 15 positions.

The tap changer shall have the following equipments/components in the cubicles, mounted externally on the transformer tank. The driving mechanism also shall be housed in the said cubicle.

1. High torque electric motor for operation on 50 cycles A.C. supply.
2. Driving mechanism and energy accumulator.
3. Contactors with overload release.
4. Contactors for forward and reverse operation of the motor.
5. Raise/lower push buttons.
6. Local/remote control selector switches.
7. Limit switch.
8. Retainer switch.
9. Set of fuses
10. Handle for manual operation
11. Interlock between manual and electrical operation.
12. Insulated terminal board and connector for connection with transformers leads
13. Mechanical tap position indicator
14. Tap Changer operation counter
15. Anti Condensation heater with switch
16. Drain plug
17. Auxiliary transformer
18. Step by step relay
19. Mechanical stopper to prevent over cranking of the mechanism beyond extreme tap position.

b) An indoor floor mounted control cubicle with rear access door accommodating the following equipment shall be provided:
Remote tap position indicator, Lamp for indicating tap changing switch in operation, Raise/lower push button, Cubicle illuminating lamp, One set of fuse, One no. of potentiometer for remote tap position indicator etc.
FORMULA

\[ A = B + 75000 \times C \times (D + 0.4 \times E) \]

- \( A \) = Capitalised cost
- \( B \) = Landed cost
- \( C \) = Power Cost (Rs. / KWH)
- \( D \) = No load loss at rated voltage and frequency
- \( E \) = Full load loss at rated voltage and frequency at 75° C

Penalty for increase in loss figure:
- Penalty for increase of every 0.1 KW of no load loss
  \[ = 75000 \times C \times 0.1 = 7500 \times C \]
- Penalty for increase of every 0.1 KW of full load loss
  \[ = 75000 \times C \times 0.1 \times 0.4 = 3000 \times C \]

Power cost \( C = \text{Rs. 3.30} \) / KWH

Delivery scheduled: Bidders should quote their earliest delivery scheduled.

Quantity - 1 (one) no.

Dy.Chief Material Management(P)
PRICE VARIATION FORMULA

The price variation formula as per IEEMA circular is as under:

\[
P = \frac{P_0}{100} \left\{ C + 23 \times E_S + 28 \times IS + 7 \times IM + 7 \times TB + 7 \times W \right\}
\]

Wherein:

- \( P \) = Price payable as adjusted in accordance with the above formula
- \( P_0 \) = Price quoted/confirmed
- \( C \) = Average LME settlement price of copper wire bars
  - This price is as applicable for the month, two months prior to the date of tendering
- \( E_S \) = C&F price of CRGO ‘MOH’ grade Electrical Steel Sheets
  - This price is as applicable on the 1st working day of the month, one month prior to the date of tendering.
- \( IS \) = Wholesale price index number for ‘Iron & Steel (Base 1993-94=10C)
  - This index number is as applicable for the week ending 1st Saturday of the month, three months prior to the date of tendering.
- \( IM \) = Price of insulating materials
  - This price is as applicable on the 1st working day of the month, one month prior to the Date of tendering.
- \( TB \) = Price of Transformer Oil Base Stock
  - This price is as applicable on the last working day of the month, two months prior to the date of tendering.
- \( W \) = All India Average consumer price index number for industrial workers, as published by the Labor Bureau, Ministry of Labor, Govt. of India (Base 1982=100)
  - This index number is as applicable on the first working day of the month, three months prior to the Date of tendering.

For example, if date of tendering falls in May 2004, the applicable price of Copper Wire Bars (Co) end Transformer Oil Base Stock (TBo) should be for the month March 2004, where as the applicable price of CRGO Steel sheets (ESo) insulating material (Imo) should be as on 1st April 2004 and wholesale price index number for Iron & Steel (ISo) should be for the week ending first Saturday of February 2004 and all India average consumer price index No.(Wo) should be for the month of February 2004.

The above prices and indices are as published by IEEMA vide circular ref. No. IEEMA(PVC)/TRF/ prevailing as on first working day of the month …..ie. one month prior to the date of delivery.

- \( C \) = Average LME settlement price of copper wire bars
- \( E_S \) = C&F price of CRGO ‘MOH’ grade Electrical Steel Sheets
  - This price is as applicable on the 1st working day for the month, three months prior to the date of delivery.
- \( IS \) = Wholesale price Index number for Iron & Steel(Base 1993-94=100)
  - This index number is as applicable for the week ending 1st Saturday of the month, three
Months prior to the date of delivery.

IM = Price of Insulating Materials
   This price is as applicable on the 1st working day of the month, two months prior to the date of delivery.

TB= Price of Transformer Oil Base Stock
   This price is as applicable on the 1st working day of the month, two months prior to the date of delivery.

W = All India average consumer price Index number for industrial workers, as published
   By the Labor Bureau, Ministry of Labor, Govt of India (Base 1982=100)
   This index number is as applicable on the first working day of the month, three months prior to the date of delivery.

The date of delivery will be the date on which the Transformer tendered will be notified as being ready for inspection/dispatch or the contracted delivery date whichever earlier.

**Ceiling of price variation - ± 10(Ten) %.**

Bidders are required to submit relevant IEEMA circulars duly authenticated for base raw materials prices/other indices as stipulated in the PRICE VARIATION FORMULA pertaining to their tender in Part I of their offer.

Successful bidder shall be required to submit relevant IEEMA circulars duly authenticated for raw materials prices/other indices as stipulated in the PRICE VARIATION FORMULA pertaining to their supply along with supply bill.

Dy Chief Materials Manager(P)