



# **RAICHUR POWER CORPORATION LIMITED**

(A JOINT VENTURE COMPANY OF KPCL, BHEL & IFCIL)

2 X 800 MW - YERMARUS THERMAL POWER STATION, KARNATAKA

**TENDER DOCUMENT**

## **“Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS”**

**Tender No. SE(S&P)/ET/EE/LT/18-19/101, Dtd.21.07.2018**

**Office of the  
SUPERINTENDING ENGINEER (STORES & PURCHASE)**

RAICHUR POWER CORPORATION LTD  
YERAMARUS THERMAL POWER STATION  
YERAMARUS, RAICHUR-584 134



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## **CALENDAR OF EVENTS**

### **Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS Tender No. SE(S&P)/ET/EE(LT/18-19/101, Dtd:21.07.2018**

The following are the Calendar of bid events for two cover tender system.

1	Period of Completion	01 Months from the date of P.O.
2	Date of Publishing of Abstract Bid Notification and Brief Bid Notification in i) www.karnatakapower.com ii) www.eproc.karnataka.gov.in	18.07.2018
3	Last date for receipt of queries if any (through e-procurement cell)	10.08.2018 16:00hrs.
4	Last date and time for submission of technical bid cover-I along with EMD and Price bid cover-II through e-procurement cell.	18.08.2018 16:00hrs.
5	Opening of Technical bid (cover-I)	21.08.2018 17:00Hrs
6	Opening of Price bids (cover -II)	21.08.2018 17:30Hrs

for **RAICHUR POWER CORPORATION LIMITED,**

**sd/-**

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station  
Yermarus, Raichur-584134



**DECLARATION**

(To be given by the supplier at the time of submission of the completed tender)

**Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS  
Tender No. SE(S&P)/ET/EE(LT/18-19/101, Dtd:21.07.2018**

I /We have read the terms and conditions of the tender documents and related matters carefully and diligently and that I/We have submitted the tender having studied, understood and accepted fully the terms & conditions and implications for the agreement.

The requirement of the tender agreement as stated above will be fulfilled by me/ us to the entire satisfaction of the purchase committee of the Raichur Power Corporation limited, Yeramarus.

**(SIGNATURE OF THE SUPPLIER WITH SEAL)**



**PRE-QUALIFICATION REQUIREMENT**

**Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS  
Tender No. SE(S&P)/ET/EE(LT/18-19/101, Dtd:21.07.2018**

1. Bidder should be regular Manufacturer/Authorised Agencies/ Contractors and shall have proven experience in the field of manufacturing/ supply of 1500LPH transformer oil filtration plant (frame & Trolley mounted type). As a proof, bidder shall upload copy of company registration/ Authorization Certificate or any such certificate issued by a statutory authority/ Original Equipment Manufacturer.
2. Bidder should have supplied Transformer oil Filtration plant to any power plant / large Steel/ Cement/ Mining Industries/ PSU/ Government Organisations/ Public Utilities. As a proof bidder shall upload a copy of one purchase order of value not less than **Rs.5.00laks** and respective performance certificate.
3. Bidder should have achieved, in his name/firm, an annual turnover of **Rs.10.00Laks**/ above in any of two of the preceding five financial years i.e., 2017-18, 2016-17, 2015-16, 2014-15 & 2013-14. As a proof of this, the bidder shall upload Annual Turnover certificate, Balance sheet and profit & loss account statements duly certified by a chartered accountant.

for **RAICHUR POWER CORPORATION LIMITED,**

**sd/-**

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



## **TERMS AND CONDITIONS OF THE TENDER**

### **Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS Tender No. SE(S&P)/ET/EE(LT/18-19/101, Dtd:21.07.2018**

#### **1. DEFINITION OF TERMS:**

- a. The expression “Goods” where used in these conditions shall unless there be something either in the subject or context represent to “**1500LPH Transformer Oil Filtration Plants**” for Yermarus Thermal Power Station (YTPS).
- b. The “Corporation/Company” means **Raichur Power Corporation Limited (RPCL)**, a JVC of KPCL, BHEL & IFCIL having registered office at No.22/23, Sudarshan Complex, Sheshadri Road, Bangalore-560 009, Karnataka State.
- c. YTPS – means Yeramarus Thermal Power Station, to where the material are to be delivered/ unloaded by the agency.
- d. “Engineer” means the **Superintending Engineer (S&P)** of Yeramarus Thermal Power Station (YTPS) or any engineer any authorized officer nominated by Superintending Engineer (S&P) and is the authority to receive the materials at YTPS store.
- e. The “Agency/Contractor” means the Agency to whom this work is awarded on successful bidding.
- f. “Notice in Writing” or “Writing Notice” shall mean a notice written, typed or printed characters sent (unless delivered personally or otherwise proved to have been received) by registered post to the last known private or business address or registered office of the ordinary course of post it would have been delivered.
- g. “Premises of Company” means, YTPS project situated in Raichur District Karnataka State.
- h. Whenever in this contract the words “Directed”, “Required”, “Ordered”, “Desired”, “considered” “Necessary”, or like words are used, it shall be understood that the directions, requirements, permissions, orders, desiring, etc., of the Superintending Engineer (S&P) or other authorized Officers words “Approved”, “Acceptable”, satisfactory to the Superintending Engineer (S&P), YTPS. RPCL unless any other meaning is otherwise intended.
- i. Calendar Month means English calendar referred for the purpose.

#### **2. INSTRUCTIONS REGARDING E- PROCUREMENT:**

- a. The bid is to be submitted in the Government of Karnataka e-procurement platform [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in) system only.
- b. Bidders, who have not registered in e-procurement portal, may do so by registering through web site [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)
- c. The bidders can access bid documents on the web site, fill them and submit the completed bid documents in to electronic tender on the website itself within the stipulated date. The blank bid documents can be accessed through e-procurement portal web site [www.eproc.karnataka.gov.in](http://www.eproc.karnataka.gov.in)
- d. Bidders shall attach scanned copies of all the certificates pertaining to the qualification requirement as mentioned under “Pre-qualification Requirements” clause. Whenever required, bidders shall furnish the original certificates to the RPCL authorities, failing which, the bidder will be disqualified.



- e. Conditional bids, incomplete bids, bids without EMD, bids not properly uploaded and bids submitted late shall be rejected.
- f. Bidders shall refrain from altering/modifying/revising the price bids after the date and time fixed for submission of bids in the calendar of events even though if it is accepted by the portal. Date and time stamp of the portal shall be final in deciding the time and date of submission of bid.
- g. Decision of the Corporation in this regard is final and acceptable to all the bidders.
- h. The Bids which are found substantially responsive and accepted will be evaluated by Corporation to ascertain the lowest technically acceptable bid
- i. Evaluation of Bids: Prices quoted in the e-portal shall only be considered.
- j. The Tenderer with the lowest Total Evaluated Cost shall be the Lowest Tenderer (L1).

### **3. GENERAL TERMS AND CONDITIONS OF TENDER**

- a. It shall be the responsibility of the Tenderer to furnish all the particulars which are required for due consideration of the tender though not mentioned in the specification.
- b. Tender validity shall be 180 days from the date of opening.
- c. The tenderers are advised to pursue all the clauses in the specification and the instructions before quoting.
- d. The right to reject any or all tenders without assigning the reasons is reserved by the Superintending Engineer (S&P)/ RPCL.
- e. The agency should give clearly in his tender the place of residence and postal address. The delivery at the above name, place or position in the post box regularly maintained by the post office or sending by letter registered for acknowledgement or other communications shall be deemed sufficient proof thereof.
- f. The agency should upload signed tender document as a confirmation for acceptance of tender terms and conditions.
- g. The documents furnished through e-portal shall be accepted only after verification with the originals. The tenderer shall produce the originals for verification.
- h. It is not binding on the RPCL to accept the lowest or any other tender.
- i. If any tenderer withdraws his tender before the said period or makes any modifications in the terms and conditions of the tender which are not acceptable to the Corporation, then the Corporation shall without prejudice to any other rights to remedy, be at liberty to forfeit 100% of the earnest money deposit.
- j. Tenders with arbitration clause will not be accepted.
- k. Post bid correspondence will not be entertained.

### **4. INSTRUCTION TO BIDDER**

- a. The Bidder has to submit all the necessary proofs/ documents in support of qualifying requirement. In case the proofs/ documents not fulfilling and / or not matching with the qualifying requirements as mentioned in this clause 8, the bidder shall not be qualified for the bidding process.
- b. Clear readable photocopies of documents should be provided. The tenderer shall produce originals for verification on demand.
- c. Pre-Qualifying requirement are to be read in totality and not in isolation.
- d. All relevant documents should be submitted along with the Tender, failing which, the Tender shall be liable for rejection.
- e. It is essential to fill in all the information in the prescribed schedule or else the tender will be liable for rejection.



- f. Quoted prices shall be inclusive of all applicable taxes & duties. The basic price and breakup of taxes & duties applicable are to be indicated in the relevant window/ screen of the e-portal.
- g. RPCL also reserves the right to seek additional information as it may deem fit to satisfy itself of the eligibility of the Bidder.
- h. Bidder cannot submit multiple bids.
- i. Bidders shall not be under declaration of ineligibility for corrupt and fraudulent practices issued by the Government of Karnataka.
- j. Price bid of bidders who have furnished all the documents to meet the qualification criteria, technically and commercially responsive will only be opened.
- k. RPCL reserves the right to verify any information/ documents furnished by the bidder should the circumstances so warrant. In case the information or the documents furnished are found to be in correct/ false or invalid then the EMD Furnished by such bidder will be forfeited.
- l. Corrigendum/ Modification/ Corrections, if any will be published in the website only. For any clarification on e-procurement or request for e-procurement training, bidder can contact Helpdesk at: 080 23010900/ 23010901.

## **5. EARNEST MONEY DEPOSIT (EMD)**

- a. Deposit the EMD for **Rs.9,800/- (Rupees. Nine thousand and Eight Hundred only)** through e-portal only.
- b. Government of Karnataka Notification No. FD/850/EXP/12/2015, Dtd.29.12.2015 had exempted MSE registered with (NSIC) supplier with following exemptions:
  - i. MSE registered with NSIC under a single point vendor registration scheme, shall be facilitated by exempting from payment of EMD deposit during purchase all Government Department and State owned PSUs.
  - ii. Policy is meant for procurement of only goods produced and services rendered by MSEs. However, **traders are excluded** from the purview of Public Procurement Policy.
- c. Tenders must be accompanied by Earnest Money Deposit (EMD) & should be paid online through e-procurement portal using any of the following payment modes.
  - i. Credit Card
  - ii. Direct Debit
  - iii. National Electronic Fund Transfer (NEFT).
  - iv. Over the counter (OTC) (only through designated branches).
- d. Tenders must be electronically submitted (online through internet) within the date and time published in e-procurement portal. The tenders will be opened at prescribed time and date in the e-procurement portal, in the presence of the Tenderers who wish to attend at the Office of the Superintending Engineer (S&P), RPCL, YTPS, Yermarus-584134, Raichur-District.
- e. If the bidder withdraws his bid before the expiry of the bid validity period prescribed in the bid specification or if the successful bidder fails to submit the contract performance guarantee as specified in the bid and or fail to enter into a contract with the Corporation in the form prescribed with related requirement within 30 days of the date of letter of award, the EMD will be forfeited as liquidated damages.





- f. The EMD furnished by unsuccessful bidders will be returned, only after the award of contract and entering in to agreement with the successful bidder.
- g. For the successful bidder, the EMD will be returned, only after he enters into contract agreement and furnishes the contract performance guarantee (Security Deposit) in an acceptable form.
- h. No interest is payable to the bidders for the Earnest Money Deposit amount.

**6. ISSUE/SUBMISSION / SCHEDULE AND OPENING OF TENDER:**

As per the calendar of events indicated in the e-portal.

**7. REJECTION OF TENDER:**

Tender is liable to be rejected immediately, if the tender is:

- i. Not in the prescribed form
- ii. Not accompanied by the requisite EMD.
- iii. Not meeting the Pre-qualifying requirements indicated in the tender.
- iv. Not properly signed by the tenderer.
- v. From any black listed firm or contractor.
- vi. From the tenderer whose past performance is not satisfactory and EMD forfeited.
- vii. Not in conformity with the tender terms and conditions.
- viii. Bidder shall quote as per the schedule (Unit and Quantity) like kgs, Liter, Mtr. Nos etc. If it is not as per schedule, then the declaration shall be up loaded stating the reason, if not such bidder's EMD will be forfeited without any further communication.

**8. PRE-QUALIFICATION REQUIREMENTS:**

The Bidder shall meet the following pre-qualification requirements supported by authentic documents:

- i. Bidder should be regular Manufacturer/Authorised Agencies/ Contractors and shall have proven experience in the field of manufacturing/ supply of 1500LPH transformer oil filtration plant (frame & Trolley mounted type). As a proof, bidder shall upload copy of company registration/ Authorization Certificate or any such certificate issued by a statutory authority/ Original Equipment Manufacturer.
- ii. Bidder should have supplied Transformer oil Filtration plant to any power plant / large Steel/ Cement/ Mining Industries/ PSU/ Government Organisations/ Public Utilities. As a proof bidder shall upload a copy of one purchase order of value not less than Rs.5.00lakhs and respective performance certificate.
- iii. Bidder should have achieved, in his name/firm, an annual turnover of Rs.10.00Lakhs/ above in any of two of the preceding five financial years i.e., 2017-18, 2016-17, 2015-16, 2014-15 & 2013-14. As a proof of this, the bidder shall upload Annual Turnover certificate, Balance sheet and profit & loss account statements duly certified by a chartered accountant.

**9. RIGHTS OF RPCL:**

- i. RPCL reserves right to seek for any additional details/ control documents required at any point of time during and after the process of



bidding. If the agency fails to furnish such details their offer is liable for rejection.

- ii. It reserves right to modify/change/cancel any or all the tenders without giving any reason thereof.

**10. SCOPE OF SUPPLY:**

Supply of 1500LPH Transformer oil filtration plants as per the specification indicated, to store of Yeramarus Thermal Power Station within the delivery period to be stipulated in the order from RPCL along with catalogues & test certificates issued by OEM, as per procedure indicated in the tender.

**11. PRICES:**

Rates quoted should be inclusive of all statutory components such as taxes, duties, levies, transportation charges, Insurance etc., up to destination. The added above statutory components shall be indicated in the format annexed to price bid format. The rate quoted should be firm for the entire period of contract.

Rate quoted in e-portal is only considered for evaluation. Price schedules given in the tender document is for breakup of the price components such as Basic price, Taxes and duties, Freights and Insurance to arrive total cost for quoting in e-portal.

**12. ACCEPTANCE OF THE PURCHASE ORDER :**

The successful Tenderer shall clearly confirm the acceptance of the purchase order within 10 days of receipt of the purchase order by him. In case of failure to do so the EMD amount will be forfeited. Purchase order be withdrawn / cancelled at the discretion of RPCL.

**13. AGREEMENT:**

An agreement shall be executed by the successful Tenderer within 30 days after receipt of the purchase order on stamped duty paid attested purchased in Karnataka state only worth of Rs.200/- before effecting the supply. However in case any supplies are made the payment will be released only after entering into agreement. EMD will be forfeited if the supplier fails to supply the materials after acceptance/placing of purchase order/letter of intent. All the correspondence and minutes held after opening of the Tender and till finalization of the order shall form the part of the agreement. Six copies of agreement duly bound shall be submitted.

**14. SECURITY DEPOSIT:**

Security deposit of 10% of the total value of the order in the form of Demand draft or Bank Guarantee in favor of Raichur Power Corporation Limited, Yeramarus – 584 134, Raichur-District, issued by any Nationalized/ Scheduled Bank valid for the entire period of contract shall be furnished before effecting supply .The Bank guarantee shall be as per the Performa prescribed by the purchaser. The Security Deposit shall be released only after satisfactory completion of Guarantee period / Contract.

The supplier shall extend the validity of bank guarantee furnished towards Security Deposit beyond the stipulated period in case defects are noticed during the guarantee period. The bank guarantee shall be valid till such time the defective materials are replaced and performance of the same is found satisfactory for a further period of 12/ 18 months from the date of replacement of material.



**15. GUARANTEE:**

The materials supplied shall be guaranteed for satisfactory performance for a period of 12 months from the date of commissioning or 18 months from the date of dispatch, whichever is earlier against manufacturing defects/ bad workmanship. In case the materials are found defective during the above guarantee period, the supplier shall replace the materials free of cost to the purchaser at site.

**16. QUANTITY:**

The quantities shown in the schedule are only indicative, approximate and are liable for extreme variation. Raichur Power Corporation Ltd., reserves its right to vary the quantities in the schedule to suit its actual requirement. The contractor is obliged to supply the additional quantity at the agreed contract price and also the contractor shall not have any cause of action for additional claim, if the quantity is decreased. RPCL reserves the right to award, whole or part of the quantity, should the situation so warrant.

**17. DELIVERY :**

Prior dispatch the supplier shall seek dispatch clearance from RPCL. The delivery of the material covered by the Purchase order shall be completed as per delivery schedule indicated in the purchase order, on F.O.R. destination. All the consignments shall be booked in the name of Executive Engineer (Stores), RPCL, Yermarus – 584 134, Raichur District, Karnataka. Payment of demurrage / Wharfage etc. will not be payable by RPCL on any account. RPCL reserves the right to place the orders for the items/quantity indicated in the tender, on one or more firms to suit R.P.C.L's requirements.

**18. INSURANCE:**

No materials shall be dispatched without being covered for transit risks with the underwriters. The insurance charges will be at tenderer's cost as the materials are to be supplied on F.O.R destination basis. Materials shall be dispatched securely packed so as to avoid damages/losses during transit.

**19. PAYMENT:**

Payment shall be made only after receipt and acceptance of all the materials as per purchase order at our site within 60 days. Payment will not be released till Tenderer execute the agreement and furnish the Security Deposit amounting to 10% of the total value of the order. Bill shall be prepared in quadruplicate in favor of General Manager (F) – RPCL, Bangalore and originals shall be sent to Executive Engineer (Stores) with a copy each to Executive Engineer (Purchase) & General Manager (Finance).

**IF ANY OTHER FORM OF PAYMENT IS INSISTED THE CORPORATION RESERVES THE RIGHT OF LOADING THE ADDITIONAL COST TO ARRIVE AT THE LANDED COST WHICH MAY PLEASE BE NOTED.**

Whatever may be the other conditions for the rates quoted by the Tenderer it is only the conditions in the schedule or order that will bind the Executive Engineer (Stores), RPCL Yermarus – 584 134, Raichur-District, and if the successful supplier wishes that some other conditions quoted by him also be accepted, he shall specifically raise the issue as soon as the purchase order is received by him and get the same accepted or clarified.

**20. PENALTY:**

- a. EMD and Security deposit will be forfeited if the Tenderer fails to supply the materials within the stipulated period.



- b. Penalty at the rate of 0.5% of the value of order will be levied for delay in supply of the materials for every week subject to a maximum of 5% value of the order.
- c. If the successful Tenderer fails to supply the materials before the expiry of the stipulated delivery period, the purchaser reserves the right to cancel the order and forfeit the SD/EMD without prejudice to the claim for damages caused to purchaser on account of failure on the part of the supplier.
- d. If the supplier fails to supply the materials within the stipulated delivery period, RPCL at its discretion can reject the materials supplied beyond the stipulated delivery period and the contractor has to make arrangements to take back the materials at his own cost & risk. RPCL will not be responsible for the loss/damage to these materials.

**21. QUALITY:**

Quality of the materials shall be clearly specified in the tender with relevant ISI& ISO/Standards and the supply shall be as per offer/ detailed specification. The supplier should furnish the test certificate of the material free of cost. Supplies not in confirmation to accepted/approved quality shall be liable to be rejected. The supplier shall arrange to collect the rejected materials and replace the same with approved quality materials at his risk and cost within the period of being informed in writing.

**22. REJECTION OF DEFECTIVE MATERIAL:**

If the materials or any portion thereof, is found defective, or fails to fulfill the requirements of the contract, the purchaser shall give the supplier notice setting forth such defects or failure, and the supplier shall forthwith make good the defective material, or alter the same to make it comply with the requirement of the contract. Such replacement shall be carried out by the supplier within a reasonable time. Should he fail to do so with the requirement of the contract / fail to do so within reasonable time the purchaser may reject and replace, at the cost of the supplier, the whole or any portion of the material, as the case may be which is defective or fails to fulfill the requirement of the contract.

If the materials supplied are found to be substandard and get rejected, the name of such supplier will be circulated to all the power station.

**23. FORCE MAJEURE CLAUSE:**

If at any time during the continuation of the contract, the performance in whole or in part or any obligation under this contract shall be prevented or delayed by reason of act of god such as war, fire, flood, earthquake, acts of Civil Commotion, acts of Govt. etc.,( herein after referred to as eventuality), then provided not in writing of such happenings of eventuality is given, within 15 days of occurrence thereof either party shall on the reason of such eventuality can terminate this contract without have any claim for damage against the other in respect of nonperformance or delay in performance of the contract, provided such occurrence of eventuality has prevented or delayed the execution / performance of contract for a period exceeding 60 days.

Power cut imposed by the government, if any shall not affect supply of materials by the successful tenderer. Under any condition, the tenderer shall make alternate arrangements on his own, to adhere to the delivery schedule.



**24. GRANT OF EXTENSION OF TIME:**

In the event the contractor is hindered in the execution of supply for reasons beyond his control which could result in non-completion of supply within the completion period, the corporation may, at the request of the contractor in writing extend the completion period and the contract period by such period as it consider reasonable under the circumstances, provided that such request shall be made within 7 days of occurrence of the cause necessitating the extension and/or the expiry of the completion period .In this regard, the decision of Executive Engineer (Purchase)/RPCL, is final and binding on the contractor/agency.

**25. LIQUIDATED DAMAGES:**

Please note that if the materials are not delivered /dispatched within time specified above, the PO may be cancelled and the materials will be purchased at your risk. In addition a penalty of 3% of order value will be levied on you by way of liquidated damages.

**26. INSTITUTION OF SUITS:**

Any suit or any proceedings arising in any respect under this contract shall be subject to Jurisdiction in law courts at Raichur only. It is agreed that no other court shall have jurisdiction to entertain any suit or proceedings even though part of the cause of action might arise within the jurisdiction of any such courts. Arbitration in this contract is not acceptable.

Any of the terms and conditions mentioned here under general terms and conditions specifically not commented or not mentioned in your offer shall be construed as accepted and considered for incorporating while processing the offers for ordering.

**27. DISPUTES:**

Arbitration clauses will not be applicable for the Settlement of disputes arising out of this contract.

**28. TERMINATION OF CONTRACT:**

If the contractor fails to supply the order quantity with in the delivery period the Corporation reserves the right to terminate the contract by giving a months' notice.

If, any of the documents / information furnished by the bidder is found to be false after award of the contract their EMD and SD will be forfeited and their contract will be terminated.

for **RAICHUR POWER CORPORATION LIMITED,**

sd/-

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



## **Technical Specification**

### **Procurement of 1500LPH Transformer Oil Filtration Plants for YTPS Tender No. SE(S&P)/ET/EE(LT/18-19/101, Dtd:21.07.2018**

#### **I. DETAILED SPECIFICATION:**

Note: This specification data sheet is in addition to our specification schedule for detailed specification of tendered item.

#### **GENERAL ASSEMBLY:**

**The trolley mounted filtration set will be placed at the ground floor and transformers are installed at 30meter elevation from the ground and needful additional booster pump shall be provided for developing safe working.**

All the components should be arranged neatly and compact with adequate space. The complete plant shall be provided with a sheet metal casing and necessary doors providing access to all controls and is suitable for outdoor operations under all weather conditions.

#### **1. FILTRATION PLANT SHALL CONSIST OF THE FOLLOWING:**

- i. Preliminary magnetic strainer
- ii. Inlet feed gear pump
- iii. Heater Vessel
- iv. Filter vessel with filter cartridges
- v. Degassing chamber
- vi. Vacuum pump
- vii. Float Switch
- viii. Outlet centrifugal pump
- ix. Set of valves for inlet, outlet, non-return, bypass, sampling, etc.,
- x. Vacuum gauge, temperature gauge, compound (pressure vacuum) gauge etc.,
- xi. Control panel consisting of control of various motors, etc.,

#### **2. OIL CONDITIONING SYSTEM MAGNETIC STRAINER:**

The plant shall be provided with a suitable magnetic strainer at the inlet of the gear pump with necessary wire mesh to arrest all coarse particles. Provision shall be made to clean the strainer element without dismantling the complete strainer from the pipeline.

#### **3. INLET FEED GEAR PUMP:**

Positive displacement type inlet feed gear pump shall be provided and have a built-in pressure relief valve to take care of any accidental pressure raises at the delivery side of the pump.

#### **4. HEATERS/ HEATER VESSEL:**

The heater tank shall be of MS welded construction. The vessel shall be leak proof and suitable for high vacuum and pressure application. The heater elements shall be designed such as to replace without draining the heater vessel and have a long life.

The total heating capacity shall be divided into number of stages, controlled by a thermostat with an accuracy of at least +/- 2 deg. C. This thermostat is of adjustable type and the control switch/ knob is housed in the control panel for easy observation and readjustment if required.

Dial type temperature Gauges shall be provided before and after the heater vessel to indicate the oil temperature before and after oil heating.



## **5. FILTER:**

The filtering system shall essentially consist of a high efficiency non-hygroscopic throwaway type filter cartridge with large dust holding capacity. The filter medium is progressively denser in the direction of flow, which will ensure large dust holding capacity.

The filter vessel shall be leak proof and suitable for high vacuum and pressure application and mounted so as to afford facile replacement of cartridges without the use of any special tools or any special facilities.

Necessary compound gauge shall be provided on the filter vessel to indicate the inlet pressure so that the condition (Clean or choked) of the filter cartridges can be ascertained from the gauge reading.

Necessary aeration valve shall be provided on the filter vessel to aerate the vessel during draining.

## **6. DEGASSING CHAMBER:**

The degassing system shall be efficiently designed in such a way that the required parameters as mentioned are achieved.

The degassing chamber shall be fully welded construction without any flange or seal to preclude any possibility of leakage due to seal failure or improper assembly. The vessel shall be suitable for operation under high vacuum conditions.

The degassing chamber shall consist of efficiently designed column of raschig rings. The spread of oil in the degassing chamber should uniform and ensures maximum exposure of oil to vacuum.

The degassing chamber shall be provided with a suitable Float Switch, which will control the oil level in the degassing chamber.

The oil level in the degassing chamber shall be maintained to the minimum so that maximum free fall height is available for the oil to fall through, irrespective of height of the degassing chamber. By this, the oil is exposed to high vacuum to the maximum extent so that degassing and dehydration is complete.

## **7. VACUUM PUMPING SYSTEM:**

The oil conditioning plant shall be provided with vacuum pump of adequate capacity to ensure that the required parameters as mentioned are achieved. The vacuum pumps should be of reputed make like PFEIFFER/ LEYBOLD Germany/ SHINCO SEIKI/ TOSHO Japan.

## **8. DISCHARGE PUMP:**

A Centrifugal Pump will draw out the oil after purification, dehydration and degasification in the degassing chamber held under vacuum.

This discharge pump shall have adequate capacity to deliver the required quantity of oil from the degassing chamber under vacuum.

## **9. VALVES:**

All valves in oil lines shall be ball valves with Teflon seating and with stainless steel balls. These valves shall be leak proof and suitable for vacuum and pressure



application. All valves in the vacuum line up to 50 NB size shall be ball valves, these valves are suitable for high vacuum application.

Ball valves shall be provided for inlet, outlet and a bypass valve shall be provided to afford internal circulation of oil within the plant itself.

A ball valve shall be provided at the outlet of the outlet gear pump for drawing samples of conditioned oil.

#### **10. PIPES AND FLANGES:**

All pipes shall be of good quality pipes and all oil and vacuum connections shall be in the form of flanged joints with 'O' rings ensuring full sealing efficiency at all times with minimum maintenance requirements.

#### **11. GAUGES AND INSTRUMENTS:**

A compound (pressure-vacuum) gauge shall be provided at inlet of the filter vessel to check the condition (clean or choked) of the filter cartridges.

A dial vacuum gauge of range (0-760 torr) shall also be provided to measure vacuum gauge of Mcleod type. Dial type temperature gauges shall be provided before and after the heater vessel.

#### **12. DRAINING SYSTEM:**

This filter shall be provided with a single point draining of the whole plant just by manipulation of the valves.

#### **13. CONTROL CABINET**

A sturdily built easily accessible control cabinet housing all the electrical control gears like contactor, starter, fuses, push buttons, isolators, control thermostats, interlocking features, vacuum gauges etc. shall be provided. All the wiring shall be routed neatly and all wire terminals suitably identified with ferrules.

The control panel shall be provided with a mimic diagram indicating the state of operation of vacuum pump, heaters, gear pump, glandless centrifugal pump, etc. The mimic diagram shall be provided with required indicating bulbs with switches.

The wiring provided shall be of adequate capacity to handle appropriate load currents continuously duly following is standards.

- i. A temperature and vacuum recorder to be provided.**
- ii. The Plant shall be suitable for operation on 415 V, 3 Ph, 3 Wire, 50 Hz, A.C System. Control voltage shall be derived in the panel to 110V AC for control circuit.**

#### **14. ELECTRIC MOTORS**

All electric motors driving the various pumps shall be TEFC squirrel cage induction motors operating at 415 Volts +/- 15%, 3 phase, 50 Hz, AC supply and are suitable for direct on line starting through a starter. For glandless centrifugal pump, the motor shall be integral with the pump. All other motors shall conform to IS 325/1970 with class F insulation. Motors shall be of Energy efficient series-2 of M/s.Siemens/.KEC/Alstom/GEC/BBL

#### **15. INTERLOCKS/SAFETY CONTROLS:**

The gear pump and Float Switch in the degassing chamber shall be interlocked in such a way that when the oil/ foam level in the degassing chamber increases beyond the





desired level, the gear pump will be turned OFF, so that there is no more oil flow into the degassing chamber.

**16. PIPING:**

Material of Piping shall be Leak proof and should not corrode with oil use.

**17. THE MACHINE CAN ACHIEVE THE FOLLOWING PARAMETERS:**

<b>Sl. No.</b>	<b>Parameter</b>	<b>Initial</b>	<b>After Three passes</b>
<b>1</b>	Breakdown Voltage in kV	20	Above 60kV
<b>2</b>	Moisture Content	50PPM	<10ppm

**18. INSPECTION & TESTING:**

The Plant shall be offered for Inspection & Testing with Transformer Oil at Supplier's works. Supplier shall demonstrate the Plant performance as per parameters mentioned in the specifications.

**19. COMMISSIONING:**

Supplier shall depute their Engineer to our site for commissioning of the Plant. The oil to be processed and the Electrical Supply will be kept ready at site.

for **RAICHUR POWER CORPORATION LIMITED,**

sd/-

**Superintending Engineer (Stores & Purchase)**

Yermarus Thermal Power station

Yermarus, Raichur-584134



**II. SPECIFICATION SCHEDULE:**

Sl. No.	Specification	Unit	Qty.	HSN Code & % of GST	Delivery Period	Make & Model
1.	<p>6520500004  <b>1500LPH TRANSFORMER OIL FILTRATION PLANT- FRAME MOUNTED TYPE</b>            Standard - The plant shall be generally confirm to IS: 6034.1989 and its latest revision.            Capacity - 1500 LPH, Plant operation- 415V +/- 10%, 3 phase, 50Hz +/-5%, 3wire system without neutral, control transformer shall be provided for control supply. Dimensions not to exceed 560 W x 1200L x 1500H (MM). Transformer oil filtration plant shall be Portable, Weight of the machine more than 350kg and arranging hooks for lifting purpose. Also provision for all around doors for storage purpose.            The filtration plant shall have the following:            1. Preliminary magnetic strainer            2. Inlet feed gear pump            3. Heater Vessel            4. Filter vessel with filter cartridges            5. Degassing chamber            6. Vacuum pump            7. Float Switch            8. Outlet centrifugal pump            9. Set of valves for inlet, outlet, non-return, bypass, sampling, etc.            10. Vacuum gauge, temperature gauge, compound (pressure vacuum) gauge etc.            11. Control panel consisting of control of various motors, etc.            12. Nylon braided hose of 20Mtrx3Nos. each for inlet and outlet (Total 60Mtr for inlet and 60Mtr for outlet) rated to with stand pressure and temperature.            All electric motors driving the various pumps shall be of TEFC squirrel cage induction motors of energy efficient 2 series and shall operate on 415 Volts +/- 15%, 3 phase, 50 Hz, AC supply and are suitable for direct on line starting through a starter. For glandless centrifugal pump, the motor shall be integral with the pump. All other motors shall confirms to IS 325/1970 with class of insulation E/I            The machine shall achieve the following parameters.            Parameter Initial after Three Passes.            1. Break Down Voltage in KV 20, Above 60 KV            2. Moisture Content 50 PPM, &lt;10 PPM            3. Gas content in % by volume 10 after filtration 1            Additional Spares shall be supplied with equipment:            1. One set of spare O rings installed/provided in pumps, hoses, valves etc.            2. One set of filters            3. Vacuum pump oil- 20Ltrs            4. Temperature gauge            5. Pressure gauge            6. Temperature indicator            7. Thermostats            8. Solenoid valve            9. One set of selector switches            10. Float valve of degassing chamber.</p>	No.	1			



2.	<p>6520500012</p> <p><b>1500LPH TRANSFORMER OIL FILTRATION PLANT - TROLLEY MOUNTED</b></p> <p>Standard - The plant shall be generally confirm to IS: 6034.1989 and its latest revision.</p> <p>Capacity - 1500 LPH, Plant operation- 415V +/- 10%, 3 phase, 50Hz +/-5%, 3wire system without neutral, control transformer shall be provided for control supply.</p> <p>The filtration plant shall have the following:</p> <ol style="list-style-type: none"> <li>1. Preliminary magnetic strainer</li> <li>2. Inlet feed gear pump</li> <li>3. Heater Vessel</li> <li>4. Filter vessel with filter cartridges</li> <li>5. Degassing chamber</li> <li>6. Vacuum pump</li> <li>7. Float Switch</li> <li>8. Outlet centrifugal pump</li> <li>9. Set of valves for inlet, outlet, non-return, bypass, sampling, etc.</li> <li>10. Vacuum gauge, temperature gauge, compound (pressure vacuum) gauge etc.</li> <li>11. Control panel consisting of control of various motors, etc.</li> <li>12. Nylon braided hose of 20Mtrx5Nos. each for inlet and outlet(Total 100Mtr for inlet and 100Mtr for outlet) rated to with stand pressure and temperature.</li> <li>13. The additional booster gear pump is also provided in the machine.</li> </ol> <p>All electric motors driving the various pumps shall be of TEFC squirrel cage induction motors of energy efficient 2 series and shall operate on 415 Volts +/- 15%, 3 phase, 50 Hz, AC supply and are suitable for direct on line starting through a starter. For glandless centrifugal pump, the motor shall be integral with the pump. All other motors shall confirms to IS 325/1970 with class of insulation E/I.</p> <p>The machine shall achieve the following parameters. Parameter Initial after Three Passes.</p> <ol style="list-style-type: none"> <li>1. Break Down Voltage in 20 to 100 KV</li> <li>2. Moisture Content 50 PPM, &lt;10 PPM</li> <li>3. Gas content in % by volume 10 after filtration 1</li> </ol> <p>Additional Spares shall be supplied with equipment:</p> <ol style="list-style-type: none"> <li>1. One set of spare 'O' rings installed/provided in pumps, hoses, valves etc.</li> <li>2. One set of filters</li> <li>3. Vacuum pump oil- 20Ltrs</li> <li>4. Temperature gauge</li> <li>5. Pressure gauge</li> <li>6. Temperature indicator</li> <li>7. Thermostats</li> <li>8. Solenoid valve</li> <li>9. One set of selector switches</li> <li>10. Float valve of degassing chamber.</li> </ol> <p>Trolley mounted with provision for shifting from place to place, mounted on four tyres with parking jacks four number Make: John fowler / FOWLER WESTRUP</p>	No.	1			
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**Note:**

1. The rates quoted shall be inclusive of all applicable taxes, duties, levies etc., and FOR Destination basis (YTPS site premises as directed).
2. The basic price and breakup of taxes & duties applicable are to be indicated in the relevant window/ screen of the e-portal.
3. Bidder shall furnish Catalogues and Test Certificates issued by OEM along with the supply.

**(SIGNATURE OF THE SUPPLIER WITH SEAL)**