

SCHEDULE - III

TECHNICAL SPECIFICATION FOR OVERHAULING/ RECONDITIONING OF HEALTHY POWER TRANSFORMERS OF 3.15 MVA TO 8.0 MVA RATING AGAINST TN-2153.

1. **SCOPE:**

This specification covers assessment and estimation for overhauling and reconditioning of healthy Power Transformers of 3.15 MVA, 5.0 MVA & 8.0 MVA rating of 33/11 KV of various makes, types and ratings from circle store/ Site of Nigam on Rate Contract basis.

2. **SCOPE OF WORK:**

This will involve following work:

- a) Unloading & opening of transformer cover, draining of oil, de-tanking core and coil assembly and replacement of damaged parts (if any), cleaning and washing/ flushing of dust/ dirt/ rust from all parts, tank and cooling tube, re-tanking after replacement of parts, cleaning of winding & vacuum impregnation of winding in the Vacuum Oven for duration till required results are obtained. Re-filling of new transformer oil after filtration (filtration charges not included here), testing of transformer after repairs/ re-tanking and before loading of the transformer at contractor's work.
- b) Replacement of damaged/ defective parts, if required (as per joint inspection).
- c) Painting work (external/ internal)

2.1 The bidder shall quote separately for the activities indicated hereunder:

1.	Unloading & loading at the works
2.	Draining of oil, Opening of transformer, detanking of core coil assembly, Denting work on transformer, cleaning, washing & flushing of all parts, tank and cooling tube for removal of dust/rust/scale/sludge deposition. Internal painting with heat and oil resistant Zinc chromate paint. Cleaning of core-coil assembly and HV/LV winding by flushing with oil, Dehydration of core coil assembly by ovening / baking in vacuum chamber.
3.	Replacement of damaged parts:
i.	Bushing
ii.	Metal part
iii.	Packing Gasket
iv	Valves
v.	Breather
vi.	Bucholoz relay

vii.	Magnetic level indicator
viii.	Oil temperature indicator
ix.	Winding Temperature indicator
x.	Oil Seals
4.	Maintenance/Serviceing of off & On Load Tap Changer for ensuring proper mechanical working including prevention of oil leakage from main oil seal & gaskets. Checking of control wiring for all indicators & relays protections system. Complete overhauling including deassembly of all mechanical parts, change main other oil seals etc. and reassembly thereafter. Retanking of core & coil assembly, fresh oil filling only under vacuum after filtration.
5.	Testing of transformer (Megger/ Ratio/ TTR/HV/ DVDF at 75 % of normal value, DGA & oil leakage test/ BDV of oil as per ISS
6.	External painting, loading of transformer at contractor's works.

2.2 Based on findings contained in preventive testing report of Power Transformers carried out by M&P Wing, overhauling of only those Power Transformers will be carried out as recommended by SE(M&P).

3. **REPLACEMENT OF PARTS:**

3.1 This will involve removal of all parts requiring replacement, thereafter overhauling and reconditioning of transformers such as replacement of HV/ LV bushings, gaskets, breather, oil level gauge, tapping switch, explosion vent, burnt HV and LV metal parts, arcing horns, bimetallic connectors, oil drain and filter valves), cover bolts, plug, cap and screws, transformer oil etc. and making connections complete in all respect for satisfactory operations after overhauling of the transformers.

Note:-All removable parts such as tapping switch, oil drain & filter valves, plugs, caps etc. shall be got deposited in Stores.

4. **DEHYDRATION OF CORE COIL ASSEMBLY:**

4.1 The insulation of the coil shall be treated with suitable insulating varnish or equivalent compound under vacuum impregnation to develop the full electrical strength of the windings. The assembled core and winding assembly shall be vacuum dried in vacuum chamber and suitably impregnated with insulating varnish before removal from the vacuum treating tank. The tenderer will specifically indicate, if he has got facilities and equipment for vacuum impregnation. Alternatively in place of vacuum impregnation, the core and coil assembly shall be fully dried out in 'Air Drying Oven' till the coils are shrunk to designed level and are completely dried, only then they will be impregnated in the transformer oil. All materials used in the insulation and assembly of the windings shall be insoluble, non catalytic and chemically inactive in the hot transformer oil and shall not soften or otherwise be adversely affected under the operating conditions.

4.2 Delta joint and lead from delta joint to bushing rod shall be made by brazing only for HV windings.

4.3 LV star point shall be formed of aluminium flat for aluminium wound transformers and copper flat for copper wound transformers of sufficient strength. Leads from winding shall be connected to the flat by brazing.

4.4 LT Aluminium / Copper lugs shall be clamped to LV bushing metal part by using nut, lock nut and washer.

4.5 The winding shall be clamped securely and placed so that they will not be displaced or deformed during short circuits. The conductors used in the coil structure shall be best suitable to the requirement and all permanent current carrying joints in the windings and the leads shall be brazed preferably and rigidly clamped.

5. **HEALTHINESS OF TRANSFORMERS:**

5.1 The transformer will be charged on no load to ascertain the healthiness of the transformer in the presence of the contractor if found in order then only overhauling work will be taken up by the contractor. The transformer oil will be drained out and transformer will be opened in the presence of the officer(s) nominated by the Superintending Engineer (O&M) and Superintending Engineer (M&P) for assessing the overhauling work to be undertaken and preparation of the joint estimate report for preventive overhauling of the transformers. The quantity of drained oil and quantity of the new transformer oil to be filled will be mentioned in the joint estimate.

5.2 In case of healthy Power Transformers, recommended by SE(M&P), and sent for overhauling to the firm for overhauling found at the time of joint estimate at firm's works that the Transformer is not in position to be overhauled then in such a situation Transformer shall be got repaired as per provision & conditions mentioned in the CRC Contract of Repair of damaged Power Transformers.

6. **IDENTIFICATION OF CORE COIL ASSEMBLY:**

6.1 In process of overhauling/ reconditioning of healthy transformers it is necessary to identify the core coil assembly of transformers. While preparing estimate of the overhauling work of transformers, the following identification details shall be marked by indelible ink on channel of core coil assembly by the inspecting officer. This will enable the Nigam to check and verify the same core coil assembly of the transformer.

Transformer Sr. No.:
TN No.:

MVA rating:
Make :

6.2 Same Inspecting officer who has prepared & put up identification mark on core coil assembly during the time of preparation of estimate for overhauling of Power Transformer shall also be nominated by the circle S.E. and who will witness at the time of tanking of core coil assembly after overhauling of Power Transformer for verification and confirmation that same core coil assembly has been tanked. The Inspecting Officer shall put the seals on tank cover diagonally.

7. **TRANSFORMER OIL:**

7.1 Fresh/new EHV Grade transformer oil for filling in the transformer(s) after overhauling/ re-conditioning shall be provided by the repairer and the quantity of new transformer oil, as may be required to be filled in, shall be as per the quantity mentioned on the name plate of the transformer(s). The make of EHV grade transformer oil shall be either APAR/SAVITA/RAJ LUBRICANT/ LUBRICHEM, MUMBAI / RAJ PETRO, MUMBAI / PANAMA PETROCHEM, ANKALESHWAR/ TASHKANT OIL, MUMBAI / Anamika Oil, Jaipur/ Columbia Petrochem Pvt.Ltd. Mumbai or any other equivalent make approved by the Nigam. The EHV grade transformer oil shall be duly filtered and tested and shall conform to the various technical parameters specified in IS:335/1993 (latest amended).

7.2 The transformer oil will invariably be filled in the overhauled transformer by the firm. The filling of the oil in the transformer shall be done in the presence of Nigam's representative.

7.3 In case oil is to be filled by firm then the transformers shall be filled in with fresh/ new EHV grade transformer oil of recommended make(s) by repairer himself as detailed in technical specification. The fresh transformer oil shall be filled in as per quantity mentioned on the transformer name plate of the original manufacturer or the actual, whichever may be less. The repairer will furnish the documentary proof in shape of invoices / bills along with test certificates in support of using fresh/ new EHV Grade transformer oil to the inspecting officer during inspection.

8. **TESTS:**

8.1 Prior to dispatch, all transformers shall be subjected to following routine tests as per various parts of IS:2026/1981 & other relevant ISS read with latest amendments as detailed below :

a) Measurement of voltage ratio.

Measurement of Insulation resistance (HV & LV) (Megger should be of 5 KV and values recorded after a lapse of 15 second and 60 second and ratio of both reading should not be more than 1:2 i.e. value of P.I. = b/a , 'b' is value measured after 60 seconds, 'a' is value measured after 15 second). IR should be above 1000 Mega Ohm after test.

- b) Ratio of IR Values recorded after a lapse of 60 seconds and 15 seconds should be more than 1.25.
- c) Separate source voltage withstand test for HV & LV at 75% of normal value.
- d) Checking of dielectric strength of transformer oil.
- e) DVDF Test.
- f) Leakage test
- g) Checking of overhauling work in confirmation to the joint inspection report and approved estimates and this technical specification
- h) Transformer Turn Ratio Test at all tap positions.
- i) Checking of manufacturer's test certificates & Invoices for new transformer oil/bushings etc.

The tenderers must have requisite testing facilities and it should be clearly indicated / mentioned in the tender offer.

- 8.2 The fresh/new transformer oil from offered lot of transformers and also from storage tank from which oil has been used shall also be tested for its dielectric strength in accordance with IS:335/1993 (latest amended upto date). The transformer oil used in repair of transformers shall comply with the requirement of this specification and it should conform to IS:335/1993 (Latest amended). The Nigam reserves the right to seal the samples of such transformer oil and get them tested at an independent laboratory at their cost to ensure its conformity to the various requirements / tests of IS:335/1993.

9. **MARKING ON TRANSFORMERS:**

- 9.1 After overhauling and reconditioning work of the transformer, contractor shall provide a non-detachable steel plate "A" of minimum 2.5mm thickness on the body of the transformer which should be continuously welded. The under mentioned details on this name plate should be deeply engraved by the contractor on the transformer(s). No transformer shall be accepted without proper fixing of repair plate on the transformer.

"A"

1. Overhauling by M/s -----
2. CRC No.JPD/SE/MM/TN- /D._____Dt._____
3. Rating _____MVA Make_____Trf.S.NO._____Store S.No.-----
4. Work order No.-----dated-----
5. Date of delivery/despatch -----
6. Delivered at stores _____
7. Date of expiry of GP-----

The repairer firm's name along with TN No. shall be punched on transformer on both sides and top of cover also.

- 9.2 After satisfactory overhauling and testing, the contractor shall have to deliver the transformers to the concerned store(s) through Nigam's transport.
- 9.3 The facilities for labour & equipments etc. for loading/ unloading and handling of transformer(s) at the contractor's works for assessment of the overhauling work and at the time of receiving transformers and at the time of despatching transformers after satisfactory overhauling and testing shall be arranged by the contractor at his cost and no extra charges shall be paid for this job. The to and fro transportation of transformers shall however be arranged by Nigam.

10. **PRICES:**

- 10.1 The tenderers are required to quote their prices as per price schedule appended hereto for various rating transformers. The prices for items indicated in price schedule shall include assessment and estimation, labour and all other charges involved in overhauling, testing, handling, loading, unloading, storage, marking and giving safe delivery of the transformers at contractor's works after satisfactory overhauling, testing and painting of transformers, filtration of transformer oil etc. The total overhauling charges of each rating of transformer will form the basis of rate contract for overhauling work. The rate contract shall not be for part of the overhauling works. However, the rate contract shall be operative for individual items of overhauling work as may be assessed at the time of estimation.
- 10.2 The price of all the items are FIRM in all respect except for labour charges and transformer oil which shall be variable without ceiling as per IEEMA E-Series.
- 10.3 The bidders are advised to quote their own individual rates. It may please be noted that if the same rate is quoted by more than one bidder, suggestive of a cartel, then such offers may not be considered by the Nigam. It may please be noted that competitive rate quoted by each bidder may be one of the main criteria for quantity to be ordered on each successful bidder.
- 10.4 (a) **EXCISE DUTY :**
- 10.4.1 Excise duty and any other government levy on spare parts (components/ oil & other accessories) for the transformers repaired, which if statutorily applicable shall be paid at actuals on production of necessary documents (excise gate pass in case of excise duty or as per the procedure laid down by the Excise Department).
- 10.4.2 The prices shall be quoted by the tenderer after accounting for the benefits of MODVAT / CENVAT/ VAT scheme and any other type of benefit as may be availed by them in future due to any modification/

insertion of new financial rules by the government shall be passed on to the Nigam.

10.4.3 However, tenderers must specify clearly the present rate of excise duty/ levies to be charged by them on the prices mentioned in their quotations. In case it is not applicable at present to the tenderer, a clear mention to this effect should be made in the tender offer. The limit of contract value may also be mentioned to the extent upto which duties will not be charged. However, variation in the excise duty due to increase in turnover shall be borne by the contractor.

10.5 SALES TAX :

10.5.1 Sales tax (central or state) on the spare parts/ components/oil/ accessories of the transformers replaced by the contractor, shall be paid extra at actual as statutorily applicable during scheduled delivery period.

10.5.2 However, tenderers must specify clearly the present rate of sales tax to be charged by them on the prices mentioned in their quotations. In case taxes are not applicable at present, a clear mention to this effect should be made in the offer.

10.5.3 Nigam is eligible for concessional rates of Sales Tax against Form-`C'/ prescribed certificate (in case of RST). The tenderers should quote the prices accordingly.

10.6 SERVICE TAX :

The service tax on labour charges of Transformer; painting charges, oil filtration charges shall be payable extra, if applicable at actual on production of documentary evidence.

11. DELIVERY:

The joint inspection for preparation of estimates shall be arranged within a week's time from the delivery of the transformers at the works of the firm and estimate(s) shall be furnished within a week there-after. The transformers shall be offered for inspection & testing within 30 days from the date of issue of the work order by the concerned Superintending Engineer of (O&M) circle or within ten days from the date of filling transformer oil if oil is supplied by NIGAM, whichever is later. The date of inspection clearance shall be treated as date of delivery of the transformer for the purpose of penalty as transformers after repair are to be lifted by the Nigam.

12. DELAY IN DELIVERY:

- 12.1 The overhauling work shall be completed within stipulated delivery period. If the contractor fails to deliver the transformers after due overhauling work within the specified delivery dates, the Superintending Engineer (O&M), shall be entitled to recover an amount (for the transformers, the repair of which have been delayed/ not repaired) @ Rs.1,500.00 per week or part thereof of each transformer subject to max. limit of Rs.15,000.00 per transformer. The Nigam will also have the right to cancel the order and forfeit the security deposit/safe custody amount and get the repair work done by some other contractor/ repairing firm at the cost, risk and responsibility of the defaulting contractor or to recover maximum penalty levied along with to & fro transportation cost in case of delay in overhauling work of the transformers beyond one month.
- 12.2 The final recovery amount shall be calculated by the concerned ACOS, and be submitted to concerned Superintending Engineer (O&M), who in turn will intimate to Accounts Officer (CPC), Jaipur Vidyut Vitran Nigam Limited, Jaipur after getting the same checked/vetted by the concerned Circle Accounts Officer.
- 12.3 The concerned ACOS will also intimate the recoveries of repairing charges of the transformers which failed during its guarantee period, to the Accounts Officer (CPC), Jaipur Vidyut Vitran Nigam Limited, Jaipur with due approval of concerned Superintending Engineer (O&M) and under information to Superintending Engineer (MM).

13. SECURITY DEPOSIT:

The successful tenderer shall have to deposit in cash or to furnish a Bank Guarantee (B.G.) **Rs.1.0 Lac for each circle** towards security deposit for faithful execution of rate contract. Alternatively the tenderer should get themselves registered in "A" Class category under vendors registration scheme with Jaipur Vidyut Vitran Nigam Limited as per clause 1.5.3 of General conditions of Contract.

14. SECURITY DEPOSIT FOR SAFE CUSTODY OF POWER TRANSFORMERS:

- 14.1 The successful tenderers shall be required to furnish Bank guarantee (BG) for Rs.10.0 (ten) lac towards safe custody of healthy transformers of assorted ratings upto 10 MVA in total in favour of SE (MM), JVVNL, Jaipur. The BG shall be from any scheduled Bank & shall be furnished on the Rajasthan Govt. non-judicial stamp paper of worth Rs.100/- on prescribed proforma. At the initial stage, the bank guarantee shall be valid for a period of minimum one year with 6 months grace period. SCBG will be released after repair of all overhauled

transformer and issue of NOC "No Objection Certificate" from concerned store/ ACOS.

- 14.2 The contractor shall not be delivered transformers from NIGAM's stores for overhauling till such time the contractor furnishes security towards safe custody of transformers as specified as above.

15. **PERFORMANCE GUARANTEE:**

- 15.1 The repairer shall obtain receipted challans from the concerned ACOS/Stores Superintendent in respect of transformers delivered in stores and shall be furnished with the bills for overhauling work directly to the Accounts Officer (CPC), JVVNL, Jaipur for payment.

- 15.2 10% amount of overhauling cost shall be with-held towards performance guarantee of the transformers accordingly 90% payment of repair cost of each lot of transformers shall be made on delivery of repaired transformers. The balance 10% payment shall be released by the Accounts Officer (CPC), Jaipur Vidyut Vitran Nigam Limited, Jaipur under intimation to the Superintending Engineer(MM), Jaipur Vidyut Vitran Nigam Limited, Jaipur and concerned circle Superintending Engineer after receipt of a certificate about satisfactory performance of transformers for each lot delivered in a particular month after expiry of the performance guarantee period (G.P.), from concerned ACOS in the prescribed proforma. The above limit of 90% & 10% will be considered as 95% and 5% respectively for the old & established contractors i.e. who have executed at least three repair rate contracts in the past awarded by RSEB or JVVNL.

16. **GUARANTEE:**

- 16.1 The bidder shall have to furnish guarantee and warranty for the satisfactory performance of transformers for 9 (nine) months from the date of despatch, for whole unit ir-respective of parts replaced during overhauling.

- 16.2 The Power Transformer overhauled by firm and if fails during guarantee period of 9 months in that case, the same transformer will be got repaired under current CRC of Power Transformers and payment to be made to the firm under CRC will be minus the labour charges & Transformer Oil filtration charges (as these components paid earlier under Rate Contract for overhauling of Power Transformers).

- 16.3 The payment already made for the material/equipment(s) already used for replacement during overhauling of the Power Transformers will not be charged again in CRC estimate by the firm.

- 16.4 For these overhauled power Transformers whose work order have been signed by circle S.E. and if fail during Guarantee Period of 9 months, a copy

of such estimate will be sent by circle S.E. to concerned Zonal Chief Engineer so that whilst issuing work order under CRC for such transformer(s) by him, deductions on account of labour component, transformer oil filtration charges and material/equipment(s) already replaced under TN-2153, will be made in their work order.

17. **PRICE FALL CLAUSE:**

17.1 The price(s) charged for the works executed and spare parts supplied under the contract by the contractor shall in no event exceed the lowest price at which the contractor execute the works and sells spare parts of identical description to any other person/ firm during the period of contract.

17.2 If at any time, during the said period, the contractor reduces the prices for such works or sells such spare parts to any other person at a price lower than the price chargeable under the contract ,the contractor shall forthwith notify such reduction of price to the Nigam and the price payable under the contract for the works executed and spare parts supplied after the date of such reduction shall stand correspondingly reduced. The contractor shall furnish certificates in the following form to ensure compliance of provisions of this clause.

" I/We certify that the works executed or spare parts supplied of description identical to the works executed or spares supplied to the Jaipur Vidyut Vitran Nigam Limited under the rate contract No.JPD/SE/MM/TN- have not been sold by me/us during the period of supply/during the period from to to any other person at the price lower than the price charged from Jaipur Vidyut Vitran Nigam Limited under rate contract."

18. **PARALLEL CONTRACTS :**

The Nigam reserves the right for entering into parallel rate contracts with other firms and to assign and specify the areas of operation of rate contracts.

19. **PAYMENTS:**

19.1 The payments shall be arranged by the Accounts Officer(CPC), JVVNL, Jaipur against presentation of bills for overhauling of transformers based on the joint inspection report and the estimates approved by the concerned Circle Superintending Engineer(O&M). The bill should be supported by receipted challans in token of receipt of power transformers by the concerned Assistant Controller of Stores/Stores Superintendent and the documents as stated above. The applicable sales tax along with surcharge there upon and any other statutory duties/ taxes at the prevailing rates for the value of the scrap shall be charged at the time of arranging payment by the Accounts Officer (CPC), JVVNL, and

shall be deposited by the later with the Govt. However, the contractor shall not get any payment in absence of completion of contractual formalities such as furnishing of bank guarantees towards security deposit and safe custody of transformer and also execution of contract agreement etc. 10% amount of the repair cost shall be with-held towards performance guarantee of the transformers. Accordingly 90% payment shall be made on delivery of transformer and balance 10% will be released after expiry of total guarantee period of the transformer. The above limit of 90% & 10% will be considered as 95% and 5% respectively for the old and established contractors who have executed at least three contracts successfully in past.

19.2 The concerned Asstt. Controller of Stores(ACOS) will furnish the satisfactory performance report to the Accounts Officer(CPC), JVVNL, Jaipur under intimation to the S.E.(O&M) / SE(MM) for each lot of the transformers delivered in a particular month, after expiry of guarantee period and will certify that there is no transformer lying failed within guarantee period pending for repair& nothing is recoverable from the firm against this lot of transformers. On the basis of such certificate from ACOS, the balance payment withheld towards performance bank guarantee will be released by the Accounts Officer(CPC), JVVNL, Jaipur for that lot.

20. **SUBMISSION OF BILLS:**

20.1 The bills for repairs of transformers shall be supported by the following documents for arranging payments:

- a) Copy of joint inspection report duly signed by all concerned including Superintending Engineer (O&M) & Accounts Officer (O&M).
- b) Approved estimate/work order of SE(O&M)
- c) Inspection and despatch clearance report of the Inspecting Officer.
- d) Receipted challans of the consignee for the receipt of transformers. At the time of verification of the challans, the concerned ACOS will record a certificate that all the scrap of removed parts of transformers declared have been deposited by the contractor.
- e) Proof of payment of excise duty and sales tax as claimed extra in the bills is required alongwith the bills for overhauled transformers.
- f) Certificates that material/spares mentioned in the bills have been actually fitted/used on the transformers.

21. **TRANSPORTATION/CARRIAGE OF TRANSFORMERS:**

Loading at site/ store and transportation of Power Transformers for overhauling and their transportation at Site/ Store after due overhauling

work shall be in the scope of Nigam's account. Similarly, the responsibility of to & fro transportation of G.P. failed transformer (overhauling G.P.) shall be on contractor's account. In case if transportation of G.P. failed overhauled Transformer is carried out by Nigam, then Freight & Insurance charges as per CRC Rate Contract TN-2005 will be charged from firm.

22. **ASSESSMENT/ ESTIMATION OF TRANSFORMERS:**

22.1 The Joint inspection of the transformers for overhauling shall be carried out by two Assistant Engineers/Executive Engineers, nominated by the circle Superintending Engineer out of the Assistant Engineer/ Executive Engineer available in his circle by rotation and authorized representative of the contractor at firm's works to assess & work out the damaged parts to be replaced and to be carried out on every individual transformer. Six copies of the estimate for repair and testing for every damaged transformer in prescribed proforma indicating its S.No., make, year of manufacture & rating, purchase order No. & date, TN No. etc. shall be prepared after joint inspection.

23. **APPROVAL OF ESTIMATE:**

23.1 The joint inspection for preparation of estimate shall be arranged within a week's time from the date of delivery of the transformers at their works and shall be approved by the concerned circle S. E. (O&M) within three days, before carrying out repairs by the firm.

23.2 The estimate(s) be vetted/checked/signed by the Circle Accounts Wing as per rates and other terms & conditions of Rate Contract and a certificate be recorded to that effect.

23.3 **Availability of budget provisions.**

23.3.1 The estimate(s) of the repairs after getting signed by the committee as above shall be submitted to the concerned circle SE(O&M) in 6 (six) copies. Three copies of the estimate duly approved shall be forwarded to the contractor by the Superintending Engineer (O&M), to enable repairer to commence the repair work on the transformers thereafter immediately.

23.3.2 Out of the 3 copies of the approved estimates received by the contractor, one copy shall be retained by him for his record and one copy along with the inspection clearance report shall be attached along with the bill(s) after satisfactory repairs and testing and shall be forwarded to the consignee/ stores officer to facilitate the verification. The remaining spare copies of approved estimate along with a copy of joint inspection report shall be handed over to the Inspecting Officer at the time of inspection and testing of the repaired transformers to facilitate checking and to ensure that the repairs have been done strictly in accordance with the approved estimates.

24. SUNDRY ITEMS:

Miscellaneous items not specified in the price schedule but are required for repairs and satisfactory operation of the transformer after repairs shall be provided by the contractor at the fixed rates given in the schedule of prices under title "SUNDRY ITEMS". These items may include Packing of bushing, rods, fresh silica gel, diaphragm of explosion vent, spindle wheels of valves, cover bolts, caps, screws, washers & insulating materials to be provided between HV & LV leg coils and interchangeable leg coils, minor repairs of tank and all other parts not specifically mentioned in price schedule including denting, welding etc. if required which are necessary for satisfactory operation of the transformer after repairs.

25. METAL PARTS:

25.1 All the metal parts shall be removed & replaced with new brass metal parts strictly conforming to relevant standards.

25.2 The dimensions of HV & LV metal parts shall be strictly conformed to relevant ISS.

26. EXTRAS:

When asked in writing by the Superintending Engineer (O&M)/(MM),JVNL to perform such extra work and supply such extra material, not covered within the scope of this specification as specified under various clauses of same, such work and material which is of most necessity shall be got complied by the contractor and its charges shall be paid extra at the rate and terms to be mutually agreed upon. This shall however, not exceed the economic limit of repairs.

27. PAINTING:

All metallic surface exposed to the weather and requiring painting shall be given one suitable priming coat after derusting by sand/ shot blast or chemical cleaning including phosphating as per IS:3618 and one coat of thermosetting powder paint or two coats of zinc chromate followed by two coats of synthetic enamel paint of oriental dark blue shed conforming to Shed No. 174 of IS:5-1961 shall be applied. The rate for one coat spray painting without primer etc shall also be quoted separately. The inside of transformers shall be given suitable priming coat after derusting and two finishing coats of heat resistant (hot oil proof) paint which may not cause any deterioration of properties of the transformer oil by chemical reaction etc.

28. DESPATCH INTIMATION:

After satisfactory overhauling work, the contractor is required to send telegraphic intimation to the consignee/stores officer under intimation to the concerned Superintending Engineer (O&M). The telegraphic intimation will contain information regarding quantity and the amount of the bill.

29. **RESPONSIBILITY FOR SAFE CUSTODY OF TRANSFORMERS DURING THE REPAIR PERIOD:**

The contractor shall be entirely responsible for the safe custody of transformers from the day damaged transformers are received by him from the consignee/stores officer upto the time of delivering back and will be fully responsible for any loss caused due to damage/ theft/ fire/floods etc.

30. **RESPONSIBILITY OF CONTRACTOR AND COMPLETENESS:**

30.1. The contractor shall be entirely responsible for the satisfactory execution of this contract in accordance with the terms of the rate contract laid down here-in.

30.2. Approval of the contract/sub-contract, test certificates or of tests carried out by the repairer or the representatives of the Nigam shall not relieve him from any of his obligations to meet out all the requirements of this specification or from the responsibilities for the satisfactory repair and working of the transformer(s) for the guarantee period.

31. **RATE CONTRACT WITHOUT PREJUDICE:**

The rate contract shall be without prejudice to any of the terms of specification or the rate contract order of the Jaipur Vidyut Vitran Nigam Limited or any rate contract of DGS&D or purchase department of any other Govt./Semi-Govt. Undertaking or of the other rate contract of the Jaipur Vidyut Vitran Nigam Limited whatsoever it might be .

32. **PERIOD OF RATE CONTRACT:**

The rate contract shall be valid initially for a period of two years from the date of award of the Rate Contract.

Nigam reserves the right to discontinue the overhauling work of Power Transformers.

33. **DISPUTES:**

33.1 All disputes, differences or questions whatsoever which may arise between the Nigam and repairer upon or in relation to or in

connection with this contract shall be deemed to have arisen at Jaipur(Rajasthan) and no court other than court at Jaipur (Rajasthan) shall have the jurisdiction to entertain or try the same.

33.2 In case of any question/disputes, differences whatsoever arise between the Nigam and contractor upon or in relation to the contract, the matter may be referred to the settlement committees constituted by NIGAM depositing requisite reference fee with Accounts Officer (MM), JVVNL, Jaipur.

IMPORTANT NOTE:-

- 1) Power Transformers below the rating of 3.15 MVA may not be overhauled..
- 2) Power Transformers already repaired twice under CRC repair contract may not be overhauled.
- 3) The Power Transformers may be overhauled only once.
- 4) Power Transformers served for more than 20 (twenty) years may not be overhauled.
- 5) Power Transformers not having Name Plate, may not be overhauled.