



TRANSFORMERS AND ELECTRICALS KERALA LTD
(A JOINT VENTURE OF GOVT. OF KERALA & NTPC LTD)
ANGAMALY SOUTH P.O., ERANAKULAM DIST - 683 573

NOTICE INVITING TENDER (NIT)

BID DOCUMENT No. : TELK/C&M/OES/TRER/366/2026

We are pleased to invite offline tender for Dismantling and shifting of existing 1 unit of BHEL make old GT, Leading & positioning, Erection, Testing & commissioning at service bay of 1 unit 250MVA, 15.75/420kV, 3Ø Generator Transformer with OCTC for M/s NTPC, Singrauli STPS, Stage -1, Uttar Pradesh strictly as per the enclosed tender documents mentioned below.

Bid Synopsis

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|------------------------------|--|
| 1. Name and Address of Owner | : Transformers and Electricals Kerala Ltd
Angamaly South, Ernakulum Dist, PIN – 683 573. |
| 2. Name of Project. | : Dismantling and shifting of existing 1 unit of BHEL make old GT, Leading & positioning, Erection, Testing & commissioning at service bay of 1 unit 250MVA, 15.75/420kV, 3Ø Generator Transformer with OCTC for M/s NTPC, Singrauli STPS, Stage -1, Uttar Pradesh |
| 3. Nearest Airport. | : Lal Bahadur Shastri International Airport, Varanasi |
| 4. Accessibility. | : Site is accessible by Road, Rail and Air. |
| 5. Cost of tender documents | : Rs. 2835.00 |
| 6. Earnest Money Deposit | : Rs. 18,900.00 |

(Vendors can avail Tender Fee & EMD exemption on producing Valid MSME certificate)

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| 7. Work Schedules | : Completion within 20 days from the date of issuing the work order and intimation from TELK. |
| 8. Tender document issuing and receiving authority | : Senior Manger (C&M)
TELK, Angamaly South P.O.
PIN- 683573,Ernakulam Dist.
Kerala, India |

9. Last date and time for submission of Bids : 04/08/2026, Time up to 06.00 PM

10. Date and Time of Techno-Commercial Bid opening : 05/08/2026, Time at 10.00 AM

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|------------------------------|---|
| 12. Security Deposit | : 5% of the total contract value, which will be released only after the expiry of the Defects Liability Period. |
| 13. Defects Liability Period | : 12 Months from the date of commissioning of the Transformer. |
| 14. Bid Validity | : 90 days, Min from the bid opening date. |





15. The following are the tender documents:

Cover 1

1. ANNEXURE 1 : Scope of Work & Special Conditions of Contract (SW& SCC) to Bid Doc No. TELK/C&M/OES/TRER/366/2026.
2. ANNEXURE 2 : General Conditions of Contract to Bid Doc No. TELK/C&M/OES/TRER/366/2026.
3. ANNEXURE 3 : Pre-Qualifying Requirements to Bid Doc. No. TELK/C&M /OES/TRER/366/2026
4. ANNEXURE 4 : Un-priced commercial terms & conditions.
5. ANNEXURE 5 : Drawing TK 109709R3
6. ANNEXURE 6 : Drawing TK 110164 R0
7. ANNEXURE 7: Field Quality Plan No. TELK/SINGRAULI/FQP/01
8. ANNEXURE 8: Rate Schedule

NOTES :

- (1) The techno-commercial and priced quotations shall be submitted either in sealed cover or emailed to telktenders@gmail.com so as to deliver before the due date. Tender reference number shall be super scribed on the sealed envelope or mentioned in the subject. Quotations emailed to any other email addresses of TELK are liable to be rejected. A message confirming participation in the tender may be emailed to contracts@telk.com.
- (2) Tender Fee and EMD shall be submitted separately either by means of DDs drawn in favour of TELK, Angamaly or by NEFT to the bank account of TELK (see annexure-5). MSME certified companies are exempted from paying the tender fee and EMD by submitting valid MSME/Udyog Adhar certificate. The demand drafts shall be enclosed along with the tender documents. The transaction details shall be submitted along with the tender documents in the case of NEFT payment.
- (3) Bids received will be subjected to techno-commercial evaluation by TELK and price bids of qualified bidders will only be opened.
- (4) Un-priced Commercial Terms & Conditions shall be submitted See Annexure-4.
- (5) All tender documents shall be submitted with signature and stamp of the bidder as a token of its acceptance.
- (6) Rate Schedule format attached as Annexure -8 and the price shall be quoted in the rate schedule.
- (7) Criteria for the financial evaluation of the tender: The net total rate quoted for Part (A) activities will only be considered for the financial evaluation of the tender. See clause 10.0 of the Annexure-1. The rates against Part-B will not be considered for the financial evaluation of the bid. However, standard market rates shall be quoted for the activities under Part-B. The net cash outflow of TELK will also be considered for the financial evaluation of the bid.

Thanking you,

Yours Faithfully,
For Transformers and Electricals Kerala Ltd.

Angamaly,
03/08/2026

Sam
Ang, 3/8/26

REVIEWED



Renjith
03/08/26

RENJITH C.S
SENIOR MANAGER (C & M)

Scope of Work and Special Conditions of Contract

1. We are pleased to invite competitive quotations for the work of Dismantling and shifting of existing 1 unit of BHEL make old GT, Leading & positioning, Erection, Testing & commissioning at service bay of 1 unit 250MVA, 15.75/420kV, 3Ø Generator Transformer with OCTC for M/s NTPC, singrauli STPS ,Stage -1,Uttar Pradesh.

2. DETAILS OF EQUIPMENTS AND PROJECTS

Sl. No.	Details of Equipment	Quantity	Project
1	250MVA, 15.75/420kV, 3Ø Generator Transformer. (Old GT) BHEL MAKE	1 No	Singrauli STPS, Stage - I (5x200 MW) NTPC, Singrauli, Uttar Pradesh
2	250MVA, 15.75/420kV, 3Ø Generator Transformer. (New GT- TELK MAKE) MO Number : 140183 – 3	1 No.	Singrauli STPS, Stage - I (5x200 MW) NTPC, Singrauli, Uttar Pradesh

3. APPROXIMATE SHIPPING WEIGHT & DIMENSIONS OF MAJOR PARTS

3.1 OLD GT

Sl. No.	Description	250 MVA
1	Shipping Weight transformer body	190T
2	Weight of Accessories	30T
3	Quantity of oil	56.8KL
4	Dimension of transformer main body	9000x3500x4500mm



Scope of Work and Special Conditions of Contract

3.2 NEW GT

Sl. No	Description	250 MVA
1	Shipping Weight transformer body	199T
2	Weight of Accessories	35T
3	Quantity of oil	60KL
4	Dimension of transformer main body	8300x4250x4700mm
5	420 KV/15.75KV, HV Bushing Dimensions	Length - 6000mm Weight - 1475Kg
6	Outer General Arrangement Drawing	TK109709R3
7	Auxiliary Lead wiring diagram	TK110164
8	Field Quality Plan	Field Quality Plan No. TELK/SINGRAULI/FQP/01

Note :- Outline General Arrangement Drawing of the transformer enclosed.

4. SCOPE OF WORK

The work shall be carried out as per NTPC approved Field quality Plan in the presence of TELK/NTPC Engineers.

The work content to be carried out by the contractor will broadly comprise of following:

Dismantling of OLD GT (BHEL Make) from the plinth and shifting this GT including complete accessories to site store which is 25 meters (approx) from the respective plinth. The dismantled transformer can be dragged from their respective plinths to the storage bay. The approximate maximum distance to storage bay from the respective plinths is 25 meters. The bidder is advised to visit the site and familiarize with the conditions before quoting.

Dragging of new 250 MVA GT from the Unloading location to the respective plinths (approx 200 meters), positioning on plinth and assembling of all accessories, vacuuming the Entire assembly, filling with the supplied oil after filtration and oil processing, cable Laying and termination of all accessories, pre-commissioning test, connecting HV bushing to overhead lines, Connection and Termination of LV bushings and commissioning of the GT. However being a retrofitting job, minor rectifications if any required on the plinth/structures for completing the work shall also be done without any additional cost implication. The bidder is advised to visit the site and familiarize with the conditions before quoting.



Scope of Work and Special Conditions of Contract

4.1) CONSTRUCTION OF TEMPORARY STORE & WATCH AND WARD:

4.1.1. The contractor will have to build a temporary store cum office at the site at an appropriate location to be provided by the customer. The store shall have the following:

- A covered room of minimum size 4 M x 4 M for office and 4Mx8M for accessories and important costly items.
- An open fenced area of about 12Mx12M with elevated area for outdoor storage. The elevation of storage area will have to carry out by either brick soiling or wooden sleepers etc. It will have to be ensured that no material is directly placed /stored on open/loose soil.

Store size may have to be increased as per requirements to accommodate accessories of the equipment being received at site. Store shall be common for all equipments at the respective site. The contractor will have to submit the actual photograph of store constructed by them at site duly certified by self & TELK/Customer representative along with the bill to claim the charges on this account.

4.1.2. The contractor will have to arrange facilities like furniture for office, electricity & water in store area. They will also have to make arrangement for watch and ward of the equipments/materials despatched to site from time to time till final takeover of the installations for operation by CUSTOMER. **Any loss, damage, theft to the materials/equipments/installations (if any) will have to be compensated by the contractor. Sufficient numbers of watchmen shall be deployed by the contractor at required locations for this purpose at his cost.**

4.2) DRAGGING OF TRANSFORMER UPTO THE PLINTH & MAINTAINING ITS DRY AIR/NITROGEN PRESSURE:

This activity will involve the following work.

4.2.1. After preparation of the foundation to be constructed by the customer, the Transformer tank will have to be dragged up to the foundation. The dragging of the Transformer shall be done on rollers from the unloaded location. The rails for dragging the main tank shall be laid along rigid and level surfaces only. Suitable arrangements shall be done to prevent sinking of rails and thereby tilting of transformer. The dragging (within 25 meters distance for OLD GT and 200 meters distance for NEW GT) may require any number of turning by any degree for proper placement on the plinth shall be quoted separately (price schedule 10.1, SI No. 2 and SI No.4) and the price for 25m and 200m dragging will be added to the main contract price for tender evaluation. "However payment will be made only for the actual distance dragged at the contract rates for the respective transformers". ***Dragging sketch showing the actual route, actual distance dragged and turning done jointly certified by M/s NTPC site engineer (with office seal) and TELK engineer shall be submitted along with the bills for claiming the payment against the work.*** Also, the bidders are advised to visit the site & evaluate the work involved before quoting.

All these activities shall be the part of contract.

4.2.2 **Dry Air Nitrogen** pressure in Transformer is to be maintained at 0.15 Kg/Cm² continuously till erection is completed.



Scope of Work and Special Conditions of Contract

4.3) RECEIPT & STORAGE OF ACCESSORIES & ERECTION WORK:

This activity will involve the following work.

- 4.3.1 Receipt and storage of all accessories of transformer including online gas monitoring system, other monitoring/control devices, oil and spares supplied against this contract in the store constructed for the purpose at site.

The contractor shall be fully responsible for all joint material verification to be carried out along with TELK & customer representative, for checking and recording the material/accessories received at site and to be stored under his control. The contractor will have to ensure inspection of all materials, accessories for any damage/shortage (if any). **Records will have to be maintained for all the material received with date of receipt, material taken out for erection etc. in registers and report to TELK periodically.** The contractor will have to submit actual photographs of stored items for verification.

- 4.3.2 Shifting of all the accessories, conservators, radiators / unit coolers, pipe works, bushings etc. to erection site, cleaning of accessories before mounting and interconnection as required.
- 4.3.3 Dew point measurement of nitrogen /dry air filled in the Transformer Tank prior to start of its erection. Internal inspection of the Transformer to find out and rectify transportation damages (if any).

After placing the transformer on the plinth, Impact recorder shall be dismantled and handed over to TELK/NTPC Personnel.

To prevent movement of the transformer during earthquakes, the clamping devices supplied shall be fixed to the transformer and foundation bolts shall be grouted to the foundation. Grouting of cooler structures shall be done after proper alignment with transformer body. Packing with suitable metal shims shall be provided before grouting.

- 4.3.4 Before start of erection, testing of turret mounted CT's, neutral CT's, bushings etc. shall be carried out to ascertain their healthiness. The tests to be carried out are as follows:

4.3.4.1 Isolation test of transformer at 2KV.

4.3.4.2 Capacitance and Tan-delta test of bushings at 10kV minimum

4.3.4.3 Insulation, Resistance, Ratio, Continuity, Winding resistance and determination of knee point on all turret and neutral CTs.

- 4.3.5 Erection of transformer, cooling pipe work, pumps, fans, radiators / unit coolers, Turrets, Bushings, Buchholz pipe work, marshalling box, PRVs. OTI, WTI, and RTD sensors etc.

- 4.3.6 Dry air from portable unit or pressurized cylinder shall be pumped in to the transformer tank throughout erection/ exposure during erection period. Contractor will have to ensure that their workmen take utmost care during erection to safeguard and avoid ingress of dust, dirt, or any foreign material in the transformer. Contractor will also have to make arrangement for the dry air unit/pressured cylinders of dry air at site for the purpose.

After completion of the whole assembly work in all respects, ratio tests shall be done before leak checking.

- 4.3.7 Carrying out pressure testing on completely assembled Transformer by filling Dry Air/Dry N₂ up to pressure of 0.2 Kg/Cm² and arresting leakages (if any) to ensure leakage free assembly. Carrying out vacuum pulling cycle in transformer tank and maintaining a vacuum of less than 0.05 Torr for a minimum period of 48 Hrs.



Scope of Work and Special Conditions of Contract

- 4.3.8 After completion of erection and vacuum cycle, Dry Air/Dry N₂ purging (**minimum 2 cycles**) shall be carried out till desired dew point of main tank is achieved as per TELK requirement. Dry Air/Nitrogen cylinders (-60°C dew point) required for purging till obtaining the dew point level shall be in the scope of the contractor.
- 4.3.9 Filling of Transformer tank with prepared and tested oil under vacuum up to desired level. The required oil tank, filter machine and other accessories shall be under the purview of the contractor. **It may also be noted that, sample testing of oil from drums (5-8 drums randomly selected from the supplied lot) shall also be required to be carried out for BDV, PPM, IFT & Tan delta before pouring into storage tank.**
- 4.3.10 Installation of on-line gas monitoring system and any other instruments (if included in supplies) shall also be included in contractor's scope and work.
- 4.3.11 Minor modifications if any required at site shall be carried out by the contractor without any extra charges.

4.4) DRYING OUT, PAINTING, CABLING & PRE-COMMISSIONING TESTS:

This activity will involve the following work:

- 4.4.1) **250 MVA Transformer (420/15.75 kV)** Before filling, oil shall be processed to obtain BDV greater than 80kV/2.5mm gap and PPM less than 5. The vacuum oil filling shall be started only after getting clearance from TELK/NTPC after attaining the specified vacuum ≤ 0.05 torr and keeping for 24 hours. Drying out of Transformer with high vacuum filter machine and maintaining temperature in tank $> 60^{\circ}\text{C}$ for not less than 72 hrs to achieve desired insulation parameters of oil. **Acceptance norms for BDV equipment is 70 KV or above and PPM value of less than 5.**

IR value has to be regularly recorded during the complete drying out process. Testing of oil sample for BDV, PPM, Tan-delta & Resistivity at 90°C and IFT of processed oil before oil filling and before stopping oil circulation shall be under scope of contractor. Testing shall be done at a reputed NABL accredited lab acceptable to TELK/customer. The report from the specified lab shall be submitted to TELK/NTPC for approval before stopping the oil circulation.

- 4.4.2) Carry out touch painting on Transformer and cooling system. Paint required as per the specification will be supplied by TELK. Transformer and the surroundings shall be cleaned and cleared to the satisfaction of TELK/NTPC. Unwanted/waste materials shall be removed.
- 4.4.3) Cabling and termination, earthing of various equipments / accessories with earth – grid, filing of foundation pockets by arranging cement and concrete where ever pockets left for foundation bolts etc.
- 4.4.4) Connection of transformer bushings to overhead lines.
- 4.4.5) Conducting pre-commissioning tests as per the NTPC approved field quality plan. The tentative list of tests to be carried out shall be as follows:
- 4.4.5.1 - Measurement of Magnetization Current at all taps positions.
 - 4.4.5.2 - Measurement of Winding Resistance at all taps positions.
 - 4.4.5.3 - Measurement of Turns ratio at all taps positions.
 - 4.4.5.4 - Measurement of Capacitance and Tan delta of Bushings.
 - 4.4.5.5 - Measurement of Capacitance and Tan delta of Windings.



Scope of Work and Special Conditions of Contract

- 4.4.5.6 - Measurement of Insulation Resistance and determination (10/1 min *value*)
- 4.4.5.7 - Isolation test for CC, CL and tank.
- 4.4.5.8 - Measurement of SFRA in three combinations for all the windings.
- 4.4.5.9 - Noise level measurement after charging.
- 4.4.5.10 - Functional tests of Accessories.

The list is indicative and it may vary marginally as per TELK norms / customer requirements (Please refer the applicable field quality plan attached also). All the tests shall be carried out by using calibrated instruments in the presence of TELK/NTPC authorized representatives and the reports shall be got signed by them. You shall prepare a comprehensive commissioning report including all pre-commissioning and commissioning tests results and forwarded to TELK/NTPC. Arranging all the instrument shall also be in the contractor's scope.

4.5) FINAL COMMISSIONING & HANDING OVER:

This activity will involve the following work:

- 4.5.1) Final connecting with system, thorough checking of compatibility and functionality of Transformer protection with customer protection system, charging of the transformer, monitoring its performance, Commissioning and handing over.
- 4.5.2) Handing over of all spares and accessories including oil to customer and obtaining completion certificate for different activities.
- 4.5.3) Final commissioning shall be done only after getting permission from the concerned authorities.
- 4.5.4) DGA of oil shall be done before commissioning of the transformer and after 24hrs of energisation.

5. FACILITIES AND OTHER REQUIREMENTS AT SITE:

The facilities available at site and other requirements to be adhered at site. While executing the work shall be as follows:

- 5.1) Contractor shall appoint a well qualified, knowledgeable and experienced Engineer/Supervisor to lead/guide Erection & Commissioning (E&C) activities at site. While day to day management of the site and supervision of the works shall be the responsibility of contractor's engineer-in-charge/authorized representative, he will report to TELK executive to assist him to discharge the overall responsibility of the execution of the project. He will have to regularly interact with TELK/NTPC and customer officials and appraise them on all aspects / developments at site.
- 5.2) The Contractor will have to appraise TELK officials on the progress of activities on site on daily basis and shall send the written progress report by email/fax to NTPC department on weekly basis or as required by them.
- 5.3) Contractor is responsible to employ required number of skilled/semi-skilled and unskilled workmen as per site requirements to complete the entire project as per schedule.



Scope of Work and Special Conditions of Contract

- 5.4) Contractor will have to ensure that the Health, Safety and Environment (HSE) requirements are clearly understood and faithfully implemented at all levels at site. They will have to ensure adequate safety precautions at site as per the various statutes and shall be entirely responsible for the complete safety of their workmen/employees at the site. Necessary Personal Protection Equipments (PPE's) (such as Helmets, Goggles, Safety Belts, Gloves, First aid box etc.) shall be provided to the worker/staff as per requirement during erection work.
- 5.5) On award of contract, site documents as mentioned below shall be collected complied, arranged by contractor from customer.
- i. Lorry receipt certificate of equipment, accessories received at site.
 - ii. Material verification and material receipt certificate.
 - iii. Site opening certificate.
 - iv. Completion certificate.
 - v. Operational acceptance certificate.
 - vi. Intimation of insurance claim on account of transit damage or erection damage must be obtained from site duly signed by customer & contractors on behalf of TELK.
 - vii. Site closing certificate.
- Further any other document required as per contract for installation services portion must also be obtained/furnished to customer for fulfillment of contractual commitment.
- 5.6) All tools & tackles including crane, good vacuum pumps, filtering machine of capacity not less than 12,000 liters/hr, storage tank, testing equipments, etc for leading/shifting of the transformer, erection, oil processing, testing and commissioning of the transformer shall be in the scope of the contractor. All the instruments to be used shall be of reputed make and shall have valid calibration certificate.
- 5.7) Supply of skilled and unskilled labourers and supervisory & administrative personnel shall be in the scope of the contractor. EPF, labour license, insurance as per NTPC's instructions shall be ensured by the contractor before commencement of the work. TELK or NTPC shall not have any liability or obligation towards these workmen. No such person engaged/employed by the contractor shall under any circumstances be treated as an employee of TELK.
- 5.8) TELK will arrange comprehensive insurance of transformer supply during erection and commissioning.
- 5.9) Construction supply at one point will be provided by TELK / Customer on chargeable basis. However the contractor will have to arrange for Energy meter and required cable to tap the power supply from the point/distribution board provided at site by customer. All further distribution points of utilization as required shall also be contractor's responsibility.
- 5.10) Potable water and water required for erection work will be provided by NTPC free of cost.
- 5.11) The contractor will have to adhere to and follow all the local rules and statutory requirements with respect to electrical inspectorate, factory inspectorate, etc of customer/site.
- 5.12) The contractor will have to adhere to and follow all the clauses as per our General Conditions of Contract (GCC) to the tender enclosed.
- 5.13) The contractors shall familiarize themselves with the site conditions before submitting their offer.



Scope of Work and Special Conditions of Contract

6. TERMS OF PAYMENT:

The payment shall be made to the contractor in parts after successful completion of activities as per the Scope of Work (Clause 4.0) mentioned above. The total quoted price of the transformer shall be divided (in percentage terms) into parts as mentioned below. The party can claim payment after successful completion of group of activities mentioned in each part in the scope of work. An activity completion certificate endorsed by TELK person shall be required to be attached with every bill to be raised. The breakup of activities and percentage payment admissible against each part as per scope of work is as follows:

Sl. No.	Details of activities as per Scope of Work	Break up of Price (in % per unit ETC rate)
6.1	Dismantling of Old GT, Dragging and placing at location specified by M/s NTPC	25%
6.2	Leading, positioning of new transformer in service bay, complete Erection including oil processing, laying and termination of cable and other works as per Cl 4.0, 4.1,4.2,4.3,4.4 and 4.5 of the tender.	50%
6.3	Pre-commissioning tests, interconnections with existing system, successful commissioning and handing over of new transformer	15%
6.4	Three months after successful commissioning of the transformer	10%
Total		100%

Note: *The prices shall remain FIRM and valid till the completion of defect liability period (see Cl.7.5). No escalation in price at any point will be entertained in any circumstances after the submission of bids.*

“Before releasing the final two installments of payments, the contractor has to give an undertaking that all statutory payments in respect of his employees are made and necessary documents for evidence have to be furnished”.

All the payment shall be made as per TELK norms and is subject to deduction of statutory duties and taxes as applicable at source. Service Tax will be paid extra subject to production of documentary evidence of remittance.



Scope of Work and Special Conditions of Contract

7. SCHEDULE OF WORK (COMPLETION PERIOD):

- 7.1) The work at site shall commence immediately after the receipt of the transformer at site and joint verification by TELK, NTPC and your team.
The whole work in all respects shall be completed within 20 days from our intimation and accordingly a bar chart shall be prepared prior to start the job showing the work with dates and estimated completion time of various activities.
- 7.2) The final work schedule may vary depending on the prevalent site conditioning and customer requirements and shall be revised accordingly.
- 7.3) Penalty @ 3% per week subject to maximum of 10% of the contract price shall be levied for the delay on account of non-mobilization of activities on contractor's part.
- 7.4) The bidder may note that no time over run charges shall be paid in the event the completion period gets extended by a period up to 1 year from the date of scheduled completion as per work order. However in case, the work is not completed even after the extended time period of 1 year, the contract is renewable on mutually agreed terms.
- 7.5) Defect liability period will be applicable for a period of 12 month from the date of commissioning of the equipment. During the Defects Liability Period, the contractor shall at his own cost and initiative, correct, repair and /or rectify any and all defects of the work that may arise due to poor/defective workmanship. Mobilization of T & P including crane, filter m/c etc. for attending erection deficiencies, will be contractor's responsibility. In the event of failure to do so, TELK may proceed to have such rectifications made by the others at the contractor's risk and cost.

8. EARNEST MONEY DEPOSIT (EMD)

The earnest money is to be paid by each tenderer to ensure that the Tenderer does not refuse to execute the work after its awarded to him.

- 8.1) EMD for this tender is Rs. 18,900.00
- 8.2) EMD is to be paid online only.
- 8.3) EMD of the successful Tenderer shall be forfeited if
 - i. After opening the tender, the Tenderer revokes his tender within the validity period or increases his earlier quoted rates.
 - ii. The Tenderers does not commence the work within the period as per LOI/Contract.
- 8.4) EMD given by all unsuccessful tenders shall be refunded normally within one month after award of work to the successful bidder.
- 8.5) EMD shall not carry any interest.
- 8.6) EMD of the successful Bidder shall be converted and adjusted against the Security deposit and shall be refunded after the expiry of the warranty period /Defects liability period as applicable.

9. SECURITY DEPOSIT (SD)

- 9.1) The security deposit for the contract shall be 5 % contract value. This can be deposited in any form as mentioned in Clause 9.2 below before the start of the work.
- 9.2) The Security Deposit may be furnished in any one of the following forms:



Scope of Work and Special Conditions of Contract

- i. Pay order, Demand Draft in favour of TELK.
- ii. Securities available from Post Offices such as National Savings Certificates, Kisan Vikas Patras, etc. (Certificates should be held in the name of the Contactor furnishing the security and duly pledged in favour of TELK and discharged at the back).
- iii. Bank Guarantee submitted in TELK Format issued by Scheduled Banks/public financial institution as defined in the Companies Act.
- iv. Fixed Deposit Receipt issued by Scheduled Banks/ Public Financial Institutions as defined in the Companies Act. The FDR should be in the name of the contractor, with lein marked to TELK, Angamaly.
- v. Security Deposit can also be recovered at the rate of 5% from the running bills. However, in such a cases at least 50% of the Security Deposit should have been deposited before the start of the work and balance 50% may be recovered from the running bills.
- vi. The Security Deposit shall not carry any interest.

Note : Acceptance of Security against Sl. No (iii) and (iv) above will be subjected to hypothecation or endorsement on the documents in favour of TELK. However, TELK will not be liable or responsible for the collection of interest or renewal of the documents or in any other connected therewith.

9.3) Submission of Security Deposit and contract agreement shall be completed within 15 days from the date of work order. Non-compliance within this period may attract penalty.

9.4) Security Deposit shall be refunded to the contractor only after completion of defects liability period. The Security Deposit shall not carry any interest.

10. CONTRACT PRICE:

The applicable price admissible shall be as follows

10.1) PRICE SCHEDULE:

PART A

Sl. No.	Description	Quantity	Unit	Rate (Rs)	Total (Rs)
1.0	Dismantling of OLD GT and its accessories from service bay	1	Lumpsum per transformer		
2.0	Dragging on rails / sleeper & placement on plinth for Old GT from service bay to storage bay	25	Price per meter		



Scope of Work and Special Conditions of Contract

3.0	Receipt, dragging, handling, storage, erection, oil processing, commissioning and handing over the transformer. Price for 1 No. 250MVA, 15.75/420kV, 3-Ph, GT at Singrauli Site (Scope of Work as per Clause 4.1 to 4.5 of tender)	1	Lump sum per transformer		
4.0	Dragging on rails / sleeper & placement on plinth of 250MVA transformer up to 200m dragging	200	Price per meter		
Total in figures (Rs.)					
Total in Words :					

PART B

1.0	OPTIONAL ACTIVITIES: Additional dragging of transformer on rail / sleeper either due to distance being more than that specified in scope of work	Price per meter	
2.0	Additional Turning of transformer by 180 ⁰ for dragging / placement of plinth	Lump Sum	
3.0	To carryout additional drying of transformer beyond the mandatory cycles) by N2 purging & heating under N2 filled condition. Supply of N2 cylinders having required dew point and heaters shall be contractor scope	Price / Cycle	



Scope of Work and Special Conditions of Contract

4.0	EXTRA HIRE CHARGES Labour charges for repair / rectification / modification / additional work	Rate per day	
5.0	Hire charges for providing major facilities by contractor if needed for additional / extra work. Long boom Cranes suitable for Bushing Erection	Per day	
6.0	Derrick	Per day	
7.0	High Vacuum Filter Machine For 12000 lph capacity filter machine	Per day	
8.0	For 6000 lph capacity filter machine	Per day	
9.0	Oil Tankers For 10kl capacity	Per day	
10.0	Oil Tankers For 15kl capacity	Per day	

11.0) ENGINEER IN CHARGE OF THE CONTRACT

Shri. Ranjan A C .
 Senior Manager (Assembly, O&D & OES)
 TELK, Angamaly
 Mob No. 9388167020.
 email : assemblyshoptelk@gmail.com



GENERAL CONDITIONS OF CONTRACT

1. SITE CONDITIONS, DRAWINGS, STANDARDS.

- 1.1 The contractor shall inspect and examine the site and its surroundings and satisfy themselves as to the nature and scope of the work involved, the nature of site and obtain in general all necessary information as to risks, contingencies and other circumstances which may influence or affect the work. The contractor shall have full knowledge of the site and no extra charges consequent on any misunderstandings or otherwise will be allowed.
- 1.2 The contractor shall satisfy themselves about the correctness and applicability of the location plans and detailed drawings before adopting them for erection. All drawings and schedule of quantities shall be made up to date incorporating actual execution particulars.
- 1.3 Work is to be carried out as per the instructions of our site engineer and to the satisfaction of our ultimate customer. It shall be Contractor's responsibility to obtain approval of statutory authorities wherever applicable for conducting these work and any fees or levies payable shall be paid by the contractor. Failure on this account and consequent levies or penalties if any will be recovered from the contractor.

2. LABOUR

- 2.1 Contractor shall deploy the required skilled / semiskilled / unskilled man power to meet the work load at site. The required augmentation / retrenchment of man power shall be done in consultation with our site in charge.
- 2.2 Accommodation and local transport for your Supervisors / workmen will have to be arranged by you without any extra cost to us.
- 2.3 Contractor shall submit to our site in charge the daily attendance report of his workmen.
- 2.4 You shall furnish to our Site Engineer the particulars of all the workmen viz. Name, designation, and permanent address etc. before the start of the work.
- 2.5 The statutory liability on account of ESI, PF etc. are to be borne by the contractor. If any accident on injury is sustained by any worker, the contractor should immediately inform us and concerned insurance labour authorities. All initial incidentals medical expenses shall be met by the contractor and the eligible compensation through insurance company will be made available on and only after the settlement of the claim.
- 2.6 It will be the responsibility of the contractor to get the desired output and quality from his work men by providing adequate supervision. Contractor shall maintain absolute discipline among his workmen during and outside working time. Those who are found to be indulging in any malpractice, jeopardizing the working atmosphere at the site shall be terminated immediately.
- 2.7 Contractor shall see that all the statutory rules and regulations applicable to the place of work including the payment of minimum wages, leave, bonus, overtime, terminal benefits and other statutory requirements are strictly adhered to.
- 2.8 All records as required by relevant labour act / regulations shall be settled by the Contractor. In case TELK have to incur expenses towards settlement of any of contractor's liabilities, this cost shall be debited to the Contractor and recovered from his running bills and / or Retention Deposit / Security Deposit / other dues.



GENERAL CONDITIONS OF CONTRACT

- 2.9 The skilled labour engaged by the Contractor should be properly qualified with adequate previous experience in the specific skilled job. In case our Site Engineer is not satisfied with the workmanship of the particular skilled worker, you shall replace him with suitable alternate man power.

3. PRICE & RATES

Firm prices and rates shall be quoted as per the schedule in the scope of work. The Contractor shall not request for revision of rates tendered by him under any circumstances, at any stage either during execution or when final claims are settled.

4. GUARANTEE

The Contractor shall guarantee satisfactory performance of the installations for a period of 12 Months from the date of commissioning for any failure due to bad workmanship on the part of Contractor. The Contractor shall also guarantee for final acceptance of the works by-the ultimate customer.

5. ACCEPTANCE OF WORK

After completion of work, the contractor shall satisfy and advise us in writing that the work are complete in all respects and ready for inspection. After the joint inspection by the contractor and our Engineer a provisional inspection certificate will be issued and submitted to our ultimate customer for inspection and acceptance. Modifications if any required, will have to be carried out by the Contractor at his own cost. If at the time of actual equipment erection any alterations/ rectifications are required or insisted by our ultimate Customer, the same are to be carried out by the contractor free of cost.

6. PENALTY

Penalty @ 3% per week subject to maximum of 10% of the contract price shall be levied for the delay on account of non-mobilization of activities on contractor's part.

7. TOOLS AND CONSUMABLES

Any tools, equipments (crane, forklift, derrick, pipe bending tools, crimping tools, pulley block, consumables etc.) and safety gadgets necessary for executing the contract shall be arranged by the contractor.

8. WATER / ELECTRICITY

Construction supply at one point will be provided by TELK / Customer on chargeable basis. However the contractor will have to arrange for Energy meter and required cable to tap the power supply from the point/distribution board provided at site by customer. All further distribution points of utilization as required shall also be contractor's responsibility.

Potable water and water required for erection work will be provided by NTPC free of cost.

9. EXTRA WORK & IDLE LABOUR CHARGES

- 9.1 Minor rectification work will not be considered as extra work.

- 9.2 Re-work of job because of rough handling, bad workmanship and inadequate Preservation etc. shall not be treated as extra work and should be done at your cost.



GENERAL CONDITIONS OF CONTRACT

- 9.3 If it is found that the contractor has done *any* work or portion of the work not in line with the stipulated specifications/drawings/our instructions, the contractor shall rectify the same at his own cost. Cost of consumables/ materials wanted for such reworks will be recovered from your bills.
- 9.4 However in case of "major modification" which are required to be on the equipment, for no fault of the contractor, contractor shall be compensated on the basis of man day rates quoted in the offer/ mutually discussed rate. It is the responsibility of the Contractor to get the prior approval for such "major modification work from us before taking up such works. Contractor shall also get the estimates and the actual time sheets certified by our Engineer and these will be the basis for processing bill for "major modification work".
- 9.5 No idle labour charges or overstay compensation will be paid on any account.
- 9.6 In case any extra work arises, the Contractor will have to get the man hour sheets signed daily by our Site Engineer without which no claim will be entertained.

10. CANCELLATION OF ORDER

TELK reserves the right to terminate the contract in whole, any individual work or part of the work involved in the contract without assigning any reasons to you under the following conditions.

- 10.1 If, in our opinion, the work of the contractor is not satisfactory with respect to quality, speed of execution etc.
- 10.2 Our customer does not accept you as our sub contractor.
- 10.3 If we decide to close our site activities before completion of work.
- 10.4 In the event of any default to comply with any provision of the work order to breach of conditions of the contract by the contractor. Under the above conditions we reserve the right to appoint a new contractor or get the work done directly at your risk and cost. In that case you will be paid for the work carried out by you as duly certified by our site engineer on unit rate basis and no other compensation will be paid to you on this account.

11. STATUTORY REQUIREMENTS

11.1 Workmen compensation Insurance

The workers engaged in the work should be covered as per ESI act. The contractor shall furnish to our site engineer the particulars of all the workmen engaged viz name, designation, permanent address, wage rate etc. and do the needful to have all such persons covered and registered under the employees State insurance act. The contractor shall deduct the employees contribution from any wages paid or payable to his employees / worker and pay such employee's contribution along with employer's contribution payable by the contractor forthwith to the ESI Corporation as per ESI/PF act and documentary evidence for having paid by the contractor, such amounts shall be deducted from the contractor's bills at the rates applicable and paid by the company to the ESI authorities. Any damages, interest or liability arising out of the delay in deduction or payment of any contribution shall also be paid by the contractor to the company.



GENERAL CONDITIONS OF CONTRACT

11.2 Insurance for materials

The Contractor shall arrange insurance against loss / damage / theft for his tools, tackles and other properties at his own cost and we will not be responsible for any such loss / damage or accident and the contractor will not have any claim with us.

11.3 Safety

Contractor should follow safety rules stipulated for site work. Necessary safety equipments such as safety belt, helmet etc. for your workmen should be arranged by you.

11.4 Registration

The Contractor shall familiarize himself with the contract labour (Rules and abolitions) act applicable in the state and the rates there under and should obtain the license for engaging the labour as per the laborers minimum wages as per above act and all requirements of labour laws have to be complied with by the contractor without any liability for TELK. Any claim on this account paid by us will be recovered from you.

11.5 Electrical contractors license

The Contractor shall possess a valid and competent A-Grade electrical contractor's license issued by the relevant state electricity licensing board for carrying out similar Electrical installation works or shall have a tie up with a contractor having the necessary license and should have sufficient experience in erection.

12. GENERAL CONDITIONS

12.1 Contractor shall forthwith make good without compensation, any damage, rectification, modification to the works/surrounding equipments noted, before the final completion and acceptance of the whole work.

12.2 In respect of observations of local rules, administrative orders, working hours and the like, contractor and his personnel shall co-operate with TELK.

12.3 Contractor shall station a responsible qualified and experienced supervisor at site for supervision of his man power and the work shall be carried out in line with the directions / schedules of our site engineer under the direct supervision of your supervisor.

12.4 We will not be responsible or liable for any dispute or settlement between the contractor and his workmen or labour department.

12.5 Subcontracting of the job in part or as a whole is not allowed.

12.6 Considering the urgency of the work or for any other reason some portion of the work indicated in the work schedule may be carried out by us or by some agency appointed by us. In that case the contractor would be paid for the Work carried out by him on unit basis and no other compensation on this account would be paid to the contractor.

12.7 Materials will be issued to you from customer's stores against receipts and you should keep upto date records of the materials stored / used / balanced. Our site engineer or his representative will have the rights to check such records and stock position as and when required by us. Records shall be kept by you as per the direction of our site engineer.



GENERAL CONDITIONS OF CONTRACT

- 12.8 The contractor shall mobilize necessary experienced supervisors and workmen urgently to commence work. The contractor shall deploy adequate man power and increase if found necessary in consultation with site engineer. The work shall be completed as per our delivery requirement.
- 12.9 Any legal disputes arising out of this contract shall be settled within the courts having jurisdiction over Kerala.
- 12.10 We reserve the right to execute the contract from elsewhere at your risk and cost in the event failure to execute the contract within the stipulated time.
- 12.11 The contractor shall prepare and finalize the Contract Documents for signing of the formal Contract Agreement and shall enter into the Contract Agreement with us on non-judicial stamp paper of appropriate value within **15 days** from the date of Notification of Award.
- 12.12 In case of any differences/discrepancy between the clauses in general conditions of contract and the scope of work and special conditions of contract, the terms & conditions of the scope of work and special conditions of contract will prevail.



ANNEXURE 3

Pre-Qualifying Requirements		
Tender Ref No. :TELK/C&M/OES/TRER/366/2026		
Sl.No.	Requirements	Reply/Remarks by Bidders
1	The bidders shall have previous experience in executing erection, testing and commissioning job of atleast 1 No. 400 kV voltage class/higher voltage rating transformer in state electricity boards or any other utilities. The copy of work order and work completion certificate issued by the firm shall be attached along with the bids.	Yes/No (supporting documents shall be furnished)
2	The bidders shall furnish the list of machineries tools & tackles and testing equipments owned by him. In case the bidder do not own any of the major machinery / equipments, he shall furnish a declaration along with the bid in their letter head stating that the " <u>All the required machineries/equipments/tools & tackles required for satisfactory completion of the erection, oil processing, testing and commissioning of transformers will be arranged on site at his cost, without causing any delay in completion of work.</u> "	Yes/No (supporting documents shall be furnished)
NOTES : (1) Supporting documents for the above claims shall be furnished. (2) The bids received will be subjected to techno-commercial evaluation by TELK and price bids of qualified bidders will only be opened.		



Authorized signatory with seal

Un-Priced Commercial Terms & Conditions to Bid Doc. No. TELK/C&M/OES/TRER/366/2026		
Sl.No.	Particulars	Reply/Remarks by Bidders
1	Submission of Tender Fee through e-tender portal	Yes/No
2	Submission of Earnest Money Deposit through e-tender portal	Yes/No
3	MSME/Udyog Adhar No. and expiry date along with a copy of the certificate if applicable	
4	Applicable GST (%)	
5	GST registration with valid certificate	Yes/No
6	Submission of all Tender Documents duly Signed & Stamped for its acceptance	Yes/No
7	Bid shall be valid for 90 days from the date of opening of tender.	Yes/No
8	Submission of Annexure-3 along with supporting documents for fulfilling the Pre-Qualifying Requirements	Yes/No
9	Quoted rates shall be firm and valid until completion of the contract in the event of placing the order. May be confirmed here.	Yes/No
10	Acceptance of Technical Specification /All other Terms & Conditions	Yes/No
11	Acceptance of the Warranty/Defect liability period clauses as per tender conditions.	Yes/No
12	Deviations/ Remarks from the specifications/terms & conditions if any shall be submitted as a separate document along with Cover -1	Yes/No
13	Minimum time schedule for mobilizing the site from the date of intimation from TELK.	 days
14	Maximum time schedule for completing the work from the date of intimation from TELK	 days
15	Acceptance of the specified payment terms as per Clause No.6 of Annexure 1	Yes/No
16	Other relevant information (if any)	
17	Contact details of the bidder (Name, addresss, phone No. mobile, email etc)	





UNTANKING HEIGHT FOR UPPER TANK

1 RAIN

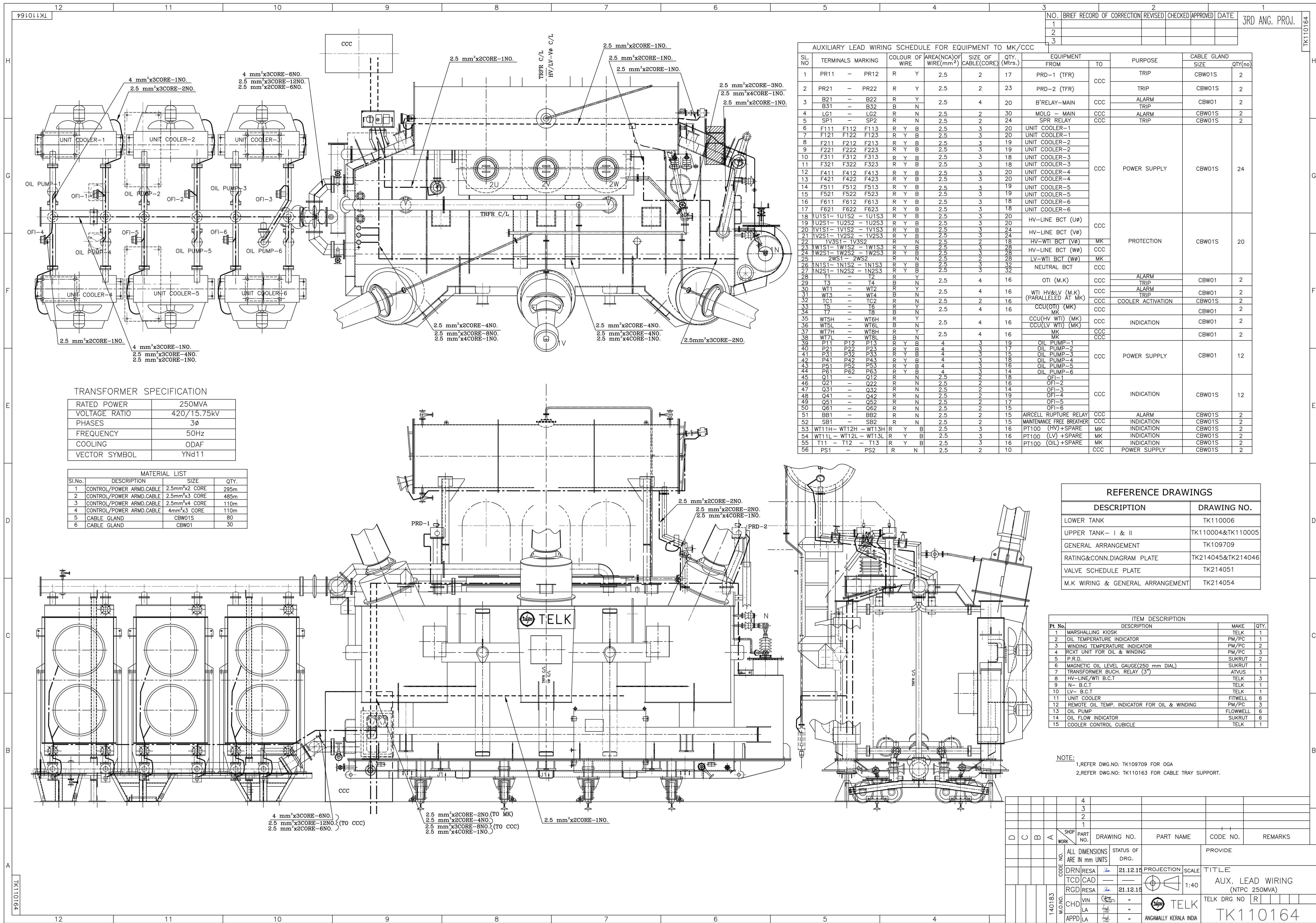
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RATED POWER	250MVA
VOLTAGE RATIO	420/15.75kV
PHASES	3 ϕ
FREQUENCY	50Hz
COOLING	ODAF
VECTOR SYMBOL	YNd11

SL NO	DESCRIPTION	APPROX.
1	INTERNAL BODY(CORE&COIL)	164,800kg
2	VOLUME OF OIL IN LITRES	60,000L
3	TANK AND FITTINGS	50,000
4	UNTANKING WEIGHT	21,000
5	TRANSPORTATION WEIGHT	199,000
6	TOTAL WEIGHT	269,000
7	OVER ALL DIMENSION(LXBXH) - 16550X7000X9115	

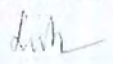
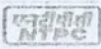
420/15.75kV-250MVA TRANSFORMER

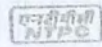
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SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 1 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
1.00	ON RECEIPT AT SITE									
1.01	Verification of Main body and accessories for any visible damage/ short supply Check and record condition of each package		B, C	Visual	100%	Packing list / DC	No damage / Short supply	Check List		If any shortage or minor damage, inform TELK. If damage is severe, call TELK's representative.
1.02	Check for gas pressure inside main body and in gas cylinder if transported N ₂ filled	Pressure gauge and thermometer	B, C	Measurement	Once	O&M Manual	Positive pressure at ambient temperature	Check List		If no positive pressure call TELK's representative immediately and dew point measurement to be done.
1.03	Check for transformer oil if transformer is received oil filled		B, C	Measurement	Sample	IS:1866	IS:1866	Check List		--
1.04	Switch off impact recorder. Record / verify the reading/output of impact recorder.		B, C	Physical	Once	Transportation drawing/ O&M Manual	Transportation drawing/ O&M Manual	Check List		--
1.05	Check for Transformer oil Barrels		B, C	Visual	100%	O&M Manual	No damage/ leakage, seals intact	Check List		--
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A-CRITICAL, B-MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		FOR NTPC USE		REVIEWED BY		APPROVAL SEAL
SIGNATURE		SIGNATURE						APPROVED BY		APPROVAL SEAL
FORMAT NO.: QS-01-QAI-P-09/F2-R1								DOC NO. 1110-201-QVE-G-069		REV:2
								ENG.G.DIV./ QA & I		

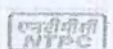
SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 2 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values
1	2	3	4	5	6	7	8	9	10
2.00	<u>ON STORAGE AT SITE</u>								
2.01	Check for storage of main body (Transformer)		B,C	Physical	Once	O&M Manual	Hard level ground free from water logging and in unpolluted area	Check List	If permanent location is not ready ensure that temporary storage is done in a suitable location. Suitable storage area shall be provided by customer.
2.02	Check that the transformer is kept on sleepers / rollers facilitating free flow of air underneath		B,C	Physical	Once	O&M Manual	Normal air flow shall be ensured.	Check List	
2.03	Check gas pressure of main body (Transformer)	Pressure gauge and thermometer	B,C	Physical	weekly	O&M Manual	Positive pressure at ambient temperature.	Check List	Storage for more than 3 months in gas filled condition is not recommended
2.04	Check for storage of accessories	Physical Condition	B,C	Visual	100%	O&M Manual	Proper storage/ No physical damage	Check List	
2.04.1	Thermometer, flow indicator etc. Check that these are stored without damage to fragile parts.		B,C	Visual	100%	O&M Manual	Proper storage/ No physical damage	Check List	
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		LEGEND * RECORDS IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		DOC NO. 1110-201-QVE-G-069		REV:2	
SIGNATURE		SIGNATURE		FOR NTPC USE		REVIEWED BY		APPROVED BY	
FORMAT NO.: QS-01-QAI-P-09/F2-R1								APPROVAL SEAL	
								ENGG.DIV./ QA & I	

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 3 of 15		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-2010-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
2.04.2	Loose items: Check that loose items are stored in closed place.	---	B,C	Visual	100%	O&M Manual	Proper storage/ No physical damage	Check List		---
2.04.3	Oil level gauge, Buchholz relay, silicagel breather, oil level indicators, Gas relay, Drying agents, terminal boxes, Connection boxes, etc.: Check that these are stored indoor without damage to fragile parts.	---	B,C	Visual	100%		Proper storage/ No physical damage	Check List		---
2.04.4	Supports and fabricated parts: Check that these are not placed directly on ground but kept on wooden battens /planks.	---	B,C	Visual	100%	O&M Manual	Proper storage/ No physical damage	Check List		---
2.04.5	Oil drums: Check that the drums are stored in protected area. Check oil drums for any leakage and tampering. The drums should be stored in horizontal (9-3 O'clock position) without contact with water and with screw cap at the bottom.	---	B,C	Visual	100%	O&M Manual	Proper storage/ Seals intact, no leakage	Check List		---
MANUFACTURER/ SUB-SUPPLIER SIGNATURE						MAIN SUPPLIER 		LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FOA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		
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SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 4 of 19							
Sl.No	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values	
1	2	3	4	5	6	7	8	9	D*	10	
3.00 ERECTION CHECKS											
3.01 Before commencement of erection.											
3.01.1	Physical inspection of transformer main body after transportation upto transformer yard area for erection		A,C	Physical verification	Once	O&M Manual	No physical damage	Check List			
3.01.2	Document check for availability of all relevant drawings, shipping list and protocols.		C	Physical verification	Once	O&M Manual	Complete set of drawings, Instruction Manual	Check List			
3.01.3	Site preparation-check that the transformer yard is properly leveled and foundation is ready		C	Physical verification	Once	Foundation drawing	Foundation drawing	Check List			
3.01.4	Check that rails are leveled and exact location of roller assembly is marked in permanent location of the transformer where applicable		C	Physical	Once	OGA / Foundation drawing	OGA / Foundation drawing	Check List			
LEGEND: * RECORDS IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS#A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)								DOC NO. 1110-201-QVE-G-069		REV:2	
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		FOR NTPC USE		REVIEWED BY		APPROVED BY		APPROVAL SEAL	
SIGNATURE										ENGG.DIV./ QA & I	
FORMAT NO.: QS-01-QAI-P-09/F2-R1											

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SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 5 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-2010-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
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1	2	3	4	5	6	7	8	9	D*	10
3.01.5	Check for availability of 1. Oil filtration plant of adequate capacity. Ensure the use of new filter in the machine. 2. Oil storage tank (of adequate capacity with oil sampling / draining / filtering facility). 3. Transformer evacuation pump alongwith pipes, flexible, etc	--	C	Physical	Once	O&M Manual	Capacity as per O&M Manual. Oil storage tank should be clean and free from rust.	Check List		--
3.01.5	Check for facilities for operation of filter machine such as: a. Proper power source b. Cable of adequate capacity and length. c. Hose pipe of adequate capacity and suitable ends.	--	C	Physical	Once	O&M Manual	O&M Manual	Check List		Power and water shall be provided by customer.
3.01.7	Check for availability of suitable and adequate quantity of oil	--	C	Physical verification, quantity check	Once	Rating & Diagram Plate /Packing List	Rating & Diagram Plate /Packing List	Check List		--
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		LEGEND * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A&B CHECK SHALL BE NTPC CHP STAGE)				DOC NO. 1110-201-QVE-G-069		REV:2
SIGNATURE				FOR NTPC USE		REVIEWED BY		APPROVED BY		APPROVAL SEAL
FORMAT NO.: QS-01-QAI-P-09/F2-R1		ENGG.DIV./ QA & I								

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS				
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 6 of 9		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values	
1	2	3	4	5	6	7	8	9	10	
3.01.8	Check that the pre-erection survey has been carried out to ensure that transformer yard is ready in all respects and to verify and achieve the position of various equipments to be connected, level of floor/paths, position of foundation bolts, pockets and cutouts, alignment of cable trenches etc.	-	C	Physical	100%	Foundation Drawing / layout drawing in line with specification	Foundation Drawing / layout drawing in line with specification	Check List	Civil foundation shall be done by customer	
3.01.9	Check that proper tools and tackles are available/used for transporting various items to erection site including jacking pad for carrying out erection.	-	C	Physical	100%	O&M Manual	O&M Manual	Check List	-	
3.01.10	Check that all items and accessories are inspected for damage.	-	B,C	Physical	100%	Free from damage	Free from damage	Check List	-	
3.01.11	Check that all items and accessories to be mounted are cleaned properly	-	C	Physical	100%	Should be clean	Should be clean	Check List	-	
LEGEND * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A&B CHECK SHALL BE NTPC CHP STAGE)						 DOC NO. 1110-201-QVE-G-069		REV:2		
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		FOR NTPC USE		REVIEWED BY		APPROVED BY		APPROVAL SEAL
SIGNATURE										
FORMAT NO.: QS-01-QAI-P-09/F2-R1						ENGG.DIV./ QA & I				

		SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		FIELD QUALITY PLAN ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT			PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
3.01.12	Check all bushings are free from physical damage and have oil level upto mark. Check all pipes are free from rust and dust, otherwise oil flushing to be done.	---	B, C	Physical	100%	Free from damage. Oil level shall be upto marking in the gauge	Free from damage. Oil level shall be upto marking in the gauge	Check List		---
3.01.13	Checking of readiness of fire protection system as provided	---	B, C	Physical	Once	---	---	Check List		---
3.01.14	Check all condenser bushings for IR value & Capacitance/tan delta test in vertical position at 10kV	2kV insulation tester, C & Tanδ bridge	A/B, C	Measurement	100%	Comparable with factory test value	Comparable with factory test value	Check List		NOTE: Verify that tan delta tap is set back to normal earthed position and record the same
3.01.15	Continuity check and IR value between core - core clamp, core clamp - tank and core-tank	500V insulation tester	A/B, C	Measurement	Once	No continuity. IR value ≥ 5MΩ	No continuity. IR value ≥ 5MΩ	Check List		---
3.01.16	Ensure new gaskets during final erection of turret, bushings and piping	---	C	Physical	Once	---	---	Check List		---
3.01.17	Check that transformer is jacked up using only the jacking lugs provided for the purpose and that no other parts are used for this purpose	---	C	Physical	Once	---	---	Check List		---
MANUFACTURER/ SUB-SUPPLIER SIGNATURE 						MAIN SUPPLIER SIGNATURE 		LEGEND * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		
FORMAT NO.: QS-01-QAI-P-09/F2-R1								DOC NO. 1110-201-QVE-G-069		
						FOR NTPC USE		REV:2		
						REVIEWED BY		APPROVED BY		APPROVAL SEAL ENGG.DIV./ QA & I

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
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1	2	3	4	5	6	7	8	9	10
3.01.18	Check that rollers(wherever applicable) are greased properly before assembling under the transformer tank.	--	C	Physical	100%	Roller assembly drawing	Roller assembly drawing and free movement of rollers	Check List	--
3.01.19	Check that oil is filtered properly and attained the values as specified for prior to filling in main tank	BDV, PPM, Tan δ and IFT	A/B/C	Measurement	Sample	NTPC spec	BDV = 70kV/min for ≥220kV class & 60kV for <220kV. PPM = 10max Tan δ at 90°C = 0.005max. IFT = 0.04 N/m min.	Check List	--
3.02	During erection								
3.02.01	Complete pre-erection check list	--	C	--	--	--	--	Check List	--
3.02.02	Visual inspection of internal wiring of MB	--	C	Visual	--	Schematic/ wiring diagram	Schematic/ wiring diagram	Check List	--
3.02.03	Check for any damage of CTs and check cleanliness	--	B/C	Visual	100%	No damage	No damage	Check List	--
3.02.04	Check that CT secondary leads are all intact and kept chorted until respective leads are connected	--	C	Physical	100%	--	--	Check List	--
3.02.05	CT test	Continuity check, IR value and polarity	B/C	Physical/ Measurement	100%	Continuity -OK, Polarity-OK, IR value>1000MO	Continuity -OK, Polarity-OK, IR value>1000MO	Check List	--
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FORMAT NO.: QS-01-QAI-P-09/F2-R1

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 9 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-2010-9-FC-CQA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values	
1	2	3	4	5	6	7	8	9	10	
3.02 06	Functions of hand operated air release valve if applicable	--	C	Physical	100%	--	--	Check List	--	
3.02 07	Ensure proper lubrication of Tap changer, oil pump bearing and cooling fan	--	C	Physical	Once	--	--	Check List	--	
3.02 08	Adjustment of C/L of transformer and alignment with cooler.	--	C	Measurement	100%	OGA / Foundation drawing	OGA / Foundation drawing	Check List	--	
3.02 09	Internal body inspection after draining oil and opening covers for wedging of core & coil, Displacement of internal body, insulation damage or foreign materials on coils	--	A/B/C	Physical	Once	O&M Manual	Proper wedging of core&coil, No displacement of internal body, No insulation damage or foreign materials on coils.	Check List	--	
3.02 10	Check for Lead connection, insulation, shield for HV Bushing.	--	C	Physical	--	O&M Manual/ Internal Assembly drawing	Clearances and lead connections/ insulations as per Internal Assembly drawing, Connections shall be properly tightened.	Check List	--	

MANUFACTURER/ SUB-SUPPLIER

SIGNATURE

FORMAT NO.: QS-01-QAI-P-09/F2-R1

MAIN SUPPLIER

[Signature]

LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A&B CHECK SHALL BE NTPC CHP STAGE)

FOR NTPC USE

DOC NO. 1110-201-QVE-G-069

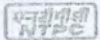
REV:2

REVIEWED BY

APPROVED BY

APPROVAL SEAL

ENGG.DIV./ QA & I

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values	
1	2	3	4	5	6	7	8	9	10	
3.02.11	Checks on OLTC									
i)	Visual inspection from inside	--	C	Visual	--	--	--	Check List	--	
ii)	Hand operation at all taps	--	A B,C	Operation test	--	Shall operate without any undue load	Shall operate without any undue load	Check List	--	
iii)	Limit switch	--	B,C	Operation test	--	Shall prevent tap change beyond extreme taps	Shall prevent tap change beyond extreme taps	Check List	--	
iv)	Tap position indicator	--	B,C	Visual	--	Shall show correct tap	Shall show correct tap	Check List	--	
v)	Out of step/incomplete step			Not Applicable as there is no parallel operation						
vi)	Continuity test between HV windings and neutral while OLTC in operation	Multimeter	B,C	Electrical	--	O&M Manual	No discontinuity during tap changing	Check List	--	
vii)	Complete wiring of circuit and Remote panel wiring as completed	--	B,C	Physical	--	As per supplier's catalogue/ schematic	As per supplier's catalogue/ schematic	Check list/ Inspection records	--	
viii)	O/L device of driving motor	--	B,C	Operation test	--	Shall not operate during normal operation	Shall not operate during normal operation	"	--	
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MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		FOR NTPC USE		REVIEWED BY		APPROVED BY		
SIGNATURE								APPROVAL SEAL		
FORMAT NO.: QS-01-QAI-P-09/F2-R1						ENGG.DIV./ QA & I				

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values	
1	2	3	4	5	6	7	8	9	10	
ix)	Local operation(electrical)	--	A	Operation test	--	As per supplier's catalogue/ schematic	As per supplier's catalogue/ schematic	"	--	
x)	Remote operation (Electrical) (as work completed)	--	B	Operation test	--	As per supplier's catalogue/ schematic	As per supplier's catalogue/ schematic	"	--	
xi)	Record of tap changer									
	a) Motor current	Tong tester	B	Measurement	--	Supplier's catalogue	Supplier's catalogue	"	--	
	b) Operating time	Stopwatch	B	Measurement	--	Supplier's catalogue	Supplier's catalogue	"	--	
	c) Control voltage	Multimeter	B	Measurement	--	Supplier's catalogue	Supplier's catalogue	"	--	
3.02.12	Hand operation of OCTC	--	B	Operation test	--	Shall operate without any undue load	Shall operate without any undue load	Check List	--	
3.02.13	Exposure time	--	B	Measurement	--	O&M Manual	To be minimum (limit to < 12 hours in a single stretch is recommended)	Check List	--	
MANUFACTURER/ SUB-SUPPLIER			MAIN SUPPLIER			LEGEND * RECORDS, IDENTIFIED WITH "TICK" (✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FOA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		DOC NO. 1110-201-QVE-G-069		REV:2
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TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 12 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
Sl.No	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values
1	2	3	4	5	6	7	8	9	10
3.03	Checks before vacuum and oil filling							Check List	
3.03.01	Check whole assembly for tightness gasket integrity and general appearance		C	Visual	100%			Check List	
3.03.02	Ratio Test	Ratio meter/ Multimeter	B	Electrical	--	Rating & Connection Diagram plate drawing	Rating & Connection Diagram plate drawing	Check List	--
3.03.03	Check electrical clearances of equipment with respect to nearby installation		B	Visual/ Measurement	--	As per OGA drawing/ relevant standards	As per OGA drawing/ relevant standards	Check List	--
3.03.04	Oil leak Test The main Transformer tank and oil filled compartments shall be filled with transformer oil and subjected to normal pressure plus 35kN/sq.m measured at the base of the tank and the pressure shall be maintained for not less than 24 hours		A	Visual	--	No sweating shall occur NTPC Technical Specification	No sweating shall occur	Check List	--
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		LEGEND * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		DOC NO. 1110-201-QVE-G-069		REV:2	
SIGNATURE		SIGNATURE		FOR NTPC USE		REVIEWED BY		APPROVED BY	
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TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 13 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
3.03.05	Conditions of valves (before oil filling)	—	C	Visual	100%	Valve Schedule Plate	Ensure that valves are in open/closed conditions as per Valve Schedule Plate	Check List		—
3.03.06	Direction of Buchholz relay	—	C	Visual	100%	O&M Manual	Arrow should be towards conservator	Check List		—
3.03.07	Direction of Pump, fan, Check valve, Flow meter	—		Visual Operational	100%	O&M Manual	Ensure correct direction as per marking on equipment.	Check List		—
3.03.8	Direction of closed globe valves	—	C	Visual Operational	100%	O&M Manual	Arrow should be towards outside from tank/pipe lines as applicable	Check List		—
4.00	FINAL OIL FILLING AND FINAL CHECKS									
4.01	Final Vacuuming (After assembly) Transformer, Tap changer compartments and aircell shall be equalised before evacuation.									
a)	Degree of vacuum	Mcleod gauge	B X	Measurement	—	O&M Manual	<380torr for ≤66kV class & ≤ 0.5 torr for >66kV.	Check List		—
b)	Duration	—	B X	"	—	O&M Manual	24 hours minimum at specified vacuum level	Check List		—
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO * BE USED: CLASS# A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		FOR NTPC USE		DOC NO. 1110-201-QVE-G-069		REV:2
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SUPPLIER'S NAME AND
ADDRESS:

TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY
ITEM: POWER TRANSFORMER
SUB-SYSTEM: 250MVA GT,
31.5MVA ST and 16MVA UAT

FIELD QUALITY PLAN

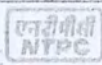
QP NO.: TELK/SINGRAULI/FQP/01
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PROJECT: SINGRAULI STPS

PACKAGE: STAGE-I R&M

CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104
dt.13/03/2014

MAIN SUPPLIER: M/s TELK, KERALA

Sl No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values
1	2	3	4	5	6	7	8	9	10
4.02	Filling oil characteristics	BDV, Moisture content, Interfacial Tension & Tan delta measurement in line with Spec before filling in main tank & energisation	A/B/C	Measurement	--		As per NTPC Tech. Spec	Check List	
4.03	Oil filling under vacuum at the end of keeping time		C		--	O&M Manual	Filling of oil through tank bottom valve	Check List	
4.04	Ensure that oil filling in the conservator (air cell type) is done as per the oil filling instruction given at specified rate and check the working of pressure relief valves		B	Physical	--	PRV shall not operate	PRV shall not operate	Check List	
4.05	Insulation resistance after filling oil (15 Sec and 1 min values) Temperature shall be recorded	2kV insulation tester, Thermometer	C	Electrical	--	For reference	For reference	Check List	
4.06	Hot oil circulation								
a)	Check connection and oil flow direction in transformer		C	Physical	--	O&M Manual	Inlet at bottom filter valve & cooler line (for oil directed cooled transformer) and outlet at top filter valve. Direction of flow inside the transformer from bottom to top	Check List	

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MANUFACTURER/ SUB-SUPPLIER: _____ SIGNATURE: _____
MAIN SUPPLIER: 

FOR NTPC USE: _____

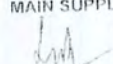
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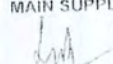
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SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		FIELD QUALITY PLAN		PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA			
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1	2	3	4	5	6	7	8	9	10
b)	Check oil Temperature at Filter Machine		C	Measurement	--	C NTPC	Max 75 °C	Check List	--
c)	Check oil Temperature at Transformer		C	Measurement	--	O&M Manual	Temp.60°C ~ 70°C	Check List	--
d)	Duration		C	Measurement	--	O&M Manual	Min 72hrs. For >100MVA and 48hrs. for <100MVA after achieving temperature of 55°C	Check List	--
e)	End point of HOC								
i)	Check Oil Characteristic in transformer oil and in diverter switch of OLTC	BDV, PPM	C	Electrical	One sample	O&M Manual	Transformer oil: BDV = 70kVmin. for >220kV class & 60kV for <220kV. PPM = 10max DS oil: BDV = 50kVmin	Check List	
ii)	Insulation resistance after completing HOC and settling for min.6hrs (15 Sec and 1 min values) Temperature shall be recorded	2kV insulation tester, Thermometer	B, X	Electrical	--	Comparable with factory test value	Comparable with factory test value	Check List	

LEGEND - RECORDS, IDENTIFIED WITH "TICK"(X) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)

MANUFACTURER/ SUB SUPPLIER SIGNATURE: 

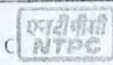
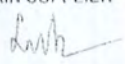
MAIN SUPPLIER: 

FOR NTPC USE

REVIEWED BY: _____ APPROVED BY: _____ APPROVAL SEAL: ENGG.DIV./ QA & I

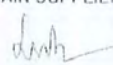
DOC NO. 1110-201-QVE-G-069 REV:2

FORMAT NO.: QS-01-QAI-P-09/F2-R1

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 16 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records	Remarks/ measured values	
1	2	3	4	5	6	7	8	9	10	
4.07	Final oil level in main conservator	--	B,C	Visual	--	C 	MOLG shall read 1/3 level at 30° C	Check List	--	
5	PRE-COMMISSIONING CHECKS									
5.01	Check that air is released through the valves/plugs fitted for this purpose on various fittings like Buchholz relay, IS bushing, Headers pipes etc	--	C	Physical	100%	O&M Manual	No air trapped inside	Check List	--	
5.02	Make sure that transformer oil runs through petcock of Buchholz relay, when bleeding pipe is not provided. If bleeding pipe is provided, oil shall run out of petcock provided at its bottom.	--	C	Physical	--	--	--	Check List	--	
5.03	Check the oil level in the breather housing, cooling system, condenser bushing etc.	--	C	Physical	--	--	--	Check List	--	
5.04	Check that the thermometer pockets on tank cover are filled with oil.	--	C	Physical	--	--	--	Check List	--	
LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A&B CHECK SHALL BE NTPC CHP STAGE)						DOC NO. 1110-201-QVE-G-069		REV:2		
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		FOR NTPC USE		REVIEWED BY		APPROVED BY		
SIGNATURE								APPROVAL SEAL		
FORMAT NO.: QS-01-QAI-P-09/F2-R1						ENG.G.DIV./ QA & I				

SUPPLIER'S NAME AND ADDRESS:		FIELD QUALITY PLAN					PROJECT: SINGRAULI STPS			
TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 17 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
5.05	Make sure that valves are open/close as per the valve schedule plate.	--	C	Physical	--	Valve Schedule Plate	Valve Schedule Plate	Check List		--
5.06	Ensure that off-load switch handle of OCTC is locked at the desired tap position(tap1) and on-load switch handle of OLTC is locked at tap 9b	--	C	Physical	--	--	--	Check List		--
5.07	Connection checks for neutral as per drawing and make sure that neutral of HV is effectively earthed	--	C	Physical	--	--	--	Check List		--
5.08	Ensure that tank and cooler bank are effectively earthed at two points.	--	C	Physical	--	--	--	Check List		--
5.09	Check for tightness of all external electrical connections and core earthing	--	B	Physical	--	--	--	Check List		--
5.10	Alarm and trip contacts of Buchholz relay, PRD, OIL, WTI, magnetic oil gauge, oil flow indicator, etc. shall be checked	--	B	Physical	--	--	--	Check List		--
MANUFACTURER/ SUB-SUPPLIER SIGNATURE <i>dh</i>						MAIN SUPPLIER SIGNATURE <i>dh</i>		LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)		
FORMAT NO.: QS-01-QAI-P-09/F2-R1						DOC NO. 1110-201-QVE-G-069		REV:2		
FOR NTPC USE						REVIEWED BY		APPROVED BY		APPROVAL SEAL ENGG.DIV./ QA & I

		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS				
SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 18 of 19		PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dL13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
5.11	Ensure that CTs secondary terminals of the spare CT cores are shorted and earthed (as applicable)	--	C	Physical	--		--	--	Check List	--
5.12	Check that the terminals in the marshalling box are connected to WII CT terminals indicated in the rating and diagram plate	--	C	Physical	--	--	--	--	Check List	--
5.13	Touching up of paint shall be done after erection wherever necessary with the same paint as is specified for the finish coat	--	C	Physical	--	--	--	--	Check List	--
5.14	Clear off extraneous materials like tools, earthing rods, pieces of clothes, waste etc.	--	C	Physical	--	--	--	--	Check List	--
5.15	Check that transformer is cleaned	--	C	Physical	--	--	--	--	Check List	--
5.16	Lock the rollers for accidental movement on rails	--	C	Physical	--	--	--	--	Check List	--
5.17	Completeness of erection	--	B, X	Physical	--	--	--	--	Check List	--
LEGEND * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED: CLASS# A=CRITICAL, B=MAJOR, C=MINOR 'A' SHALL BE WITNESSED BY NTPC FQA 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER (A&B CHECK SHALL BE NTPC CHP STAGE)						DOC NO. 1110-201-QVE-G-069		REV:2		
MANUFACTURER/ SUB-SUPPLIER		MAIN SUPPLIER		FOR NTPC USE		REVIEWED BY		APPROVED BY		APPROVAL SEAL
SIGNATURE										ENGG.DIV./ QA & I
FORMAT NO.: QS-01-QAI-P-09/F2-R1										

		FIELD QUALITY PLAN				PROJECT: SINGRAULI STPS PACKAGE: STAGE-I R&M CONTRACT NO.: CS-1110(R&M)-201D-9-FC-COA-6104 dt.13/03/2014 MAIN SUPPLIER: M/s TELK, KERALA				
SUPPLIER'S NAME AND ADDRESS: TRANSFORMERS AND ELECTRICALS KERALA LIMITED, ANGAMALY		ITEM: POWER TRANSFORMER SUB-SYSTEM: 250MVA GT, 31.5MVA ST and 16MVA UAT		QP NO.: TELK/SINGRAULI/FQP/01 REV NO.: 3 DATE: 06.10.2015 PAGE: 19 of 19						
Sl.No.	Activity & Operation	Characteristics/ Instruments	Class of Check	Type of check	Quantum of check	Reference documents	acceptance norms	Format of records		Remarks/ measured values
1	2	3	4	5	6	7	8	9	D*	10
5.18	Functioning of oil pump from manual, local and remote controls	--	C	Electrical	--	Cor NTPC tic	Cooler schematic Drawing	Check List		--
5.19	Sequential operation of cooling system on auto operation	--	C	"	--	"	"	"		--
5.20	Check whether all interfaces to PURCHASER's protection and control panels are OK and settings found OK	--	C	--	--	"	"	"		--
5.21	Phase sequence of power supply at MB kiosk, check control supply - phase sequence meter.	--	C	--	--	--	--	Check List		--
6.00	COMMISSIONING: Checks as per Cl.6.04.04 of technical spec will be carried out.									
7.00	INITIAL OPERATION: Checks as per Cl.6.04.05 of technical spec will be carried out.									
NOTE: Ratio test, Exciting current, Magnetic balance and SFRA tests shall be done before application of DC for any other tests.										
MANUFACTURER/ SUB-SUPPLIER SIGNATURE		MAIN SUPPLIER 		LEGEND: * RECORDS, IDENTIFIED WITH "TICK"(✓) SHALL BE ESSENTIALLY INCLUDED BY SUPPLIER IN QA DOCUMENTATION. LEGEND TO BE USED CLASS# A=CRITICAL, B=MAJOR, C-MINOR 'A' SHALL BE WITNESSED BY NTPC FQA, 'B' SHALL BE WITNESSED BY NTPC ERECTION/ CONSTRUCTION DEPTT. AND 'C' SHALL BE WITNESSED BY MAIN SUPPLIER. (A&B CHECK SHALL BE NTPC CHP STAGE)			DOC NO. 1110-201-QVE-G-069 REV:2		FOR NTPC USE REVIEWED BY APPROVED BY APPROVAL SEAL	
FORMAT NO.: QS-01-QAI-P-09/F2-R1										
ENGG.DIV./ QA & I										

Rate Schedule format to Bid Doc No. TELK/C&M/OES/TRER/366/2026

Sl. No.	Item Description	Quantity	Unit	BASIC RATE PER UNIT (WITHOUT GST) (INR)	GST (%)	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT With Taxes
1.01	PART A Dismantling of OLD GT and its accessories from service bay (Lump sum rate per transformer shall be quoted here)	1	Lump sum per transformer				
1.02	PART A Dragging on rails / sleeper & placement on plinth for Old GT from service bay to storage bay (Lump sum rate per meter shall be quoted here)	25	Price per meter				
1.03	PART A Receipt, dragging, handling, storage, erection, oil processing, commissioning and handing over the transformer. Price for 1 No. 250MVA, 15.75/420kV, 3-Ph, GT at Singrauli Site (Scope of Work as per Clause 4.1 to 4.5 of tender) (Lump sum rate per transformer shall be quoted here)	1	Lump sum per transformer				
1.04	PART A Dragging on rails / sleeper & placement on plinth of 250MVA transformer up to 200m dragging (Basic lump sum rate per meter shall be quoted here)	200	Price per meter				
2.01	PART B (OPTIONAL) Additional dragging of transformer on rail / sleeper either due to distance being more than that specified in scope of work (Basic lump sum rate per meter shall be quoted here)	1	Price per meter				
2.02	PART B (OPTIONAL) Additional Turning of transformer by 180 degree for dragging / placement of plinth (Basic lump sum rate per transformer shall be quoted here)	1	Lump Sum				
2.03	PART- B (OPTIONAL) To carryout additional drying of transformer beyond the mandatory cycles) by N2 purging & heating under N2 filled condition. Supply of N2 cylinders having required dew point and heaters shall be contractor scope (Basic lumpsum rate per cycle shall be quoted here)	1	Price per cycle				
2.04	PART- B (OPTIONAL) EXTRA HIRE CHARGES Labour charges for repair / rectification / modification / additional work (Rate per day shall be quoted here)	1	Rate per day				



Rate Schedule format to Bid Doc No. TELK/C&M/OES/TRER/366/2026

Sl. No.	Item Description	Quantity	Unit	BASIC RATE PER UNIT (WITHOUT GST) (INR)	GST (%)	TOTAL AMOUNT Without Taxes	TOTAL AMOUNT With Taxes
2.05	PART-B (OPTIONAL) Hire charges for providing major facilities by contractor if needed for additional / extra work. Long boom Cranes suitable for Bushing Erection (Rate per day shall be quoted here)	1	Rate per day				
2.06	PART-B (OPTIONAL) Derrick (Rate per day shall be quoted here)	1	Rate per day				
2.07	PART-B (OPTIONAL) High Vacuum Filter Machine For 12000 lph capacity filter machine (Rate per day shall be quoted here)	1	Rate per day				
2.08	PART-B (OPTIONAL) For 6000 lph capacity filter machine (Rate per day shall be quoted here)	1	Rate per day				
2.09	PART-B (OPTIONAL) Oil Tankers For 10kl capacity (Rate per day shall be quoted here)	1	Rate per day				
2.10	PART-B (OPTIONAL) Oil Tankers For 15kl capacity (Rate per day shall be quoted here)	1	Rate per day				
Total in Figures							

