

KARNATAKA POWER TRANSMISSION CORPORATION LIMITED

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Office of the
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BANGALORE – 560 009

No. CEE/T&P/SEE/EE(T2)/T-5/2014-15/ 5932-46 Date: 19 SEP 2014

Circular

Sub: Approval of drawings/GTPs, inspection of materials and despatch instructions for equipment/materials for Turnkey/partial turnkey works of KPTCL - Reg.

Ref: Updated Vendor approval terms and conditions.

1. After analyzing failure of certain materials (Transformer/Insulator etc) failure analysis was made. To ensure the quality of equipments that are to be supplied to KPTCL projects, the qualifying requirements, Terms and Conditions stipulated for vendor approval were revised with effect from 01.01.2014. As per the revised qualifying requirements, Terms and Conditions for vendor approval, Vendors have to furnish valid type test reports of not older than 5 years, **issued by the CPRI laboratory**, for the **same** type, rating and voltage class of Equipment/Materials, if the same are to be supplied to KPTCL projects.
2. During implementation, some of the contract agencies expressed their difficulty in furnishing type test reports of CPRI for certain materials at the time of inspection or before supplies are made to KPTCL. This aspect was reviewed and accordingly conditions were updated for certain materials. Updated terms and conditions are available in KPTCL website www.kptcl.com, link: tendering & procurement wing (Download-Vendor Registration Form).


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Hence the following guidelines are to be followed while implementing the terms and conditions of vendor approvals:

A) Regarding Type test reports to be furnished for supply of materials/equipment (other than Power Transformers) to KPTCL works:

- i) For the works which are having bid enquiry numbers up to **TLSS-691**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall furnish, to the concerned KPTCL Authorities, valid type test reports of not older than 5 years, **issued by the CPRI/ERDA/KEMA/NABL accredited laboratories**, for the **same** type, rating and voltage class of Equipment/Materials, proposed to be supplied to KPTCL projects, during drawing approvals, inspection of equipment/materials etc.
- ii) For the works which are having bid enquiry numbers **TLSS-692 and above**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall furnish, to the concerned KPTCL Authorities, valid type test reports of not older than 5 years, **issued by CPRI/Designated laboratories indicated against each of the equipment/ Material in the Annexure enclosed to the Circular**, for the **same** type, rating and voltage class of Equipment/Materials, proposed to be supplied to the KPTCL projects, during drawing approvals, inspection of equipment/materials etc.

B) Regarding Type test reports, Dynamic short circuit test reports to be furnished for supply of Power Transformers to KPTCL works:

- i) For the works which are having bid enquiry numbers up to **TLSS-662**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall furnish, to the concerned KPTCL Authorities, type test reports issued by **CPRI/ERDA/KEMA/NABL accredited laboratories**, for the **same** type, rating and voltage class of Power Transformers proposed to be supplied to the KPTCL projects, during drawing approvals, inspection of Power Transformers etc. Further they shall **Guarantee the Power Transformers for 5(Five) years** from the date


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of supply and the same shall be indicated on the Rating & Diagram plate of the said Transformers. Further, Contract agency shall furnish **Performance Bank Guarantee** for the said guarantee period of 5(Five) years from the date of supply.

However furnishing Bank Guarantee condition is applicable for the projects wherein final inspection of Power Transformers is yet to be done and where Power Transformers are yet to be supplied to the Station site.

- ii) For the works which are having bid enquiry numbers from **TLSS-663 to TLSS-691**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall conduct **dynamic short circuit test**(for 66kV and 110kV voltage class) at **CPRI and furnish test reports** to the concerned KPTCL Authorities and furnish **type test reports** (for 220kV, 110kV & 66kV voltage class) issued by **CPRI/ERDA/KEMA/NABL accredited laboratories**, for the **same** type, rating and voltage class of Power Transformers proposed to be supplied to KPTCL projects, during drawing approvals, inspection of Power Transformers etc. Test reports shall not be older than 5 years.
- iii) For the works which are having bid enquiry numbers **TLSS-692 and above**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall conduct **dynamic short circuit test** (for 66kV & 110kV voltage class) at **CPRI/KEMA/CESI/PEHLA/KERI** and furnish test reports to the concerned KPTCL Authorities and furnish **type test reports** (for 220kV, 110kV & 66kV voltage class) **issued by CPRI/KEMA/CESI/PEHLA/KERI laboratory**, for the **same** type, rating and voltage class of Equipment/Materials, proposed to be supplied to the KPTCL projects, during drawing approvals, inspection of equipment/materials etc. Test reports shall not be older than 5 years.
- iv) It is mandatory to conduct **temperature rise test** on each of the Power Transformer proposed to be supplied to all works of KPTCL, irrespective of enquiry nos. mentioned above. The tests shall be conducted at manufacturer's premises and witnessed by the representatives of **CPRI and KPTCL**. Applicable charges of CPRI Representative shall be paid by

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the EPC Contractor upfront and the same is reimbursable by the KPTCL as per actual, on submission of bills along with proof of payment, on successful passing of tests. In case the Power Transformer fails in testing, then testing charges payable to CPRI for having witnessed tests will not be reimbursed and Power Transformer will not be accepted. Then such vendor will be barred from supply of Power Transformer to KPTCL for a minimum period of 2 years and vendor approvals will be withdrawn. The EPC Contractor shall supply the Power Transformer from any other approved vendor of KPTCL.

Note:

However in respect of bid enquiry numbers up to TLSS-691, if the Transformer has not been dispatched this condition will apply.

- v) **Lightning impulse chopped wave tests** has to be carried out on each of the Power Transformer proposed to be supplied to KPTCL works, irrespective of enquiry nos. mentioned above, as a routine test for Power Transformers having voltage class above 72.5kV, in addition to other dielectric tests as per IS.2026 Part-3:2009 and its amendments.

Note:

However in respect of bid enquiry numbers up to TLSS-691, if the Transformer has not been dispatched this condition will apply.

(C) Regarding Validity of vendor approvals, short circuit tests:

- 1) At the time of according **approvals to drawings and GTPs** of particular equipment/materials proposed to be supplied to Turnkey/partial turnkey works of KPTCL, the drawing approving authority shall ensure that make of an equipment/material is in the approved vendor list and validity of vendor approval shall not have been expired as on the date of drawing approvals. However, in case validity of vendor approval has lapsed after **approvals to drawings and GTPs**, i.e. in the course of inspections, dispatch instructions and supply of equipment/materials, in all such cases, inspection, dispatch instructions and supply of equipment/materials shall be considered without waiting for renewal of vendor approvals for the respective equipment/materials. However for all such cases, EPC Contractors/vendors shall furnish, at the time of inspections, the valid type test reports (for 220kV, 110kV & 66kV voltage

class), dynamic short circuit test reports (For 66 kV & 110 kV), as the case may be, as stipulated at **(A)** and **(B)** above and shall comply with the terms and conditions stipulated thereon. The test reports shall not be older than 5 years.

- 2) In respect of **(1)** Isolators, **(2)** Current Transformers, **(3)** Wave Traps, **(4)** Circuit Breakers, **(5)** Batteries, **(6)** Clamps and connectors, in addition to type test reports, vendors shall also furnish **short circuit** test reports of not older than 5 years, issued by **CPRI/Designated laboratories indicated against each of the equipment/ Material in the Annexure enclosed to the Circular for the same type, rating, voltage class and size of Equipment/Materials proposed to be supplied to KPTCL for bid enquiry numbers TLSS-692 and above.**

Handwritten signature
**Chief Engineer, Electy.,
T & P, KPTCL, Bangalore.**

Copy to:

1. The Chief Engineer, Electricity, (P&C), KPTCL, Kaveri Bhavan, Bangalore
2. The Chief Engineer, Electricity, (TA & QC), KPTCL, Kaveri Bhavan, Bangalore.
3. The Chief Engineer, Electricity, (RT & R and D), KPTCL, Kaveri Bhavan, Bangalore.
4. The Chief Engineers, Electricity, Transmission Zones, KPTCL, Bangalore/Tumkur/Bagalkot/Gulbarga/Hassan/Mysore.
5. All the Superintending Engineers (El.), W&M Circles, RT Circle, SEE (P&M), SEE (Tech)/ (Planning), KPTCL.
6. All the Executive Engineers, Elec., Major works Divisions, KPTCL.
7. The Executive Engineers, Elec., T1/T2, T&P, Kaveri Bhavan, Bangalore.
8. P.S to Managing Director, KPTCL, Kaveri Bhavan, Bangalore with a request to place the same before the Managing Director for kind perusal.
9. P.S to Director (Transmission), KPTCL, Kaveri Bhavan, Bangalore with a request to place the same before the Director (Transmission) for kind perusal.
10. All AEEs (Turnkey), T&P, KPTCL, Kaveri Bhavan, Bangalore.
11. MF/OC.

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Annexure

Type test Reports to be furnished during supply of materials to KPTCL Turkey/Partial Turnkey Projects through EPC Contractor:

Equipment offered shall have Type Test Certificates conducted as per the relevant IEC/IS/KPTCL technical specifications. For the works which are having bid enquiry numbers **TLSS-692 and above**, floated by the CEE, Tendering & Procurement KPTCL, EPC Contractors/Vendors shall furnish, to the concerned KPTCL Authorities, the valid type test reports of not older than 5 years, issued by the designated laboratories indicated against each of the equipment/Material in the table below, for having conducted successful type tests, on same type, rating, voltage class and size of Equipment/Materials as specified in the technical specifications of KPTCL, during drawing approvals, inspections and before supplies to be made to KPTCL projects, through EPC Contractors.

Sl. No.	Details of Equipment/Material	During drawing approvals, inspections and before supplies to be made to KPTCL projects, type test reports issued by the following laboratories shall be furnished by the EPC Contractors/Vendors	Test reports shall be furnished as per IS/IEC/ KPTCL specifications
1	2	3	4
1	Power Transformers	CPRI/KEMA/CESI/PEHLA/KERI	IS-2026, IEC-60076
		<p>Type test reports shall be furnished for the following tests:</p> <ol style="list-style-type: none"> 1) Lightning impulse chopped wave tests for all voltage class Power Transformers. 2) Temperature rise test for all voltage class Power Transformers. 3) Dynamic ability to withstand short circuit test for 66kV and 110kV voltage class Power Transformers. <p>Note:</p> <ol style="list-style-type: none"> 1) It is mandatory to conduct temperature rise test on each of the Power Transformer proposed to be supplied to all works of KPTCL. The tests shall be conducted at manufacturer's premises and witnessed by the representatives of CPRI and KPTCL. Applicable charges of CPRI Representative shall be paid by the EPC Contractor upfront and the same is reimbursable by the KPTCL as per actual, on submission of bills along with proof of payment, on successful passing of tests. In case the Power Transformer fails in testing, then testing charges payable to CPRI for having witnessed tests 	

Sl. No.	Details of Equipment/Material	During drawing approvals, inspections and before supplies to be made to KPTCL projects, type test reports issued by the following laboratories shall be furnished by the EPC Contractors/Vendors	Test reports shall be furnished as per IS/IEC/ KPTCL specifications
1	2	3	4
		<p>will not be reimbursed and Power Transformer will not be accepted. Then such vendor will be barred from supply of Power Transformer to KPTCL for a minimum period of 2 years and vendor approvals will be withdrawn. The EPC Contractor shall supply the Power Transformer from any other approved vendor of KPTCL</p> <p>2) Lightning impulse chopped wave tests has to be carried out on each of the Power Transformer proposed to be supplied to KPTCL as a routine test for Power Transformers having voltage class above 72.5kV, in addition to other dielectric tests as per IS.2026 PART-3:2009 and its amendments.</p> <p>In case the Power Transformer fails in testing, Power Transformer will not be accepted. The EPC Contractor shall supply the Power Transformer from any other approved vendor of KPTCL.</p>	
2	On Load Tap Changer	CPRI/ Type Test reports for having witnessed by CPRI.	IEC-60214-1
3	Control and Relay Panels	CPRI/CESI/KEMA/PEHLA/KERI/ Siemens AG/Global EMC INC Laboratory.	IEC-60255 IEC-61850 IS-13947 IEC-60870 IEC-60529
4	Circuit Breakers	CPRI/CESI/KEMA/PEHLA/KERI/CERDA (Seismic withstand test conducted at IITs/IISc are acceptable).	IEC-62271
5	11KV MCVCBs & PCVCBs	CPRI	
6	Tower Parts and all types of Station Structures with Bolts, Nuts and Washers	During final inspection of materials at Factory premises Galvanising test shall be conducted by the inspecting officers of KPTCL, along with other tests as stipulated in tender specifications.	
7	I Beams & M.S Channels	In case, testing facility is not available at Factory premises, the Galvanising test shall be got conducted at NABL accredited Laboratory in presence of Inspecting officers of KPTCL.	
8	Lightning Arrestors	CPRI (Seismic & Cantilever test conducted at IITs/IISc are acceptable). In addition to submission of type test reports as	IS-3070 IEC-60099-4


Sl. No.	Details of Equipment/Material	During drawing approvals, inspections and before supplies to be made to KPTCL projects, type test reports issued by the following laboratories shall be furnished by the EPC Contractors/Vendors	Test reports shall be furnished as per IS/IEC/ KPTCL specifications
1	2	3	4
		per the relevant IEC/IS/ Technical specifications, type test reports for long duration impulse current withstand test shall be furnished.	
9	Isolators	CPRI	IS:9921 IEC-62271-102
10	Insulators	CPRI	IS: 731, IEC-575, IS:8263, IEC383, BS137, IS2544, IEC168, IEC815, IS5350
11	Instrument Transformers	CPRI. (Seismic & Cantilever test conducted at IITs/IISc are acceptable)	IS:2705 IS:3156 IEC-60044 IEC-60358 IS:9348 IEC-61869
12	Battery Sets	CPRI	IS 1652 & IEC 60896-11
13	Battery Charger	CPRI/ERDA/NABL	IEC 61000-6-2, IEC 61000-6-4 IEC 61000-6-4-10 IEC 61000-6-4-18 (for Electromagnetic compatibility Tests)
		Type test reports to be furnished from CPRI/NABL for: <ol style="list-style-type: none"> 1. Electromagnetic compatibility (EMC) Tests 2. Degree of protection test Test reports for the following tests conducted at CPRI/ERDA/NABL OR conducted at Manufacturer's premises and witnessed by KPTCL Officials for earlier KPTCL Projects shall be furnished. <ol style="list-style-type: none"> i. Voltage regulation test ii. Load limiter characteristic test iii. Efficiency Tests iv. High voltage tests v. Temperature rise test vi. Short circuit test at no load at rated voltage for sustained short-circuit Vii. Measurement of ripple by Oscilloscope 	
14	ACSR Conductors	CPRI	IS:398
15	Ground Wire	CPRI	IS:12776
16	11KV UG Cable	CPRI	IS: 7098

Sl. No.	Details of Equipment/Material	During drawing approvals, inspections and before supplies to be made to KPTCL projects, type test reports issued by the following laboratories shall be furnished by the EPC Contractors/Vendors	Test reports shall be furnished as per IS/IEC/ KPTCL specifications
1	2	3	4
17	1.1KV Copper Control Cables & LT Power Cables	CPRI In addition to type test reports, smoke Density test report shall be furnished.	IS: 1554
18	Capacitor Bank	CPRI	IS:13925 IEC-60871
19	Hardware for Insulator, Conductor and Ground wire: Tension & Suspension Clamps and connectors.	CPRI	IS:2486
20	Accessories for Conductor and Ground wire: P.G Clamps, M.S.C Joints, Pre-formed Rods, Repair sleeves, Vibration Damper etc.	CPRI/ERDA/NABL	IS:2121 IS:9708
21	C-Type Fire Wedge Connectors	CPRI/ERDA/NABL	ANSI C 119.4-2004
22	i)Grounding Materials (G.I Flat, M.S Flat etc.,)	Dimensional checks shall be carried out at site by the KPTCL officials in charge of the work.	
	ii)Grounding Materials (C.I Pipes)	CPRI/ERDA/NABL	
		Random sample of C.I Pipes supplied at the Project site of KPTCL shall be drawn and the Vendor/EPC Contractor shall arrange for re-inspection/Acceptance tests at CPRI in presence of KPTCL Authorities and test reports for the same shall be furnished. Applicable CPRI testing charges shall be paid by the EPC Contractor upfront and the same is reimbursable by the KPTCL as per actual, on submission of bills along with proof of payment, on successful passing of tests. In case C.I Pipes fails in testing, then testing charges will not be reimbursed and C.I Pipes will not be accepted. The EPC Contractor shall supply the C.I Pipes from any other approved vendor of KPTCL.	
23	LTAC & DCDB Panel	CPRI/ERDA/NABL	
24	11KV class Termination & Jointing Kits	CPRI/ERDA/NABL	IS:13573

Sl. No.	Details of Equipment/Material	During drawing approvals, inspections and before supplies to be made to KPTCL projects, type test reports issued by the following laboratories shall be furnished by the EPC Contractors/Vendors	Test reports shall be furnished as per IS/IEC/ KPTCL specifications
1	2	3	4
25	Nitrogen Injection Fire Protection System	CPRI/ERDA/ETDC, GoI /NABL	
26	Rigid Tubular Aluminium Bus Bars, Aluminium Clamps and Connectors.	CPRI/ERDA	IS:5561
27	Wave Traps/Line Traps	CPRI/ERDA/NABL/ Zkratovna Laboratory.	IS:8792 IS:8793
28	PLCC Equipment	CPRI/KEMA /Electronics Regional Test Laboratory, New Delhi/ Laboratoire Central DES Industries Electriques (LCIE), France.	

Note:

Type test reports shall be furnished as per the relevant IS/IEC/KPTCL Specifications. If any amendments are introduced to the IEC/IS/KPTCL Technical specifications, vendors shall furnish type test reports for all the tests conducted as per the latest amendments if any, to the IEC/IS/KPTCL Technical specifications prevailing at the time of supply of equipment/materials to the KPTCL Projects. Further KPTCL may insist for test reports on any other relevant type tests/special tests/additional tests, before supply of materials to KPTCL.


 Chief Engineer, Electy.,
 Tendering & Procurement, KPTCL