

TAMIL NADU TRANSMISSION CORPORATION LIMITED
ABSTRACT

Electricity – Coimbatore Region - Coimbatore Operation circle – Coimbatore
EDC/North - Replacement of 1 No failed 110/22KV, 16 MVA Power Transformer – II
by a healthy one at 110/22KV Mettupalayam SS - Administrative approval – Accorded

TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No. 144

Dated:03.09.2025
Visuvavasu Varudam,
Aavani - 18,
Thiruvalluvar Aandu 2056

Read : Chairman's Note approval dated 01.09.2025::

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for the Replacement of 1 No failed 110/22KV, 16 MVA Power Transformer-II by a healthy one at 110/22KV Mettupalayam SS of Coimbatore EDC/North of Coimbatore Region at an estimated cost of Rs.246.87 Lakhs Gross and Rs.116.46 Lakhs Nett. and ratification for having replaced the failed power transformer with healthy Power Transformer in anticipation of approval.
2. The detailed estimate and report are annexed to these proceedings.
3. The expenditure is chargeable to TANTRANSCO - Funds - Capital Expenditure – Coimbatore EDC/North of Coimbatore Operation circle of Coimbatore Region - A/C code No:1020400.
4. By virtue of the provisions contained in sub-section (2) (a) of section 185 of the Electricity Act, 2003, TANTRANSCO being the Transmission utility, Licensee and successor entity of Tamil Nadu Electricity Board will exercise the powers of the Telegraph Authority under the provisions of section 164 of the Electricity Act, 2003, which have already been conferred upon the Board under section 51 of the Indian Electricity Act, 1910.
5. The works will be taken up after ensuring necessary budget provision.

// BY ORDER OF THE CHAIRMAN//

K.SRIDHARAN

CHIEF ENGINEER/TRANSMISSION(FAC)

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Coimbatore Region

Enclosure to (Per) CH TANTRANSCO Proceedings No.144, dated:03.09.2025

Copy to:

The Managing Director/TANTRANSCO/Chennai-2

The Director/Distribution/TNPDCL/Chennai-2

The Director/Transmission Projects/TANTRANSCO/Chennai-2

The Director Operation/TANTRANSCO/Chennai-2

The Director/Finance/TANTRANSCO/Chennai-2

The Chief Engineer/System Operation/Trichy

The Chief Engineer/Transmission Projects II/Trichy

The Superintending Engineer/Coimbatore EDC

The Superintending Engineer/Operation/Coimbatore Circle

The Superintending Engineer/GCC /Coimbatore

The Superintending Engineer/Planning Transmission /Chennai -2

The Superintending Engineer/System Studies/Chennai -2

The Resident Audit Officer (AGO'S Unit)/Chennai -2

B.P.Section (Administrative Branch)

Stock file

//FORWARDED BY ORDER//



EXECUTIVE ENGINEER/MASTER PLAN I
TANTRANSCO

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages the Replacement of 1 No failed 110/22KV, 16 MVA Power Transformer – II by a healthy one at 110/22KV Mettupalayam SS of Coimbatore EDC/North of Coimbatore Region at an estimated cost of Rs.246.87 Lakhs Gross and Rs.116.46 Lakhs Nett.

Need:

At present, Mettupalayam 110/22KV SS is having 3x16MVA, 110/22KV Power Transformer. The 16MVA Power Transformer – II (Voltamp make) Power Transformer bearing serial No. JN8081/9, (YOM:2002) was in service at Mettupalayam 110/22KV SS since 29.07.2022.

On 30.11.2024 @ 09.40hrs, The 16MVA 110/22KV Power Transformer-II was tripped activation of Buchholz Alarm and Differential relays (LV 'Y' phase, 'B' Phase) and GC – LV-I&LV-II, LV-III feeder breaker tripped through master relay. Hence the power transformer – II was isolated from service. The power transformer-I&III and 22KV feeder put back into service.

The loads were managed with the available 2x16MVA power transformer I&III and partial loads were shared with nearby 110/22KV Bhavani Barrage and 110/22KV Marudhur SS.

The MRT wing tested the above Power Transformer and the test results revealed that there is considerable deviation in LV magnetizing current , LV core balance , open circuit spill current and LV DC resistance compared with the previous test results. The DGA test revealed that all the gas values increased and there is presence of fault gases, and hence recommended for internal examination.

Internal examination was carried out on 07.12.2024 by concerned engineers after draining the entire oil main tank and from the test results following were observed.

1. Burnt/charred smell observed inside the main tank.
2. No arcing mark found inside anywhere in the tank.
3. LV link plate found intact and no carbon particles.
4. No arcing mark was found in the winding leads and cellulose paper.
5. Core bolts at top side found intact.

6. Core Earthing found intact.
7. Core and Coil assembly found intact and the shape found normal.
8. OLTC leads and connection are found intact.
9. OLTC housing found normal.
10. Coil support pressure ring found intact.
11. All jack bolts in top side found intact.
12. Fine Copper granules were found on LV link plate, core channel and pressure ring.

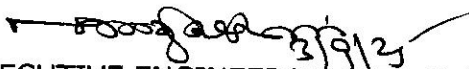
The internal examination observation revealed that there is defect/damage in LV 'Y' Phase. The cause of increasing fault gases values in DGA test results and Buchholz alarm and differential relay (LV 'Y' phase and 'B' phase) might be due to inter turn short and open circuit inside the coil assembly. Hence the above Power Transformer was declared as failure and it could not be rectified at site.

The above Power Transformer has failed within repairing guarantee period and hence M/s. Ascott Electrical Pvt Ltd.,/Chennai has lifted the above Power Transformer to their factory for rectification on 28.12.2024.

The date of replacement of the failed transformer by healthy Power Transformer of capacity 16 MVA 110/22KV Voltamp make on 27.01.2025 at 10.30 hrs.

Details of works:

- Erection of 1 No. healthy 16 MVA Power Transformer -II at the existing Mettupalayam 110/22kV SS.
- Dismantling of failed 1 No. 16 MVA Power Transformer-II at the existing Mettupalayam 110/22kV SS.


EXECUTIVE ENGINEER/MASTER PLAN I
TANTRANSKO

ESTIMATE FOR REPLACEMENT OF THE FAILED 16 MVA, 110/22KV POWER TRANSFORMER-2 WITH A HEALTHY UNIT OF SAME CAPACITY AT Mettupalayam 110/22KV SS IN COIMBATORE EDC/NORTH

Part - I: Cost of new asset

Rs in lakhs

Sno	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	16MVA, 110/22 kV power transformer with OLTC	1 No.	206.180	No	206.180
	Cost of materials				206.180
	Contingencies 1%				2.062
	Labour & Transport charges (Actual Labour charges)	actuals LS			6.430
	Sub total				214.672
	Estt & supervision charges @ 15 %				32.201
	Dismantling charges	actuals			0.000
	Gross				246.873
	Less credit				130.409
	Nett				116.464

(*) as per 2024-25 Cost Data

Part I(A):Dismantling charges

0.00 Lakhs

Part II:Accumulated Depreciation

Sno	Name of the item	Original cost	Total life in years	Life served in years	Accum. depre. 0.9(CI.3x CI.5/ CI.4)
1	16 MVA,110/22kV PowerTransformer	130.41	25	21	98.59
		130.41			98.59

Part III: Devolution of old equipment to stores

Part IV - Part II = **31.82 lakhs**

Part IV: Removal of old asset

Rs. in lakhs

Sno	Name of the item	QTY	Original Cost	Original Erection Charges 10%	Original Centages 15%	Original Cost of Asset
1	16 MVA, 110/22kV Power Transformer	1	103.090	10.309	17.01	130.41
	Total					130.41

(**) 50% of 2024-25 Cost Data has been adopted

ABSTRACT

Part - I:Cost of new asset

RS IN LAKHS
GROSS 246.87
NETT 116.46

Part I(A):Dismantling charges

0.00

Part II:Accumulated Depreciation

98.59

Part III: Devolution of old equipment to stores

31.82

Part IV: Removal of old asset

130.41


Executive Engineer/Master Plan-I
TANTRANSCO