

TAMIL NADU TRANSMISSION CORPORATION LIMITED

ABSTRACT

TANTRANSCO – Replacement of existing failed 1 No.16 MVA, 10/33 kV Power Transformer IV by a healthy one and ratification for having replaced the same at Vaitheeswaran Koil 110/33-11 kV SS in Thanjavur Operation Circle (Nagapattinam EDC) of Thanjavur Region – Administrative approval – Accorded.

TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No. 199

Dated: 11.11.2025
Visuvaavasu Varudam
Aippasi -25
Thiruvalluvar Aandu 2056

READ: Chairman's approval dated 02.11.2025

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for replacement of existing failed 1No.16 MVA, 110/33 kV Power Transformer at Vaitheeswaran Koil 110/33-11 kV SS in Thanjavur Operation Circle (Nagapattinam EDC) of Thanjavur Region and ratification for having replaced the failed power transformer at an estimated cost of Rs.111.616 lakhs Gross and Rs.(-)17.551 lakhs. The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to TANTRANSCO - Funds - Capital Expenditure – Thanjavur Operation Circle (Nagapattinam EDC) - A/C code No: 1020400.
3. 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.

// BY ORDER OF THE CHAIRMAN//

J.PREMALATHA

CHIEF ENGINEER / TRANSMISSION

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Thanjavur Region

(Per) CH TANTRANSCO Proceedings No.199, dated : 11.11.2025

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/Transmission Projects/Trichy
- The Chief Engineer/System Operation/ Thanjavur
- The Superintending Engineer/Operation/Thanjavur
- The Superintending Engineer/Nagapattinam EDC
- The Superintending Engineer/GCC/Trichy
- The Superintending Engineer/Transmission -I/Chennai -2
- The Superintending Engineer/Transmission -II/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//

Heimath
11/11/2025
EXECUTIVE ENGINEER/MASTER PLAN II

Enclosure to (Per) CH TANTRANSCO Proceedings No. 199, dated : 11.11.2025

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages replacement of existing failed 1No.16 MVA, 110/33 kV Power Transformer at Vaitheeswaran Koil 110/33-11 kV SS in Thanjavur Operation Circle (Nagapattinam EDC) of Thanjavur Region and ratification for having replaced the failed power transformer at an estimated cost of Rs.111.616 lakhs Gross and Rs.(-)17.551 lakhs Nett.

Need:

At present, Vaitheeswaran Koil 110/33-11 kV SS is having 2x16 MVA, 110/33 kV power transformers and 2x16 MVA, 110/11 kV power transformers. The 16 MVA, 110/33 kV Venkateswara Electrical Ltd make power Transformer IV bearing serial No. VEI/16M/202 was in service at Vaitheeswaran Koil 110/33-11 kV SS from 06.01.2015.

The year of manufacture of the above power Transformer IV is 2014 and has served for about 10 years.

On 26.11.2024 at 20.25 hrs, the 33 kV Edamanal feeder (UG) got fault tripped and simultaneously LV and power Transformer IV got fault tripped due to activation of Buchholz relay alarm, Master relay, PRV and GC I got tripped following which the GC-II was hand tripped. The power Transformer IV was isolated from service. At the time of isolation of the failed power Transformer IV, the loads were managed with the existing power transformer III.

The MRT test was conducted IR test on 27.11.2024 and reported that HV to earth, LV to earth and HV to LV was short circuited and noticed oil spillover from main tank through PRV.

Oil sample was sent to R&D lab Trichy for DGA test on 27.11.2024. DGA test results showed abnormal increase in level of fault gases compared to previous test results, which could have been due to development of suspected high energy thermal/arcing fault inside the power transformer and hence recommended for internal examination of the power Transformer IV.

During internal examination on 28.11.2024, it was found that i) the oil was found heavily carbonized and smoke smell observed ii) copper granules were spread out over the core iii) all paper insulations burst out and spread out over core and link plate/terminals iv) neutral point of copper got burst out and loosened v) HV/LV coil suspected to be failed which could not be rectified at site and hence declared as failed.

The failed power transformer has been lifted by the repair contractor for carrying out rectification work at their site.

In order to normalize the supply, the failed unit was replaced by a healthy APEX Electrical Ltd make power transformer bearing Sl.No. T-930/03 of same capacity on 27.12.2024. Hence, this proposal has been evolved to regularize the replacement already made.

Details of works:

- Erection of 1 No. healthy 16 MVA, 110/33 kV power transformer at the existing Vaitheeswaran Koil 110/33-11 kV SS.
- Dismantling of failed 1 No. 16 MVA, 110/33 kV power transformer at the existing Vaitheeswaran Koil 110/33-11 kV SS.

J. Srinivas
11/11/2025
EXECUTIVE ENGINEER/MASTER PLAN II

Estimate for replacement of existing failed 16 MVA, 110/33 kV Power Transformer IV by a healthy one and ratification for having replaced the same at Vaitheeswaran Koil 110/33-11 kV SS in Thanjavur Operation Circle (Nagapattinam EDC) of Thanjavur Region

Rs in lakhs

Part - I: Cost of new asset

SL.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	16 MVA, 110/33 kV Power transformer (PO TR - C4/EXTN/ 09.03.1995) (Cost data 1994-95)	1 No.	95.000	E	95.000
2	Cost of materials				95.000
3	Labour charges	actuals			1.815
4	Sub total				96.816
5	Estt & supervision charges @ 15 % (Power Transformer only)				14.250
6	Dismantling charges	actuals			0.551
7	Gross				111.616
8	Less credit				129.167
9	Nett				-17.551

*Transport charges borne by the contractor

0.551 Lakhs

Part I(A):Dismantling charges

Part II:Accumulated Depreciation

SL. No.	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, 110/33 kV Power Transformer	129.17	25	10	46.500
		129.17			46.500

Part III: Devolution of old equipment to stores

Part IV - Part II =

129.17

- 46.50

82.67 lakhs

Part IV: Removal of old asset

Rs. in lakhs

SL. NO	Name of the item	QTY	Original Cost	Original Erection Charges 10%	Original Centage s 15%	Original Cost of Asset
1	16 MVA, 110/33 kV power Transformer (PO TR 2602/20.09.2014)	1	102.108	10.211	16.848	129.167
	Total					129.167

ABSTRACT

RS IN LAKHS

Part - I:Cost of new asset

GROSS 111.616

NETT -17.551

Part I(A):Dismantling charges

0.551

Part II:Accumulated Depreciation

46.500

Part III: Devolution of old equipment to stores

82.667

Part IV: Removal of old asset

129.167

16/11/2025
EXECUTIVE ENGINEER/MASTER PLAN II