TAMIL NADU TRANSMISSION CORPORATION LIMITED

ABSTRACT

TANTRANSCO – Enhancement of existing 110/33 kV Power transformer capacity from 2x16 MVA to 3x16 MVA at Murukkery 110/33/11 kV SS in Villupuram Operation Circle (Villupuram EDC) of Villupuram Region – Administrative approval – Accorded

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TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No. 42

Dated: 08.05.2026
Parabhaava Varudam
Chithirai - 25
Thiruvalluvar Aandu 2057

READ: Chairman's approval dated : 15.04.2026

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for enhancement of existing 110/33 kV Power transformer capacity from 2x16 MVA to 3x16 MVA at Murukkery 110/33/11 kV SS in Villupuram Operation Circle (Villupuram EDC) of Villupuram Region at an estimated cost of Rs.437.816 Lakhs Gross and Nett. The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to TANTRANSCO - Funds - Capital Expenditure – Villupuram Operation Circle (Villupuram 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.

4. The works will be taken up after ensuring necessary budget provision.

// BY ORDER OF THE CHAIRMAN//

J.PREMALATHA

CHIEF ENGINEER /TRANSMISSION

Encl: Report and detailed estimate.

To

The Chief Engineer/Distribution/Villupuram Region

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/TP & SO/ Chennai
The Superintending Engineer/Operation/ Villupuram
The Superintending Engineer/ Villupuram EDC
The Superintending Engineer/GCC-I/Chennai
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//

08/05/2016

EXECUTIVE ENGINEER/MASTER PLAN II

Enclosure to (Per) CH TANTRANSCO Proceedings No. 42 , dated : 08.05.2026

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages enhancement of existing 110/33 kV Power transformer capacity from 2x16 MVA to 3x16 MVA at Murukkery 110/33/11 kV SS in Villupuram Operation Circle (Villupuram EDC) of Villupuram Region at an estimated cost of Rs.437.816 Lakhs Gross and Nett.

Need:

Murukkery 110/33/11 kV SS is in service with 2x16 MVA, 110/33 kV and 2x8 MVA, 33/11 kV Power transformers. The sustained peak on the existing 2x16 MVA, 110/33 kV Power transformers is 28.5 MVA and is loaded to 89.06 % of its capacity.

At present, 33 kV supply from Murukkery 110 kV SS is extended to the following Substation:

Sl.No.	Name of the SS	Pr.Tr. capacity (MVA)	Sustained Peak in MVA
1	Murukkery 33/11 kV SS	2x8	11.02
2	Brammadesam 33/11 kV SS	2x8	15.25
3	Avanipur 33/11 kV SS	1x8	5.62
4	Marakkanam 33/11 kV SS	2x8	9.56

In addition to the above, it is proposed to extend supply to the newly proposed 33 kV Brammadesam II feeder (Prop : 5 MVA power transformer) and 33 kV Uppuvellore feeder (Extg : 8 MVA + Prop : 5 MVA power transformer) from Murukkery 110 kV SS.

The nearby substation to Murukkery 110/33/11 kV SS is Marakkanam 110/33-11 kV SS, which is having 2x16 MVA, 110/33 kV Power Transformers with a sustained peak of 17.15 MVA (53.59% loading) and is at a distance of 15.9 kms. The another nearby substation is Tindivanam 110/33-11 kV SS which is having 2x16 MVA, 110/33 kV Power Transformers with a sustained peak of 29.15 MVA (91.09% loading) and is at

a distance of 21.6 kms. The load transfer to both these nearby SS will lead to low voltage problem.

In order to accommodate the existing load and future proposed load of 18 MVA, it is essential to enhance the Power transformer from 2x16 MVA into 3x16 MVA at Murukkery 110/33/11 kV SS.

The SE/GCC-I/Chennai has certified that the space is adequate for provision of 1No. additional 16 MVA, 110/33 kV power transformer along with allied equipments, fire wall protection,etc., at Murukkery 110/33/11 kV SS.

Being TRANSCO scheme, provision for erecting 33 kV feeders has not been included in the estimate. Hence, the CE/Distribution/Villupuram Region may arrange to evolve the same separately and obtain the approval of the competent authority, separately.

Adequacy of Transmission system:

Details of the source SS:

a.	Name of the substation	Acharapakkam 230/110 kV SS
b.	230/110 kV Auto transformer capacity	3x100 MVA
c.	Present peak in MVA	182 MVA
d.	Whether Auto tr./feeder is adequate: As per the load flow study result, Source 230 kV substation is adequate to cater the proposed SS load.	

Details of Source Feeder:

a.	Name of the Feeder	110 kV Acharapakkam – Murukkery feeder
b.	Size of the Conductor	Panther : 84 MVA
c.	Present Loading in MVA	44.52 MVA
g.	Whether the Conductor size is adequate: As per the load flow study result, Source feeder is adequate to cater the proposed SS load.	

The proposed loads that will be incident after enhancement of power transformer as received from field is given below:

Sl. No.	Name of the SS/EHT feeder	Capacity/ Sanctioned load (MVA)	Present peak reached (MVA)	Load transfer to the enhanced transformer (MVA)	Anticipated peak (MVA)
1	Murukkery 110/33/11 kV SS	2x16, 110/33 kV	28.5 MVA	Extg load : 28.5 Proposed load : 18	46.5 MVA

Details of work involved:

- Erection of 1 No. 16 MVA, 110/33 kV Power transformer and its associated equipments at Murukkery 110 kV SS.
- Erection of 110 kV GC breaker and associated equipments at Murukkery 110 kV SS.

EXECUTIVE ENGINEER/MASTER PLAN II

Estimate for enhancement of existing 110/33 kV power transformer capacity from 2x16 MVA into 3x16 MVA at Murukkery 110/33/11 kV SS in Villupuram Operation Circle (Villupuram EDC)

S.No	DESCRIPTION	QTY	RATE	PER	AMOUNT in Lakhs	TOTAL in lakhs
I	**Civil Works**					
1	Civil works such as plinth for power transformer and other equipments, earth work excavation, Filling the yard with stone dust and 20 mm HBG metal, yard levelling, fire protection wall, cable duct, earth pit with water supply and road arrangements, painting,earthing,etc.				41.650	
2	Total (including contingencies @1%, Establishment & Supervision charges @15% & GST @18%)				57.084	**57.084**
II	**Electrical Works**					
1	110 kV AB Switch w/o earth	5 Nos	1.814	E	9.070	
2	110 kV SF6 breaker	1 No	5.648	E	5.648	
3	110 kV CT	3 Nos	1.665	E	4.995	
4	110 kV PT	3 Nos	1.125	E	3.375	
5	110 kV LAS (Station type)	3 Nos	0.323	E	0.969	
6	33 kV VCB (LV-1)	1 No	2.483	E	2.483	
7	33 kV AB switch	3 Nos.	0.395	E	1.185	
8	33 kV LAS (Station type)	3 Nos.	0.032	E	0.096	
9	33 kV CT	3 Nos.	0.261	E	0.783	
10	Control & Relay Panel			LS	10.000	
11	Control cable and conductor			LS	10.000	
12	Earthing and Yard lighting			LS	2.000	
13	110 and 33 kV Structure modification and re-engineering works (busbar arrangements, jumpering arrangements,clamps and connectors etc.)			LS	20.000	
14	Cost of materials				70.604	
15	Contingencies @1%				0.706	
16	Sub Total				71.310	
17	Labour & Transport Charges @ 15%				10.697	
18	Sub total for material, labour & transport (A)				82.007	
19	16 MVA, 110/33 kV Power transformer with OLTC	1 No.	188.012	E	188.012	
20	Labour & transport for transformer	1 loc	10.000	loc	10.000	
21	Earthing	1 loc	0.550	loc	0.550	
22	Sub total for material,labour & transport (B)				198.562	
23	Sub total (A)+(B)				280.569	
24	Establishment & Supervision charges @15%				42.085	
25	Sub total				322.654	
26	GST @18%				58.078	
27	Total Electrical				**380.732**	**380.732**
28	**Total (Civil & Electrical work)**				**437.816**	

08/05/2024

Executive Engineer/Master Plan II