

TAMIL NADU TRANSMISSION CORPORATION LIMITED

ABSTRACT

TANTRANSCO – Enhancement of 110/33 kV power transformer capacity from 2x16 MVA to 2x16+1x10 MVA at Nariganapuram 110/33/11 kV SS in Thiruvalam Operation Circle (Krishnagiri EDC) of Vellore Region – Administrative approval – Accorded

TECHNICAL BRANCH

(Per) CH TANTRANSCO Proceedings No. 53

Dated: 08.05.2026

Parabhaava Varudam

Chithirai - 25

Thiruvalluvar Aandu-2057

READ: Chairman's approval dated : 05.05.2026

PROCEEDINGS:

1. The Tamil Nadu Transmission Corporation Limited hereby approves the proposal for enhancement of 110/33 kV power transformer capacity from 2x16 MVA to 2x16+1x10 MVA at Nariganapuram 110/33/11 kV SS in Thiruvalam Operation Circle (Krishnagiri EDC) of Vellore Region at an estimated cost of Rs.312.077 Lakhs Gross and Nett. subject to the following conditions:
 - (i) Commissioning of 3x160 MVA, 230/110 kV auto transformer at Hosur 230/110 kV SS (ii) Commissioning of 3rd 1x160 MVA, 230/110 kV auto transformer at Uddanapally 230/110 kV SS (iii) Conversion of Gurubarapally-Bagalur-Hosur 110 kV feeder from SC line on SC tower to DC line on DC tower (from loc.1 to 58). The detailed estimate and report are annexed to these proceedings.
2. The expenditure is chargeable to TANTRANSCO - Funds - Capital Expenditure – Thiruvalam Operation Circle (Krishnagiri 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/Vellore Region

Copy to:

The Managing Director/TANTRANSCO, Chennai-2.

The Director/ Transmission Projects/TANTRANSCO, Chennai-2.

The Director/Operation/TANTRANSCO/Chennai -2

The Director /Finance/TANTRANSCO, Chennai-2

The Director /Distribution, TNPDC, Chennai-2.

The Director /Finance, TNPDC, Chennai-2

The Chief Engineer/TP & SO/Chennai -2

The Superintending Engineer /GCC/Salem

The Superintending Engineer/Operation/Thiruvallur

The Superintending Engineer/ Krishnagiri EDC

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//

J. Premalatha
08/05/2024

EXECUTIVE ENGINEER/MASTER PLAN II

Enclosure to (Per) CH TANTRANSCO Proceedings No. 53 dated :08.05.2026

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages enhancement of 110/33 kV power transformer capacity from 2x16 MVA to 2x16+1x10 MVA at Nariganapuram 110/33/11 kV SS in Thiruvallam Operation Circle (Krishnagiri EDC) of Vellore Region at an estimated cost of Rs.312.077 Lakhs Gross and Nett. subject to the following conditions:

(i) Commissioning of 3x160 MVA, 230/110 kV auto transformer at Hosur 230/110 kV SS (ii) Commissioning of 3rd 1x160 MVA, 230/110 kV auto transformer at Uddanapally 230/110 kV SS (iii) Conversion of Gurubarapally-Bagalur-Hosur 110 kV feeder from SC line on SC tower to DC line on DC tower (from loc.1 to 58).

Need:

Nariganapuram 110/33/11 kV SS is having 2x16 MVA, 110/33 kV power transformers and 2x8 MVA, 33/11 kV power transformers. The combined sustained peak reached on the existing 110/33 kV power transformers at this SS is 29.95 MVA which is loaded to 93.59 % of its capacity.

The nearby substation to Nariganapuram 110/33/11 kV SS is Bagalur 110/33-11 kV SS with 2x16 MVA, 110/33 kV power transformers and sustained peak of 21 MVA (65.62% loading) and is situated at a distance of 19.2 kms. Transfer of the loads is not feasible due to network orientation constraint.

The salient features of 33 kV feeders fed off from Nariganapuram 110/33/11 kV SS at present are given below:

Sl. No	Name of the 33 kV feeder	Length of feeder in kms	Name of the 33 kV SS/HT	Pr. Tr capacity/ HT demand in (MVA)	Sustained Peak in MVA
1	Nariganapuram	0.1	Nariganapuram 33/11 kV SS	2x8	14
2	Mudukurukki	13	Mudukurukki 33/11 kV SS	2x8	9.0
3	Berigai	8	Berigai 33/11 kV SS	2x8	10.0
			M/s.Venkateswara Hatcheries Ltd (Unit IV)	0.015	
			M/s.E.R.Textiles Ltd	0.16	
			M/s.Chemplast Sanmar Ltd	0.50	
4	Industrial	6	M/s.Venco Research and Breeding Farm Ltd	0.475	

		M/s.Venkateswara Hatcheries Ltd	0.20	
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The SE/GCC/Salem has reported that the space available at Nariganapuram 110/33/11 kV SS is adequate for erection of 1No.additional 10 MVA, 110/33 kV power transformer alongwith 1No. additional 110 kV GC breaker subject to the following conditions i) Provision shall be given for extension of 110 kV main and transformer strung bus with bus coupler arrangement ii) Provision shall be given for extension of 33 kV strung bus for LV arrangements.

Hence, in order (i) to avoid overloading of the existing power transformer and (ii) to meet the future load growth, enhancement of power transformer capacity from 2x16 MVA to 2x16+1x10 MVA at Nariganapuram 110/33/11 kV SS is very much essential and is the only economical way.

Adequacy of Transmission system:

Details of the source SS:

a	Name of the source SS	Uddanapally 230/110 kV SS
b	Capacity of the existing auto tr.	3x100 MVA
c	Present peak reached in MVA	232 MVA
d	Whether the auto tr. capacity is adequate: As per the load flow study results, source 230 kV SS/line loading are adequate to cater the proposed SS load after (i) Commissioning of 3x160 MVA, 230/110 kV auto transformer at Hosur 230/110 kV SS (ii) Commissioning of 3 rd 1x160 MVA, 230/110 kV auto transformer at Uddanapally 230/110 kV SS (iii) Conversion of Gurubarapaaly-Bagalur-Hosur 110 kV feeder from SC line on SC tower to DC line on DC tower from loc.1 to Bagalur 110 kV SS.	

Details of the source feeder:

a	Name of the feeder	110 kV Hosur – SIPCOT (Previously Uddanapally – Nariganapuram) feeder
b	Size/Loading capacity of the conductor	Panther – 84 MVA
c	Present loading in MVA	95 MVA
d	Whether the conductor is adequate:	As per the load flow study results, source 230 kV SS/line loading are adequate to cater the proposed SS load after (i) Commissioning of

		3x160 MVA, 230/110 kV auto transformer at Hosur 230/110 kV SS (ii) Commissioning of 3rd 1x160 MVA, 230/110 kV auto transformer at Uddanapally 230/110 kV SS (iii) Conversion of Gurubarapaaly-Bagalur-Hosur 110 kV feeder from SC line on SC tower to DC line on DC tower from loc.1 to Bagalur 110 kV SS.
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Present status of the conditions stated in Load Flow Study

(i) Commissioning of 3x160 MVA, 230/110 kV auto transformer at Hosur 230/110 kV SS work is under progress (ii) 3rd 1x100 MVA, 230/110 kV auto transformer at Uddanapally 230/110 kV SS was commissioned on 07.03.2026 (iii) Proposal for Revised administrative approval for floating of tender is at Transmission Headquarters.

SE/O/Thiruvalam has stated that the extension of 110kV Zuzuvadi – 2 feeder from Hosur 230kV SS is under progress and on completion of the work, the loads of Bagalur 110kV SS, Sevaganapalli 110kV SS and EHT service M/s. Exide now fed by 110kV Hosur – Sipcot Feeder of Uddanapally 230 kV SS will be transferred to 110 kV Zuzuvadi – 2 feeder of Hosur 230 kV SS. Hence after the load transfer, only the loads of Nariganapuram 110 kV SS will be connected in 110 kV Hosur – Sipcot Feeder thereby reducing line overloading.

Details of work:

- Erection of 1 no. 10 MVA, 110/33 kV power transformer and its associated equipments at Nariganapuram 110/33/11 kV SS.
- Erection of 1 No. 110 kV GC Breaker along with its associated equipments at Nariganapuram 110/33/11 kV SS.

[Handwritten Signature]
28/05/2026

EXECUTIVE ENGINEER/MASTER PLAN II

Estimate for enhancement of 110/33 kV power transformer capacity from 2x16 MVA into 2x16+1x10 MVA at Nariganapuram 110/33-11 kV SS in Thiruvalem Operation Circle (Krishnagiri EDC)

Sl. No	DESCRIPTION	QTY	RATE	PER	AMOUNT in Lakhs
1	110 kV AB Switch w/o earth	3 Nos	1.814	E	5.442
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 LAS	3 Nos	0.323	E	0.969
5	33 kV VCB for LV	1 No	2.483	E	2.483
6	33 kV AB switch	1 No	0.395	E	0.395
7	33 kV LAS (Station type)	3 Nos.	0.032	E	0.096
8	33 kV CT	3 Nos.	0.261	E	0.783
9	Control & Relay Panel			LS	10.000
10	Control cable			LS	10.000
11	Earthing,Painting and Yard lighting			LS	5.000
12	Fire protection wall	2 loc	5.000	loc	10.000
13	Plinth for breaker	2 Nos	2.000	LS	4.000
14	110 and 33 kV Structure modification and re-engineering works (busbar arrangements, jumpering arrangements,clamps and connectors etc.) inclusive of all			LS	20.000
15	Cost of materials				79.811
16	Contingencies @1%				0.798
17	Sub total				80.609
18	Labour & Transport Charges @ 15%				12.091
19	Sub total for material, labour & transport (A)				92.700
20	10 MVA, 110/33 kV Power transformer with OLTC	1 No.	123.725	E	123.725
21	Labour & transport for transformer	1 loc	10.000	loc	10.000
22	Plinth for transformer	1 loc	3.000	loc	3.000
23	Earthing	1 loc	0.550	loc	0.550
24	Sub total for material,labour & transport (B)				137.275
25	Sub total (A)+(B)				229.975
26	Establishment & Supervision charges @15%				34.496
27	Sub total				264.472
28	GST @18%				47.605
29	Total (Gross & Nett.)				312.077

[Signature]
Executive Engineer/Master Plan II