TAMIL NADU POWER DISTRIBUTION CORPORATION LTD.

ABSTRACT

Electricity – Madurai Region – Ramnad EDC – Replacement of failed 3.15 MVA and 3 MVA power transformers at Neeravi Karisalkulam Line tap 33/11 kV SS - Administrative approval - Accorded.

TECHNICAL BRANCH

(Per). MD.TNPDCL Proceedings No.114

Dated: 17.10.2025.
Krothi Varudum,
Puratasi: 31,
Thiruvalluvar Aandu 2056.

READ: Chairman Cum Managing Director's approval dated 15.10.2025.

PROCEEDINGS:

1. The Tamil Nadu Power Distribution Corporation Limited hereby approves the proposal for (i) replacement of failed Elin make 3 MVA power transformer by a healthy Vijay make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS (ii) replacement of failed Vijay make 3.15 MVA power transformer by a healthy Kirloskar make 3 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS and (iii) replacement of failed NEIL make 3 MVA power transformer by a healthy APEX make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS in Ramnad EDC of Madurai Region at an estimated cost of Rs.9.88 lakhs Gross and Rs.3.36 lakhs Nett. and ratifies the action of the Chief Engineer/ Distn./Madurai Region for having replaced the failed power transformers with a healthy power transformers in anticipation of the approval.

2. The expenditure is chargeable to TNPDCL - Funds - Capital Expenditure – Ramnad EDC – A/C code No: 10 20 400.

3. By virtue of the provisions contained in sub-section (2) (a) of section 185 of the Electricity Act, 2003, the TNPDCL being the 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 CMD//

J.PUSHPALATHA
CHIEF ENGINEER/ PLANNING & RC

Encl: Report and detailed estimate.

To

The Chief Engineer/Distn./Madurai Region.

Copy to:

The Director/Distribution/TNPDCL/Chennai-2
The Director/Finance/TNPDCL/Chennai-2
The Chief Engineer/MM/Chennai -2.
The Superintending Engineer/Ramnad EDC.
The Superintending Engineer/RE&I(D)/Chennai-2
The Company Secretary/TNPDCL/Chennai-2.
The Resident Audit Officer (AGO'S Unit) / Chennai –2
B.P.Section (Administrative Branch)
Stock file

//FORWARDED BY ORDER//

17/10/25

EXECUTIVE ENGINEER/MASTER PLAN II

Enclosure to (Per). MD.TNPDCL Proceedings No.114, dated: 17.10.2025.

REPORT TO ACCOMPANY THE ESTIMATE

This proposal envisages (i) replacement of failed Elin make 3 MVA power transformer by a healthy Vijay make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS (ii) replacement of failed Vijay make 3.15 MVA power transformer by a healthy Kirloskar make 3 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS and (iii) replacement of failed NEIL make 3 MVA power transformer by a healthy APEX make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS in Ramnad EDC of Madurai Region at an estimated cost of Rs.9.88 lakhs Gross and Rs.3.36 lakhs Nett. and ratification for the action of the Chief Engineer/ Distn./Madurai Region for having replaced the failed power transformers with a healthy power transformers in anticipation of the approval.

NEED:

Replacement of failed 3 MVA Elin make power transformer by a healthy Vijay make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS:

Neeravi Karisalkulam Line tap 33/11 kV SS was in service with 2x3 MVA Power Transformers. The 3 MVA Elin make power transformer bearing serial No.422369 was in service at Neeravi Karisalkulam Line tap 33/11 kV SS from 16.10.1996.

On 04.08.2020 at 16.15 hrs., the 'R' phase fuse provided on the HV side of the above power transformer blew out along with tripping of 33 kV Paralachi feeder at Muthuramalingapuram 110/33-11 kV SS. While charging the above transformer after replacement of HV side R phase fuse, abnormal rattling sound was noticed. Hence, the above power transformer was isolated from service.

Loads were managed with the existing other 3 MVA power transformer at Neeravi Karisalkulam LT 33/11 kV SS. The above power transformer has served 24 years at Neeravi Karisalkulam LT 33/11 kV SS. However, its year of manufacture is not known.

The MRT test revealed that the core balance test results were not satisfactory, which indicates that power transformer core is unbalanced. Considering the ageing of Power Transformer, condemnation of Power Transformer was recommended, as it has served its life period.

In order to normalize the supply, the failed unit was replaced by a healthy 3.15 MVA power transformer of Vijay make bearing serial No.10938 which got released from Sayalkudi 33/11 kV SS on 01.10.2020. Hence, this estimate has been evolved to regularize the replacement made already.

Replacement of failed Vijay make 3.15 MVA make power transformer by a healthy Kirloskar make 3 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS:

On 18.11.2020, the above Vijay make 3.15 MVA power transformer bearing serial No.10938 was declared faulty as the 33 kV side 'B' phase HG fuse was blown out with spurting out of oil in the explosion vent. Back feeding arrangement was made from the nearby Paralatchi 33/11 kV SS. The year of manufacture of the above power transformer is 1984 and has served 36 years.

The MRT test results revealed that all routine test results were normal when compared with the pre commissioning test values. DGA tests showed abnormal development of fault gases when compared with the previous test conducted on 30.09.2020 and arcing fault close to top cover of the Power Transformer was suspected.

Based on the recommendation in the DGA test results, open examination was carried out on 14.12.2020 and it was found that some of the leads were found cut and the 'R' phase winding was completely charred due to persisted arcing in OLTC tapping leads. Considering its ageing, it was concluded that the Power Transformer could not be repaired, as it is beyond economical repair.

Hence, in order to normalize the supply, the failed unit was replaced by a healthy 3 MVA power transformer of Kirloskar make bearing serial No. 3000A8224 which got released due to enhancement at Thiruvadanai 110 kV SS on 05.03.2021.

Replacement of failed Neil make 3 MVA make power transformer by a healthy Apex make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS:

The Neil make 3 MVA power transformer bearing Sl. No. Ry1980/6 is in service at Neeravi Karisalkulam 33/11 kV LT SS from 30.11.1974. On 22.07.2021, at 17.40 hrs., the 'Y' phase fuse provided on the HV side of the above power transformer was blown out.

While charging the above transformer after replacement of HV side Y phase fuse, the Y phase HG fuse again got blown out. Hence, the above power transformer was isolated from service. Back feeding arrangement was made from the nearby Paralatchi 33/11 kV SS. The year of manufacture of the above power transformer is not known and has served 47 years at Neeravi Karisalkulam 33/11 kV LT SS.

Based on the MRT test values, it was concluded that there was inter - turn short in HV 'R' phase winding due to internal fault and DGA test results revealed that the abnormal development of fault was due to high energy thermal / arcing fault. The power transformer was recommended for condemnation as it has served more than its full life period.

In order to normalize the supply, the failed unit was replaced by a healthy 3 MVA power transformer of Apex bearing serial No.T/441/27026 which got released due to enhancement at Thummakundu 33 kV SS on 27.08.2021. Hence, this estimate has been evolved to regularize the replacements made already.

In this regard, it is to be stated that establishment of Keelaramanathi 33/11 kV SS has been administratively approved (along with dismantling of Neeravi Karisalkulam 33/11 kV LT SS). Hence, on commissioning of Keelaramanathi 33/11 kV SS, entire loads of Neeravi Karisalkulam 33/11 kV LT SS will be transferred to the Keelaramanathi 33 kV SS and the above LT SS will be dismantled.

27/10/25

EXECUTIVE ENGINEER/MASTER PLAN II

ABSTRACT

SL. NO	DESCRIPTION	COST IN LAKHS	
		GROSS	NETT
1	Replacement of failed 3 MVA Elin make power transformer by a healthy Vijay make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS	3.08	0.91
2	Replacement of failed 3.15 MVA Vijay make power transformer by by a healthy Kirloskar make 3 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS	3.35	1.17
3	Replacement of failed 3 MVA Neil make power transformer by a healthy Apex make 3.15 MVA power transformer at Neeravi Karisalkulam Line tap 33/11 kV SS	3.45	1.28
4	Total	9.88	3.36

17/10/25

Executive Engineer/Master Plan II

ESTIMATE FOR REPLACEMENT OF THE FAILED 3 MVA ELIN MAKE POWER TRANSFORMER BY A HEALTHY VIJAY MAKE 3.15 MVA POWER TRANSFORMER AT NEERAVI KARISALKULAM LINE TAP 33/11 KV SS

Part - I: Cost of new asset — **Rs in lakhs**

SL.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	3.15 MVA, 33/11 kV power transformer *	1 No.	1.718	E	1.718
2	Cost of materials				1.718
3	Labour & Transport charges		actuals		0.918
4	Sub total				2.636
5	Estt & supervision charges @ 15 %				0.395
6	Dismantling charges		actuals		0.050
7	**Gross**				**3.08**
8	Less credit				2.17
9	**Nett**				**0.91**

* - As P.O. rate for 3.15 MVA Power Transformer is not available, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

Part I(A):Dismantling charges — **0.050** Lakhs

Part II:Accumulated Depreciation

SL. No.	Name of the item	Original cost	Total life in years	Life served in years	Accum. depre. 0.9(Cl.3x Cl.5/ Cl.4)
1	3 MVA, 33/11 kV power transformer	2.17	25	24	1.88
		2.17			**1.88**

Part III: Devolution of old equipment to stores

Part IV - Part II = 2.17 - 1.88 **0.30 lakhs**

Part IV: Removal of old asset — Rs. in lakhs

SL. NO	Name of the item	QTY	Original Cost	Original Erection Charges 10%	Original Centages 15%	Original Cost of Asset
1	3 MVA, 33/11 kV power transformer **	1	1.718	0.17	0.28	2.173
	Total					**2.17**

** - As P.O. rate for 3 MVA Power Transformer is not available & year of manufacture is also not known, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

ABSTRACT

	RS IN LAKHS	
Part - I:Cost of new asset	**GROSS**	**3.08**
	NETT	**0.91**
Part I(A):Dismantling charges		**0.050**
Part II:Accumulated Depreciation		**1.88**
Part III: Devolution of old equipment to stores		**0.30**
Part IV: Removal of old asset		**2.17**

ESTIMATE FOR REPLACEMENT OF FAILED 3.15 MVA VIJAY MAKE POWER TRANSFORMER BY A HEALTHY KIRLOSKAR MAKE 3 MVA POWER TRANSFORMER AT NEERAVI KARISALKULAM LINE TAP 33/11 KV SS

Part - I: Cost of new asset

Rs in lakhs

SL.NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	3 MVA, 33/11 kV power transformer*	1 No.	1.718	E	1.718
2	Cost of materials				1.718
3	Contigencies @ 1%				0.017
4	Sub total				1.735
5	Labour and Transport		(actuals)		1.16
6	Sub total				2.892
7	Estt & supervision charges @ 15 %				0.434
8	Dismantling charges		(actuals)		0.02
9	**Gross**				**3.35**
10	Less credit				2.17
11	**Nett**				**1.17**

* - As P.O. rate for 3 MVA Power Transformer is not available, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

Part I(A):Dismantling charges **0.02** Lakhs

Part II:Accumulated Depreciation

SL. No.	Name of the item	Original cost	Total life in years	Life served in years	Accum. depre. 0.9(Cl.3x Cl.5/ Cl.4)
1	3.15 MVA,33/11 kV power transformer	2.173	25	37	1.96
		2.17			**1.96**

Part III: Devolution of old equipment to stores

Part IV - Part II = **0.22 lakhs**

Part IV: Removal of old asset

Rs. in lakhs

SL. NO	Name of the item	QTY	Original Cost	Original Erection Charges 10%	Original Centages 15%	Original Cost of Asset
1	3.15 MVA, 33/11 kV power transformer **	1	1.72	0.17	0.28	2.173
	Total					**2.17**

** - As P.O. rate for 3.15 MVA Power Transformer is not available, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

ABSTRACT

	RS IN LAKHS	
Part - I:Cost of new asset	**GROSS**	**3.35**
	NETT	**1.17**
Part I(A):Dismantling charges		**0.02**
Part II:Accumulated Depreciation		**1.96**
Part III: Devolution of old equipment to stores		**0.22**
Part IV: Removal of old asset		**2.17**

ESTIMATE FOR REPLACEMENT OF FAILED 3 MVA NEIL MAKE POWER TRANSFORMER BY A HEALTHY APEX MAKE 3.15 MVA POWER TRANSFORMER AT NEERAVI KARISALKULAM LINE TAP 33/11 KV SS

Part - I: Cost of new asset

Rs in lakhs

SL. NO	DESCRIPTION	QTY	RATE	PER	AMOUNT
1	3.15 MVA, 33/11 kV power transformer*	1 No.	1.718	E	1.718
2	Cost of materials				1.718
3	Contigencies @ 1%				0.017
4	Sub total				1.735
5	Labour and Transport		(actuals)		1.24
6	Sub total				2.979
7	Estt & supervision charges @ 15 %				0.447
8	Dismantling charges		(actuals)		0.03
9	**Gross**				**3.45**
10	Less credit				2.17
11	**Nett**				**1.28**

* - As P.O. rate for 3.15 MVA Power Transformer is not available, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

Part I(A):Dismantling charges **0.025** Lakhs

Part II:Accumulated Depreciation

SL. No.	Name of the item	Original cost	Total life in years	Life served in years	Accum. depre. 0.9(Cl.3x Cl.5/ Cl.4)
1	3 MVA, 33/11 kV power transformer	2.173	25	47	1.96
		2.17			**1.96**

Part III: Devolution of old equipment to stores

Part IV - Part II = **0.22 lakhs**

Part IV: Removal of old asset

Rs. in lakhs

SL. NO	Name of the item	QTY	Original Cost	Original Erection Charges 10%	Original Centages 15%	Original Cost of Asset
1	3 MVA, 33/11 kV power transformer **	1	1.72	0.17	0.28	2.173
	Total					**2.17**

** - As P.O. rate for 3 MVA Power Transformer is not available, 50% of the rate for 3.15 MVA Power Transformer as per cost data 2006-07 has been adopted

ABSTRACT

	RS IN LAKHS	
Part - I:Cost of new asset	**GROSS**	**3.45**
	NETT	**1.28**
Part I(A):Dismantling charges		**0.025**
Part II:Accumulated Depreciation		**1.96**
Part III: Devolution of old equipment to stores		**0.22**
Part IV: Removal of old asset		**2.17**