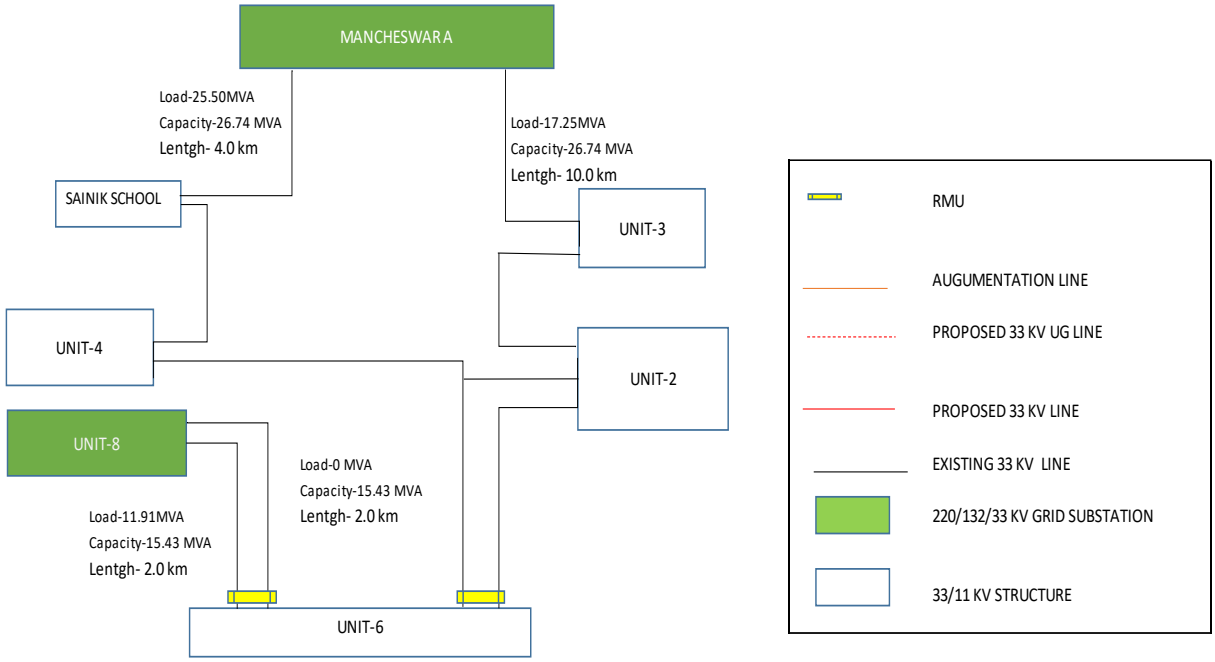
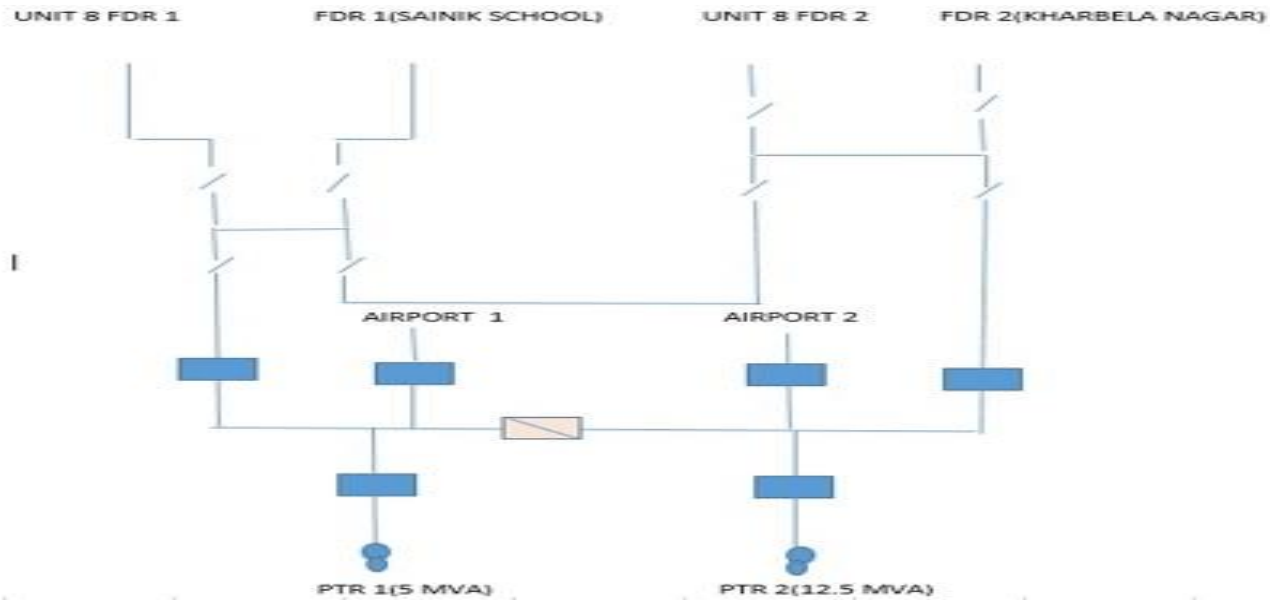
Refer 6.3.5 of the petition



LOAD FLOW DRAWING:



Detailed Scope of Work:

B. <u>Proposed RMU circuit:</u>

- Proposed 33 KV 4 way RMU at unit 6 structure. Unit 8 GIS 1 ,UNIT 8 GIS ,sainik school and kharbela nagar feeder are kept in isolator.

BOQ for this proposal

Refer 6.3.5 of the petition

Proposal for installation of 2 no.s of 4 Way 33KV -RMU at Unit 6.					
SL NO	DESCRIPTION	UOM	Quantity	rate	AMOUNT
1	4 WAY RMU FOR 33 KV and 3cx400 sqmm XLPE cable and accessories	LS	1	27,47,300.00	27,47,300.00
2	Design & constraction of Rcc foundation structure	EA	1	30,083.86	30,083.86
3	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	KG	3	1050	3,150.00
4	50X6 FLAT	KG	50	75	3,750.00
5	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	EA	1	40,000.00	40,000.00
6	Total Estimated Capital cost				28,24,283.86
7	Stock ,Storage &Insurance				84,728.52
8	Sub Total (A+B)				29,09,012.38
9	2% T & P charges of (A+B)				58,180.25
10	3% Contigency of (A+B)				87,270.37
11	7.5% Transportation charges of (A+B)				2,18,175.93
12	10% Errection Charges of (A+B)				2,90,901.24
13	Sub total (A to F)				35,63,540.16
14	Other over head (Including 6%) supervision charges of G				2,13,812.41
15	Total Estimated Capital cost (G+H)				37,77,352.57
16	GST @ 18% of H				6,79,923.46
17	CESS @1% of I				37,773.53
18	Inspection Fee				5575
19	Grand Total (I+J+K+L+M+N)				45,00,624.56
	FOR 2 NOS 4 WAY 33 KV RMU				***90,01,249.12***

Benefit of this proposals:

1. Mitigate N-1 and overloading for kharbelanagar and sainik school.
2. Utilize the unit 8 feeder 2.

Refer 6.3.5 of the petition

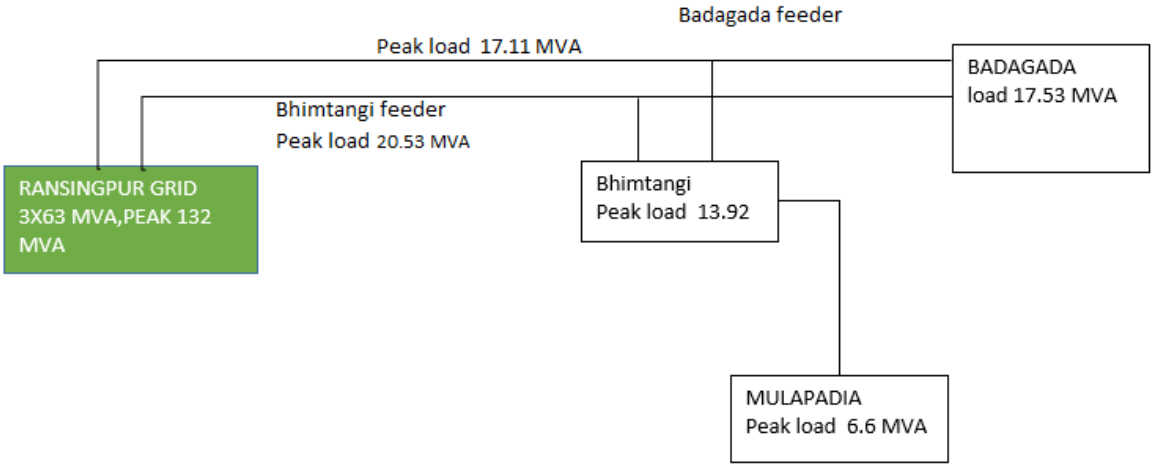
3. **Proposal:** Propose 2 no.s 33 KV 4 way RMU in Bhimtangi and Badagada feeder for reliable operation.

Objective: To maintain reliability of 33kv network and reduce time of power restoration.

Existing Scenario:

- At present, 2 no of 33kv feeders (i.e, Bhimtangi and Badagada feeders) are emanating from 33/11kv Ranasinghpur strcuture.
-

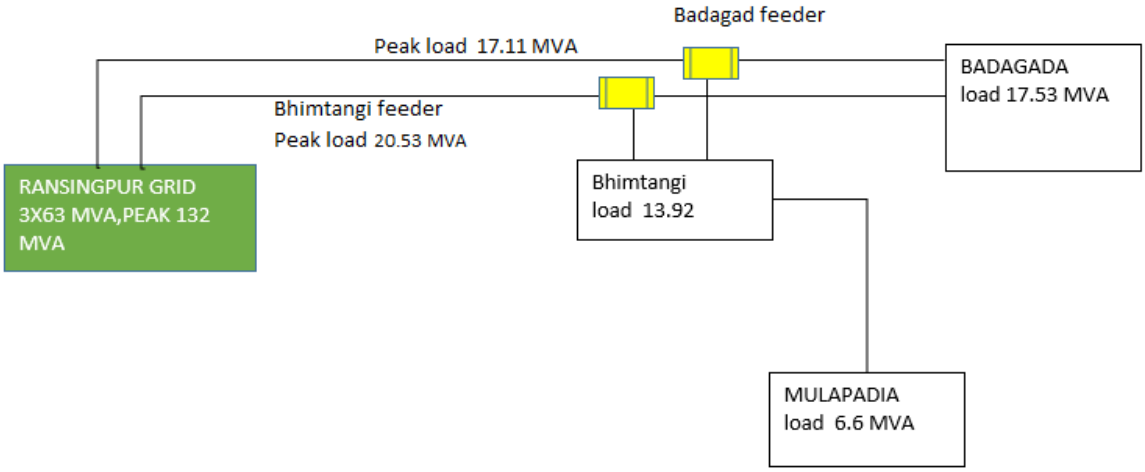
Existing SLD:



<u>Proposed Scenario</u>: -

- Proposed 2 nos 4 Way 33 kv RMU at Bhimtangi.

Proposed SLD:



Refer 6.3.5 of the petition

Detailed Scope of Work:

C. <u>Proposed RMU circuit:</u>

- Proposed 2 no of 33 KV way RMU at Nimapada.
- Propose 2 no.s DP for termination of 11kv HT cables to 33kv RMU.

BOQ-

Proposal for installation of 2 no.s of 3 way 33KV-RMU at Bhimtangi Structure					
SL NO.	DESCRIPTION	UOM	QTY	RATE	COST
1	3 WAY RMU FOR 33 KV WITH 3 CORE 400 SQMM UG CABLE AND OTHES ACCESSORIES	NO	1	23,47,300.00	23,47,300.00
2	Design & constraction of Rcc foundation structure	LS	1	30,083.86	30,083.86
3	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	NO	3	1050	3,150.00
4	50X6 FLAT	KG	50	75	3,750.00
5	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	LS	1	40,000.00	40,000.00
6	Total Estimated Capital cost				24,24,283.86
7	Stock ,Storage &Insurance				72,728.52
8	Sub Total (A+B)				24,97,012.38
9	2% T & P charges of (A+B)				49,940.25
10	3% Contigency of (A+B)				74,910.37
11	7.5% Transportation charges of (A+B)				1,87,275.93
12	10% Errection Charges of (A+B)				2,49,701.24
13	Sub total (A to F)				30,58,840.16
14	Other over head (Including 6%) supervision charges of G				1,83,530.41
15	Total Estimated Capital cost (G+H)				32,42,370.57
16	GST @ 18% of H				5,83,626.70
17	CESS @1% of I				32,423.71
18	Inspection Fee				5575
19	Grand Total (I+J+K+L+M+N)				38,63,995.98
20	FOR 2 NOS 33 KV RMU				77,27,991.96

Benefit of this proposals:

Ease of operation and time reduction for restoration of supply.

Refer 6.3.5 of the petition

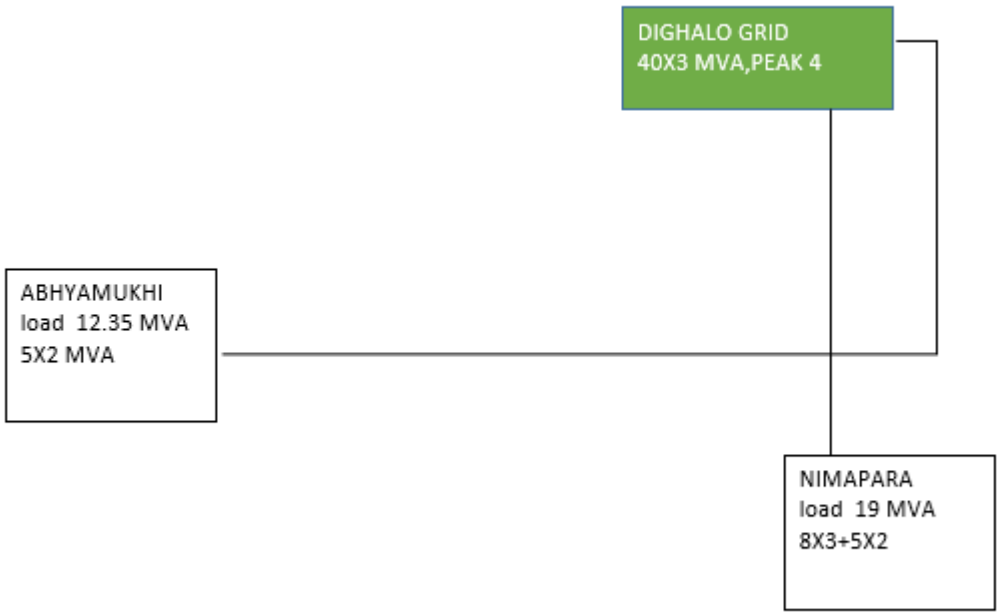
4. **Proposal: Propose 2 nos 33 KV 3 way RMU at Nimapada for reliable operation of Nimapada and Abhayamukhi feeder.**

Objective: To maintain reliability of 33kv network.

Existing Scenario:

- At present, 2 no of 33kv feeders (i.e, Nimapada and Abhayamukhi) are crossing at a place in Nimapada.
- 33/11kv Nimapada structure is getting feed from Nimapada Grid thru Nimapara feeder (Conductor size- 100sqmm). Peak load of Nimapada is 19MVA.
- 33/11KV Abhayamukhi structure is under construction in ODSSP scheme.
- To enhance the reliability of operation and reduce time of operation,

Existing SLD :

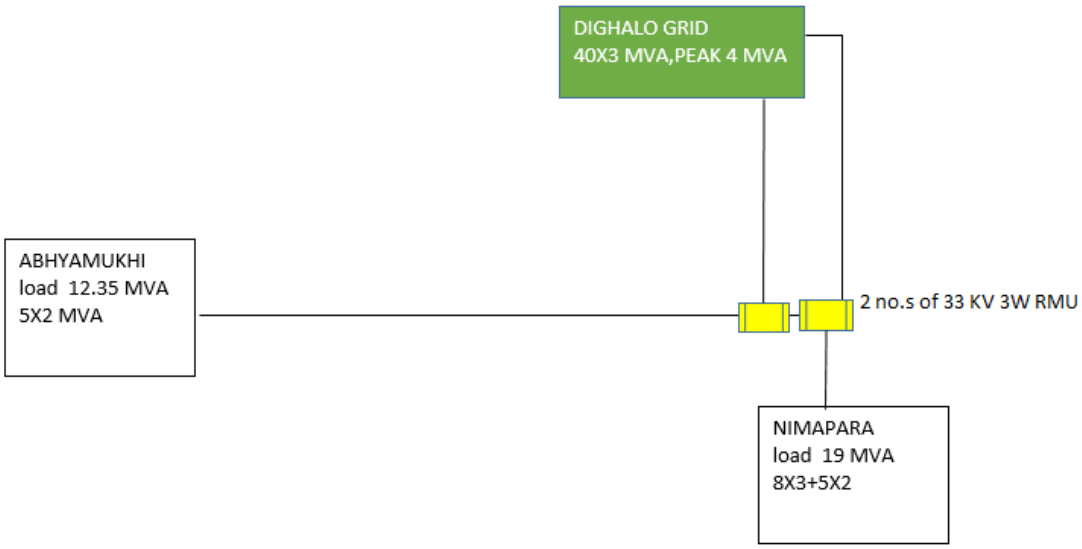


<u>Proposed Scenario</u>: -

- Proposed 2 nos 3 Way 33 kv RMU at Nimapada.

Proposed SLD:

Refer 6.3.5 of the petition



Detailed Scope of Work:

D. <u>Proposed RMU circuit:</u>

- Proposed 2 no of 33 KV way RMU at Nimapada.
- Propose 2 no.s DP for termination of 11kv HT cables to 33kv RMU.

BOQ for this proposal:

Refer 6.3.5 of the petition

Proposal for installation of 2 no.s of 3 Way 33KV-RMU at Nimapara					
SL NO.	DESCRIPTION	UOM	QTY	RATE	COST
1	3 WAY RMU FOR 33 KV WITH 3 CORE 400 SQMM UG CABLE AND OTHES ACCESSORIES	NO	1	23,47,300.00	23,47,300.00
2	Design & constraction of Rcc foundation structure	LS	1	30,083.86	30,083.86
3	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	NO	3	1050	3,150.00
4	50X6 FLAT	KG	50	75	3,750.00
5	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	LS	1	40,000.00	40,000.00
6	Total Estimated Capital cost				24,24,283.86
7	Stock ,Storage &Insurance				72,728.52
8	Sub Total (A+B)				24,97,012.38
9	2% T & P charges of (A+B)				49,940.25
10	3% Contigency of (A+B)				74,910.37
11	7.5% Transportation charges of (A+B)				1,87,275.93
12	10% Errection Charges of (A+B)				2,49,701.24
13	Sub total (A to F)				30,58,840.16
14	Other over head (Including 6%) supervision charges of G				1,83,530.41
15	Total Estimated Capital cost (G+H)				32,42,370.57
16	GST @ 18% of H				5,83,626.70
17	CESS @1% of I				32,423.71
18	Inspection Fee				5575
19	Grand Total (I+J+K+L+M+N)				38,63,995.98
20	FOR 2 NOS 33 KV RMU				77,27,991.96

Benefit of this proposals:

Ease of operation and time reduction for restoration of power supply.

Refer 6.3.5 of the petition

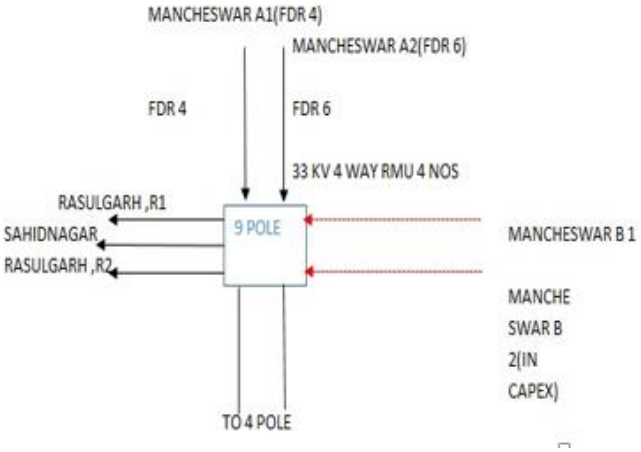
5. **Proposal: Propose 3 nos 33 KV 4 way RMU at 9 Pole for reliable operation of Mancheswar A grid (Fdr 4 and Fdr 6) and Mancheswar B grid (Rasulgarh 1&2).**

Objective: To maintain reliability of 33kv network.

Existing Scenario:

- At present, 2 nos feeders are incoming from mancheswar A and 1 nos feeder is incoming from Mancheswer B.
- One proposal for new feeder is from Mancheswer B to in 9 pole in capex plan.
- From 9 pole ,2 feeders are outgoing to 4 pole near laxmisagar.
- One connectivity is from 9 pole to sahidnagar.
- From 9 pole, 2 feeders are outgoing to Rasulgarh.

Existing SLD:

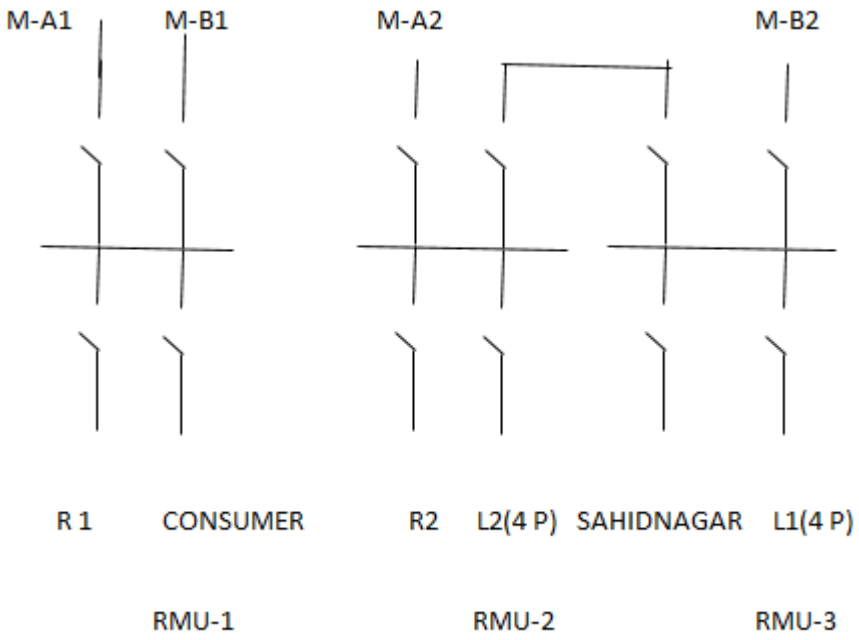


<u>Proposed Scenario</u>: -

- Proposed 3 nos 33 kv 4 way RMU at 9 pole.
- Presently 4 incomings are there and incoming from Mancheswar A and Mancheswar B has been kept in RMU 1 and other incoming from Mancheswar A has been kept at RMU 2 and other one incoming has been kept in RMU 3.

<u>Proposed SLD:-</u>

Refer 6.3.5 of the petition



Detailed Scope of Work:

E. <u>Proposed RMU circuit:</u>

- Proposed 3 nos 33 KV 4 way RMU at 9 pole.

BOQ for this proposal:

Refer 6.3.5 of the petition

Proposal for installation of 3 no.s of 4 Way 33KV-RMU at 9 Pole					
SL NO.	DESCRIPTION	UOM	QTY	RATE	COST
1	ACCESSORIES	NO	1	2747300	2747300
2	Design & constraction of Rcc foundation structure	LS	1	30083.86	30083.86
3	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	NO	3	1050	3150
4	50X6 FLAT	KG	50	75	3750
5	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	LS	1	40000	40000
6	Total Estimated Capital cost				2824283.86
7	Stock ,Storage &Insurance				84728.5158
8	Sub Total (A+B)				2909012.376
9	2% T & P charges of (A+B)				58180.24752
10	3% Contigency of (A+B)				87270.37127
11	7.5% Transportation charges of (A+B)				218175.9282
12	10% Errection Charges of (A+B)				290901.2376
13	Sub total (A to F)				3563540.16
14	Other over head (Including 6%) supervision charges of G				213812.4096
15	Total Estimated Capital cost (G+H)				3777352.57
16	GST @ 18% of H				679923.4626
17	CESS @1% of I				37773.5257
18	Inspection Fee				5575
19	Grand Total (I+J+K+L+M+N)				4500624.558
FOR 3 NOS 4 WAY 33 KV RMU					13501873.67

Benefit of this proposals:

Ease of operation and time reduction for restoration of power supply.

Refer 6.3.5 of the petition

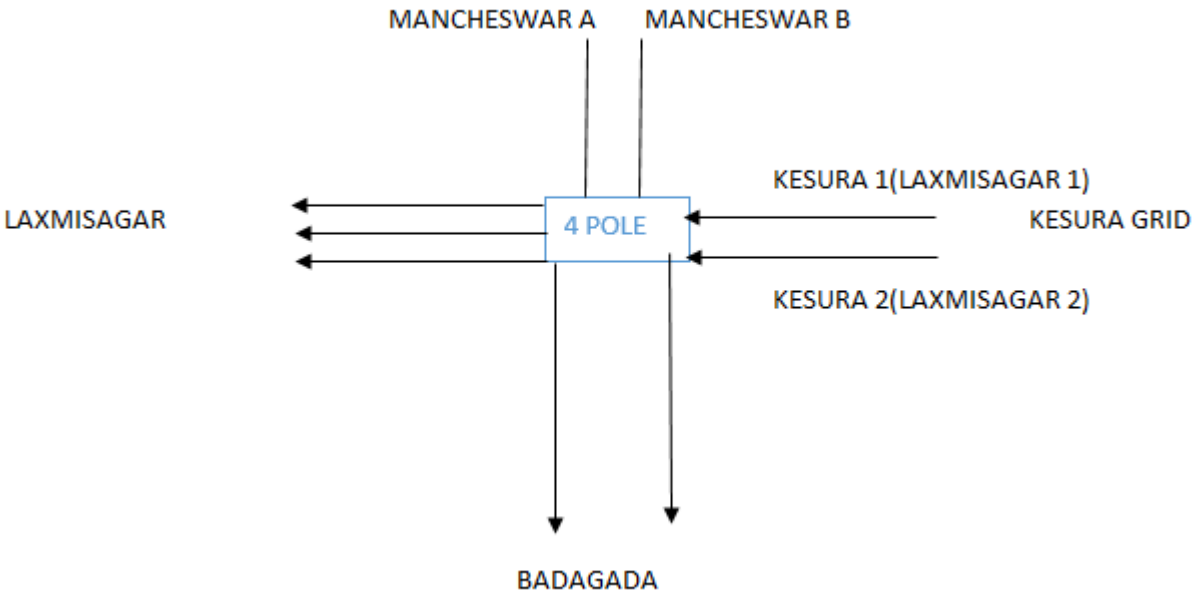
6. **Proposal: Propose 1 nos 33 KV 4 way 1 nos 33 KV 5 way RMU at 4 Pole for reliable operation at Laxmisagar.**

Objective: To maintain reliability of 33kv network.

Existing Scenario:

- There are 4 incomings to 4 pole near laxmisagar.
- For 4 incoming 2 are coming from Mancheswar –A and B via 9 pole and 2 are coming from Kesura Grid.
- At 4 pole, 2 outgoing for Badagada and 3 outgoing for Laxmisagar.

Existing SLD:-

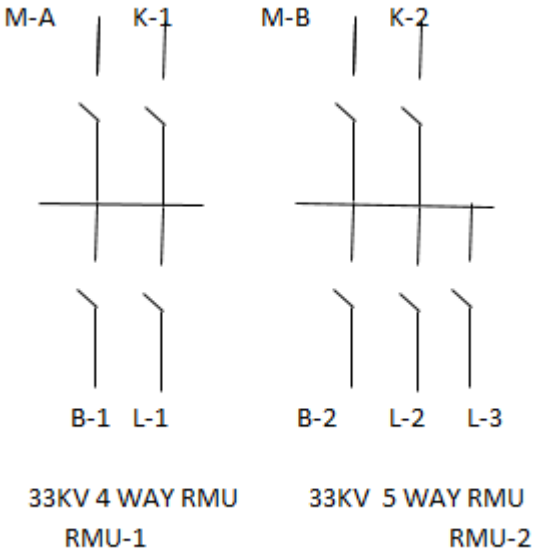


<u>Proposed Scenario</u>: -

- Proposed 1 nos 4 way and 1 nos 5 way RMU in place of 4 pole.
- Sources from Mancheswar-A and Kesura-1 will come in RMU-1 and Sources from Mancheswar–B and Kesura-2 will come in RMU-2

Proposed SLD

Refer 6.3.5 of the petition



Detailed Scope of Work:

F. <u>Proposed RMU circuit:</u>

- Proposed 1 nos 33 KV 4 way RMU and 1 nos 5 way 33 kv RMU at 4 pole for Ease of operation and time reduction for restoration of power supply.

BOQ for this proposal:

Refer 6.3.5 of the petition

Proposal for installation of 1 no. 4 Way 33kV-RMU and 1 no of 5 Way RMU at 4 Pole for Laxmisagar					
SL. NO.	DESCRIPTION	UOM	QTY	RATE	COST
1	4 WAY RMU FOR 33 KV and XLPE 3 core 400 sqmm ug cable with others accessories .	NO	1	23,47,300.00	23,47,300.00
2	5 WAY RMU FOR 33 KV and XLPE 3 core 400 sqmm ug cable with others accessories .	NO	1	33,47,300.00	33,47,300.00
3	Design & constraction of Rcc foundation structure	LS	2	30,083.86	60,167.72
4	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	NO	6	1050	6,300.00
5	50X6 FLAT	KG	100	75	7,500.00
6	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	LS	2	40,000.00	80,000.00
7	Total Estimated Capital cost				58,48,567.72
8	Stock ,Storage &Insurance				1,75,457.03
9	Sub Total (A+B)				60,24,024.75
10	2% T & P charges of (A+B)				1,20,480.50
11	3% Contigency of (A+B)				1,80,720.74
12	7.5% Transportation charges of (A+B)				4,51,801.86
13	10% Errection Charges of (A+B)				6,02,402.48
14	Sub total (A to F)				73,79,430.32
15	Other over head (Including 6%) supervision charges of G				4,42,765.82
16	Total Estimated Capital cost (G+H)				78,22,196.14
17	GST @ 18% of H				14,07,995.31
18	CESS @1% of I				78,221.96
19	Inspection Fee				5575
20	Grand Total (I+J+K+L+M+N)				93,13,988.41

Benefit of this proposals:

Ease of operation and time reduction for restoration of power supply.

Refer 6.3.5 of the petition

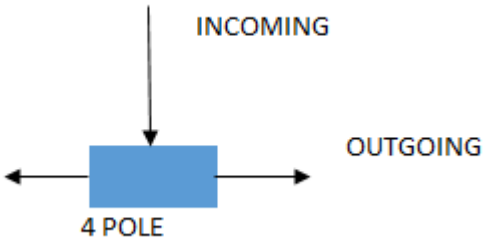
7. **Proposal: Propose 11 nos 33 KV 4 way RMU at Different T-point in Bhubanewar for reliable operation .**

Objective: To maintain reliability of 33kv network.

Existing Scenario:

- At present various feeders are connected to the trunk feeder at T-off point. During shutdown it takes longer time to restore the power. So it is proposed to install 33 kv 4 way RMU at T off point.

Existing SLD



<u>Proposed Scenario</u>: -

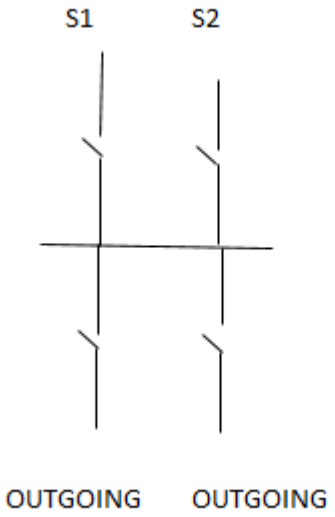
- Proposed 4 way 33 KV RMU at T-off point .

Locations for proposed 33 KV 4 way RMU:

1. **Delta T-point 1 nos.**
2. **Unit 2 T-point 1 nos.**
3. **Khandagiri T-point 2 nos .**
4. **Bharatpur T-point 2 nos.**
5. **Dumduma T-point 2 nos.**
6. **Kalinganagar- 1no.s**
7. **Kalpana T point- 1 no**
8. **ESI T point – 1no.s**

Proposed SLD:

Refer 6.3.5 of the petition



Detailed Scope of Work:

G. <u>Proposed RMU circuit:</u>

- Proposed 11 nos 33 KV 4 way RMU at T-off point for different point in BBSR 1.

BOQ for this proposal:

Refer 6.3.5 of the petition

Conversion from T point to 33KV RMU- Total 11 no.s location at Bharatpur (2 no.s), Dumduma (2no.s), Unit-					
SL NO	DESCRIPTION	UOM	QTY	RATE	COST
1	4WAY RMU FOR 33 KV and 3 core 400 sqmm XLPE cable with all accessories.	NO	1	27,47,300.00	27,47,300.00
2	Design & constraction of Rcc foundation structure	LS	1	30,083.86	30,083.86
3	40mm dia GI pipe earthing device 3 mtr. Long(1050*3)	NO	3	1,050.00	3,150.00
4	50X6 FLAT	KG	50	75.00	3,750.00
5	Design & providing Galvenised fencing around RMUs to prevent public coming in contact with compact substation	LS	1	40,000.00	40,000.00
6	Total Estimated Capital cost				28,24,283.86
7	Stock ,Storage &Insurance				84,728.52
8	Sub Total (A+B)				29,09,012.38
9	2% T & P charges of (A+B)				58,180.25
10	3% Contigency of (A+B)				87,270.37
11	7.5% Transportation charges of (A+B)				2,18,175.93
12	10% Errection Charges of (A+B)				2,90,901.24
13	Sub total (A to F)				35,63,540.16
14	Other over head (Including 6%) supervision charges of G				2,13,812.41
15	Total Estimated Capital cost (G+H)				37,77,352.57
16	GST @ 18% of H				6,79,923.46
17	CESS @1% of I				37,773.53
18	Inspection Fee				5575
19	Grand Total (I+J+K+L+M+N)				45,00,624.56
TOTAL COST FOR 11 NOS 4 WAY RMU					4,95,06,870.14

Benefit of this proposals:

Ease of operation and time reduction for restoration of power supply.