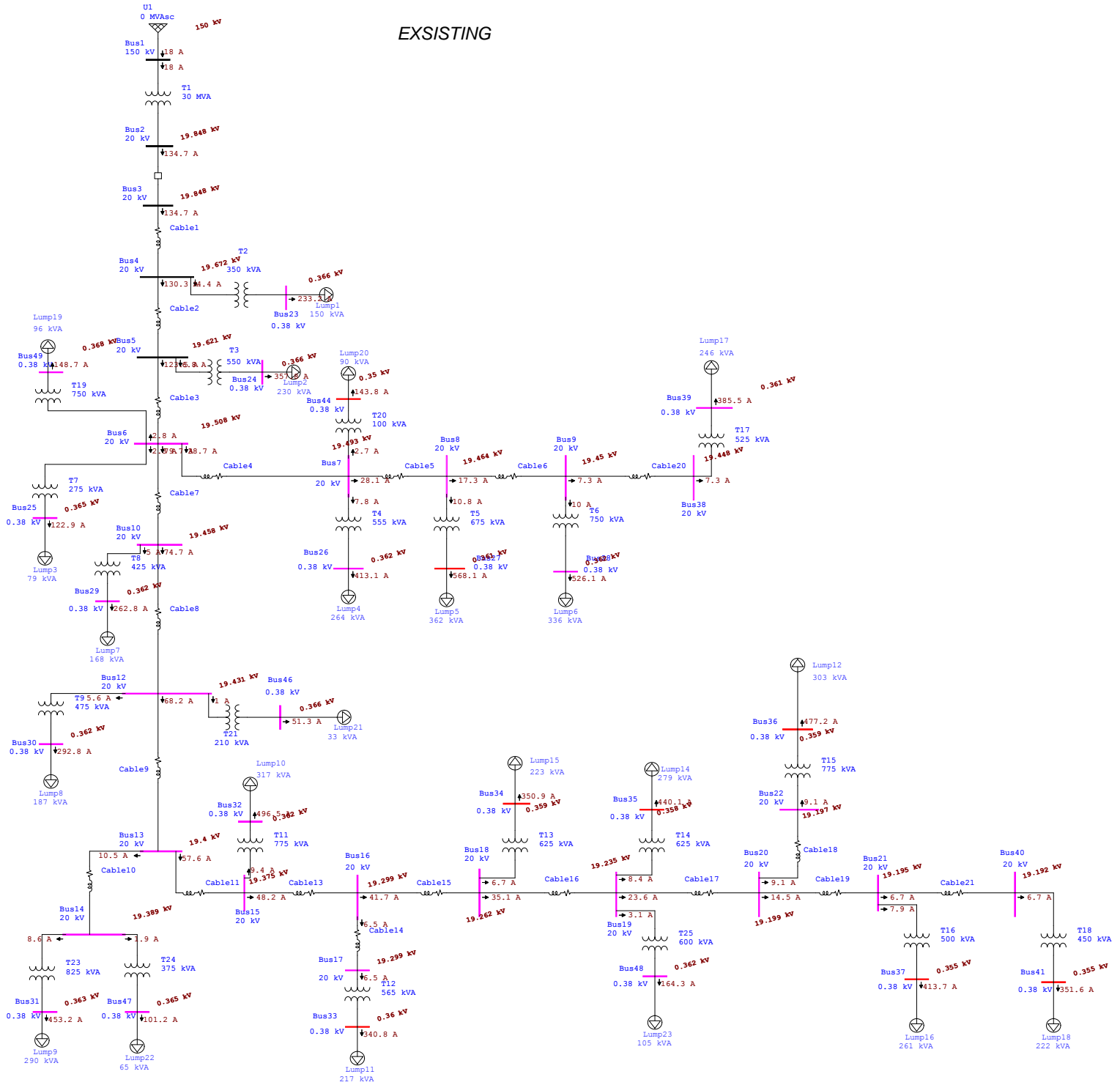


## LAMPIRAN

# One-Line Diagram - OLV1 (Load Flow Analysis)

EXISTING



**EXISTING**

Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: existing condition

**ETAP**  
 12.6.0H

Study Case: LF

Page: 1  
 Date: 11-02-2018  
 SN:  
 Revision: Base  
 Config.: Normal

**Branch Losses Summary Report**

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T1	4.085	2.259	-4.082	-2.190	2.9	68.9	100.0	99.2	0.76
Cable1	4.082	2.190	-4.049	-2.164	32.4	26.4	99.2	98.4	0.88
Cable2	3.915	2.095	-3.906	-2.087	9.1	7.4	98.4	98.1	0.26
T2	0.134	0.069	-0.133	-0.064	1.4	4.3	98.4	96.3	2.07
Cable3	3.700	1.982	-3.681	-1.966	19.1	15.5	98.1	97.5	0.56
T3	0.206	0.105	-0.204	-0.099	1.7	6.6	98.1	96.2	1.88
Cable4	1.156	0.610	-1.155	-0.610	0.8	0.7	97.5	97.5	0.08
Cable7	2.374	1.270	-2.369	-1.265	5.4	4.4	97.5	97.3	0.25
T7	0.071	0.035	-0.070	-0.034	0.5	1.5	97.5	96.2	1.38
T19	0.081	0.051	-0.081	-0.050	0.2	0.8	97.5	96.9	0.64
Cable5	0.843	0.436	-0.842	-0.436	1.3	0.7	97.5	97.3	0.15
T4	0.235	0.122	-0.233	-0.113	2.2	8.7	97.5	95.3	2.16
T20	0.076	0.052	-0.074	-0.046	2.3	5.6	97.5	92.2	5.23
Cable6	0.519	0.268	-0.519	-0.267	0.4	0.2	97.3	97.3	0.07
T5	0.323	0.168	-0.319	-0.155	3.4	13.6	97.3	94.9	2.45
Cable20	0.219	0.113	-0.219	-0.113	0.0	0.0	97.3	97.2	0.01
T6	0.299	0.154	-0.297	-0.144	2.6	10.5	97.3	95.2	2.03
Cable8	2.219	1.189	-2.216	-1.187	2.8	2.3	97.3	97.2	0.14
T8	0.150	0.076	-0.148	-0.072	1.5	4.5	97.3	95.4	1.92
Cable9	2.021	1.084	-2.019	-1.082	2.8	2.3	97.2	97.0	0.15
T9	0.167	0.085	-0.165	-0.080	1.6	5.0	97.2	95.2	1.91
T21	0.028	0.017	-0.028	-0.017	0.1	0.3	97.2	96.3	0.83
Cable10	0.312	0.166	-0.312	-0.166	0.2	0.1	97.0	96.9	0.05
Cable11	1.706	0.916	-1.704	-0.914	2.0	1.6	97.0	96.9	0.13
T23	0.258	0.131	-0.256	-0.124	1.2	7.2	96.9	95.5	1.44
T24	0.055	0.034	-0.054	-0.034	0.2	0.8	96.9	96.0	0.92
Cable13	1.423	0.770	-1.418	-0.766	5.0	4.1	96.9	96.5	0.38
T11	0.282	0.145	-0.280	-0.136	1.6	9.2	96.9	95.2	1.69
Cable14	0.193	0.098	-0.193	-0.098	0.0	0.0	96.5	96.5	0.00
Cable15	1.225	0.667	-1.223	-0.665	2.1	1.7	96.5	96.3	0.19
T12	0.193	0.098	-0.191	-0.093	1.5	5.8	96.5	94.8	1.75
Cable16	1.036	0.545	-1.034	-0.544	1.4	0.8	96.3	96.2	0.13
T13	0.187	0.121	-0.185	-0.115	1.4	5.6	96.3	94.5	1.81
Cable17	0.699	0.361	-0.698	-0.360	1.3	0.7	96.2	96.0	0.18
T14	0.248	0.128	-0.245	-0.119	2.2	8.8	96.2	94.1	2.04

Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: existing condition

**ETAP**  
 12.6.0H

Study Case: LF

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 Revision: Base  
 Config.: Normal

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T25	0.088	0.056	-0.088	-0.054	0.3	1.3	96.2	95.3	0.88
Cable18	0.268	0.138	-0.268	-0.138	0.0	0.0	96.0	96.0	0.01
Cable19	0.429	0.222	-0.429	-0.222	0.1	0.0	96.0	96.0	0.02
Cable21	0.197	0.102	-0.197	-0.102	0.0	0.0	96.0	96.0	0.01
T16	0.232	0.120	-0.229	-0.111	3.1	9.5	96.0	93.4	2.58
T15	0.268	0.138	-0.267	-0.129	1.5	8.5	96.0	94.4	1.62
T17	0.219	0.113	-0.217	-0.105	2.0	8.0	97.2	95.1	2.13
T18	0.197	0.102	-0.195	-0.094	2.5	7.6	96.0	93.5	2.43
					124.2	271.7			

Project:  
Location:  
Contract:  
Engineer:  
Filename: existing condition

**ETAP**  
12.6.0H  
Study Case: LF

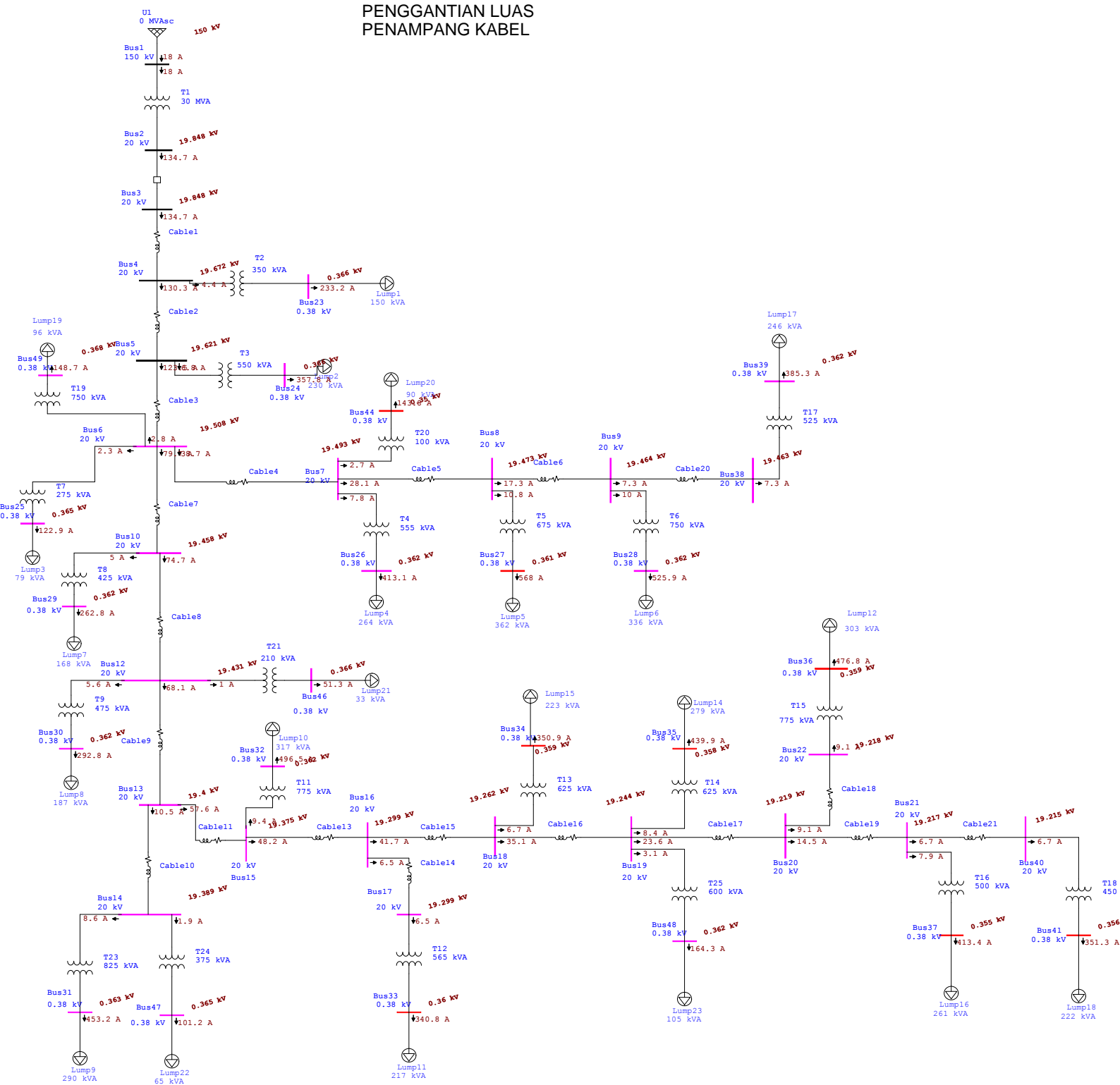
Page: 3  
Date: 11-02-2018  
SN:  
Revision: Base  
Config.: Normal

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# One-Line Diagram - OLV1 (Load Flow Analysis)

## PENGGANTIAN LUAS PENAMPANG KABEL



# One-Line Diagram - OLV1 (Load Flow Analysis)

---

kVA

6 kV

A

**PENGGANTIAN LUAS  
PENAMPANG KABEL**

Project:  
Location:  
Contract:  
Engineer:  
Filename: try perbaikan kabel

**ETAP**  
**12.6.0H**  
  
Study Case: LF

Page: 1  
Date: 11-02-2018  
SN:  
Revision: Base  
Config.: Normal

**Branch Losses Summary Report**

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T1	4.083	2.259	-4.081	-2.190	2.9	68.9	100.0	99.2	0.76
Cable1	4.081	2.190	-4.048	-2.164	32.4	26.4	99.2	98.4	0.88
Cable2	3.914	2.095	-3.905	-2.087	9.1	7.4	98.4	98.1	0.26
T2	0.134	0.069	-0.133	-0.064	1.4	4.3	98.4	96.3	2.07
Cable3	3.699	1.982	-3.680	-1.966	19.1	15.5	98.1	97.5	0.56
T3	0.206	0.105	-0.204	-0.099	1.7	6.6	98.1	96.2	1.88
Cable4	1.155	0.610	-1.154	-0.610	0.8	0.7	97.5	97.5	0.08
Cable7	2.373	1.270	-2.368	-1.265	5.4	4.4	97.5	97.3	0.25
T7	0.071	0.035	-0.070	-0.034	0.5	1.5	97.5	96.2	1.38
T19	0.081	0.051	-0.081	-0.050	0.2	0.8	97.5	96.9	0.64
Cable5	0.842	0.436	-0.842	-0.436	0.8	0.6	97.5	97.4	0.10
T4	0.235	0.122	-0.233	-0.113	2.2	8.7	97.5	95.3	2.16
T20	0.076	0.052	-0.074	-0.046	2.3	5.6	97.5	92.2	5.23
Cable6	0.519	0.268	-0.519	-0.267	0.2	0.2	97.4	97.3	0.05
T5	0.323	0.168	-0.319	-0.155	3.4	13.5	97.4	94.9	2.45
Cable20	0.219	0.113	-0.219	-0.113	0.0	0.0	97.3	97.3	0.01
T6	0.299	0.154	-0.297	-0.144	2.6	10.5	97.3	95.3	2.03
Cable8	2.218	1.189	-2.215	-1.187	2.8	2.3	97.3	97.2	0.14
T8	0.150	0.076	-0.148	-0.072	1.5	4.5	97.3	95.4	1.92
Cable9	2.021	1.084	-2.018	-1.082	2.8	2.3	97.2	97.0	0.15
T9	0.167	0.085	-0.165	-0.080	1.6	5.0	97.2	95.2	1.91
T21	0.028	0.017	-0.028	-0.017	0.1	0.3	97.2	96.3	0.83
Cable10	0.312	0.166	-0.312	-0.166	0.2	0.1	97.0	96.9	0.05
Cable11	1.705	0.916	-1.703	-0.914	2.0	1.6	97.0	96.9	0.13
T23	0.258	0.131	-0.256	-0.124	1.2	7.2	96.9	95.5	1.44
T24	0.055	0.034	-0.054	-0.034	0.2	0.8	96.9	96.0	0.92
Cable13	1.422	0.770	-1.417	-0.766	5.0	4.1	96.9	96.5	0.38
T11	0.282	0.145	-0.280	-0.136	1.6	9.2	96.9	95.2	1.69
Cable14	0.193	0.098	-0.193	-0.098	0.0	0.0	96.5	96.5	0.00
Cable15	1.224	0.667	-1.222	-0.665	2.1	1.7	96.5	96.3	0.19
T12	0.193	0.098	-0.191	-0.093	1.5	5.8	96.5	94.8	1.75
Cable16	1.035	0.545	-1.034	-0.544	0.9	0.7	96.3	96.2	0.09
T13	0.187	0.121	-0.185	-0.115	1.4	5.6	96.3	94.5	1.81
Cable17	0.699	0.361	-0.698	-0.360	0.8	0.6	96.2	96.1	0.12
T14	0.248	0.128	-0.245	-0.119	2.2	8.8	96.2	94.2	2.04



Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: try perbaikan kabel

**ETAP**  
 12.6.0H

Study Case: LF

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 Revision: Base  
 Config.: Normal

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T25	0.088	0.056	-0.088	-0.054	0.3	1.3	96.2	95.3	0.88
Cable18	0.268	0.138	-0.268	-0.138	0.0	0.0	96.1	96.1	0.00
Cable19	0.429	0.222	-0.429	-0.222	0.1	0.0	96.1	96.1	0.01
Cable21	0.197	0.102	-0.197	-0.102	0.0	0.0	96.1	96.1	0.01
T16	0.232	0.120	-0.229	-0.111	3.1	9.5	96.1	93.5	2.58
T15	0.268	0.138	-0.267	-0.129	1.5	8.5	96.1	94.5	1.62
T17	0.219	0.113	-0.217	-0.105	2.0	8.0	97.3	95.2	2.13
T18	0.197	0.102	-0.195	-0.094	2.5	7.6	96.1	93.6	2.43
					122.4	271.4			

Project:  
Location:  
Contract:  
Engineer:  
Filename: try perbaikan kabel

**ETAP**  
12.6.0H  
Study Case: LF

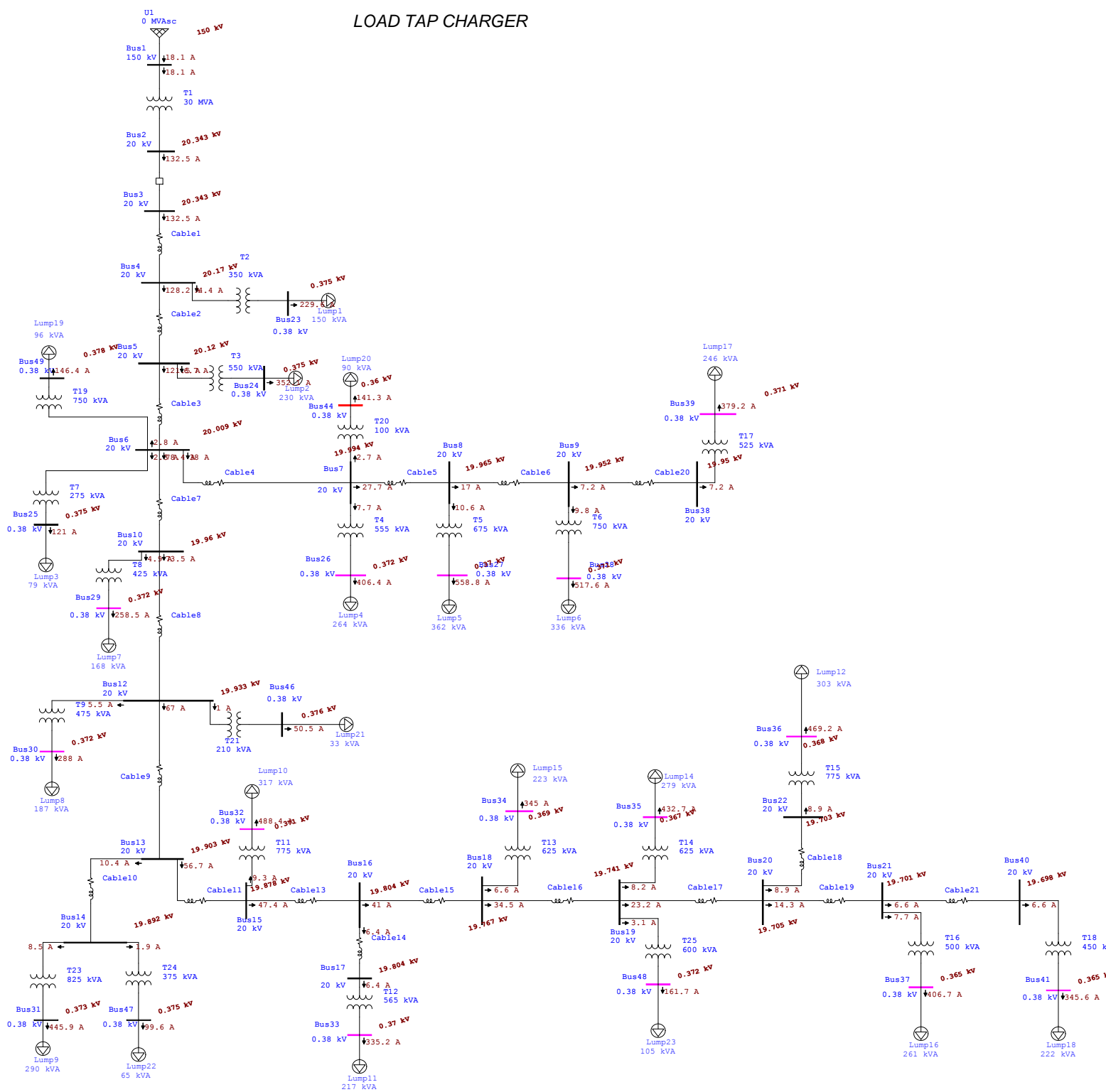
Page: 3  
Date: 11-02-2018  
SN:  
Revision: Base  
Config.: Normal

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# One-Line Diagram - OLV1 (Load Flow Analysis)

## LOAD TAP CHARGER



# LOAD TAP CHANGER

Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: LTP setting condition

**ETAP**  
 12.6.0H

Study Case: LF

Page: 1  
 Date: 11-02-2018  
 SN:  
 Revision: Base  
 Config.: Normal

## Branch Losses Summary Report

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T1	4.120	2.273	-4.117	-2.203	3.0	70.1	100.0	101.7	1.71
Cable1	4.117	2.203	-4.086	-2.178	31.4	25.6	101.7	100.8	0.87
Cable2	3.950	2.108	-3.942	-2.101	8.8	7.2	100.8	100.6	0.25
T2	0.136	0.069	-0.134	-0.065	1.4	4.2	100.8	98.8	2.04
Cable3	3.734	1.995	-3.716	-1.980	18.5	15.0	100.6	100.0	0.56
T3	0.208	0.106	-0.206	-0.100	1.6	6.4	100.6	98.7	1.85
Cable4	1.167	0.614	-1.166	-0.614	0.8	0.6	100.0	100.0	0.07
Cable7	2.396	1.279	-2.391	-1.274	5.3	4.3	100.0	99.8	0.25
T7	0.071	0.036	-0.071	-0.034	0.5	1.5	100.0	98.7	1.36
T19	0.082	0.051	-0.081	-0.050	0.2	0.8	100.0	99.4	0.63
Cable5	0.851	0.439	-0.850	-0.439	1.2	0.6	100.0	99.8	0.14
T4	0.238	0.123	-0.236	-0.114	2.1	8.4	100.0	97.8	2.12
T20	0.077	0.052	-0.075	-0.046	2.2	5.4	100.0	94.8	5.14
Cable6	0.524	0.269	-0.524	-0.269	0.3	0.2	99.8	99.8	0.07
T5	0.326	0.169	-0.322	-0.156	3.3	13.1	99.8	97.4	2.40
Cable20	0.221	0.114	-0.221	-0.114	0.0	0.0	99.8	99.7	0.01
T6	0.302	0.155	-0.300	-0.145	2.6	10.1	99.8	97.8	2.00
Cable8	2.239	1.197	-2.237	-1.195	2.7	2.2	99.8	99.7	0.13
T8	0.151	0.077	-0.150	-0.073	1.4	4.4	99.8	97.9	1.89
Cable9	2.040	1.092	-2.038	-1.090	2.7	2.2	99.7	99.5	0.15
T9	0.168	0.086	-0.167	-0.081	1.6	4.9	99.7	97.8	1.88
T21	0.028	0.018	-0.028	-0.017	0.1	0.3	99.7	98.8	0.82
Cable10	0.316	0.167	-0.315	-0.167	0.2	0.1	99.5	99.5	0.05
Cable11	1.722	0.922	-1.720	-0.921	2.0	1.6	99.5	99.4	0.13
T23	0.260	0.132	-0.259	-0.125	1.2	6.9	99.5	98.0	1.42
T24	0.055	0.035	-0.055	-0.034	0.2	0.7	99.5	98.6	0.90
Cable13	1.436	0.775	-1.431	-0.771	4.8	3.9	99.4	99.0	0.37
T11	0.284	0.146	-0.283	-0.137	1.5	8.9	99.4	97.7	1.66
Cable14	0.195	0.099	-0.195	-0.099	0.0	0.0	99.0	99.0	0.00
Cable15	1.236	0.672	-1.234	-0.670	2.0	1.7	99.0	98.8	0.18
T12	0.195	0.099	-0.193	-0.094	1.4	5.6	99.0	97.3	1.72
Cable16	1.046	0.549	-1.044	-0.548	1.4	0.7	98.8	98.7	0.13
T13	0.189	0.122	-0.187	-0.116	1.4	5.4	98.8	97.1	1.78
Cable17	0.706	0.363	-0.704	-0.363	1.3	0.7	98.7	98.5	0.18
T14	0.250	0.129	-0.248	-0.120	2.1	8.5	98.7	96.7	2.01

Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: LTP setting condition

**ETAP**  
 12.6.0H

Study Case: LF

Page: 2  
 Date: 11-02-2018  
 SN:  
 Revision: Base  
 Config.: Normal

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T25	0.089	0.056	-0.088	-0.055	0.3	1.2	98.7	97.8	0.86
Cable18	0.271	0.139	-0.271	-0.139	0.0	0.0	98.5	98.5	0.01
Cable19	0.433	0.224	-0.433	-0.224	0.1	0.0	98.5	98.5	0.02
Cable21	0.199	0.103	-0.199	-0.103	0.0	0.0	98.5	98.5	0.01
T16	0.234	0.121	-0.231	-0.112	3.0	9.2	98.5	96.0	2.53
T15	0.271	0.139	-0.269	-0.130	1.4	8.2	98.5	96.9	1.59
T17	0.221	0.114	-0.219	-0.106	2.0	7.8	99.7	97.7	2.09
T18	0.199	0.103	-0.197	-0.095	2.4	7.4	98.5	96.1	2.39
					120.3	266.2			

Project:  
Location:  
Contract:  
Engineer:  
Filename: LTP setting condition

**ETAP**  
12.6.0H  
Study Case: LF

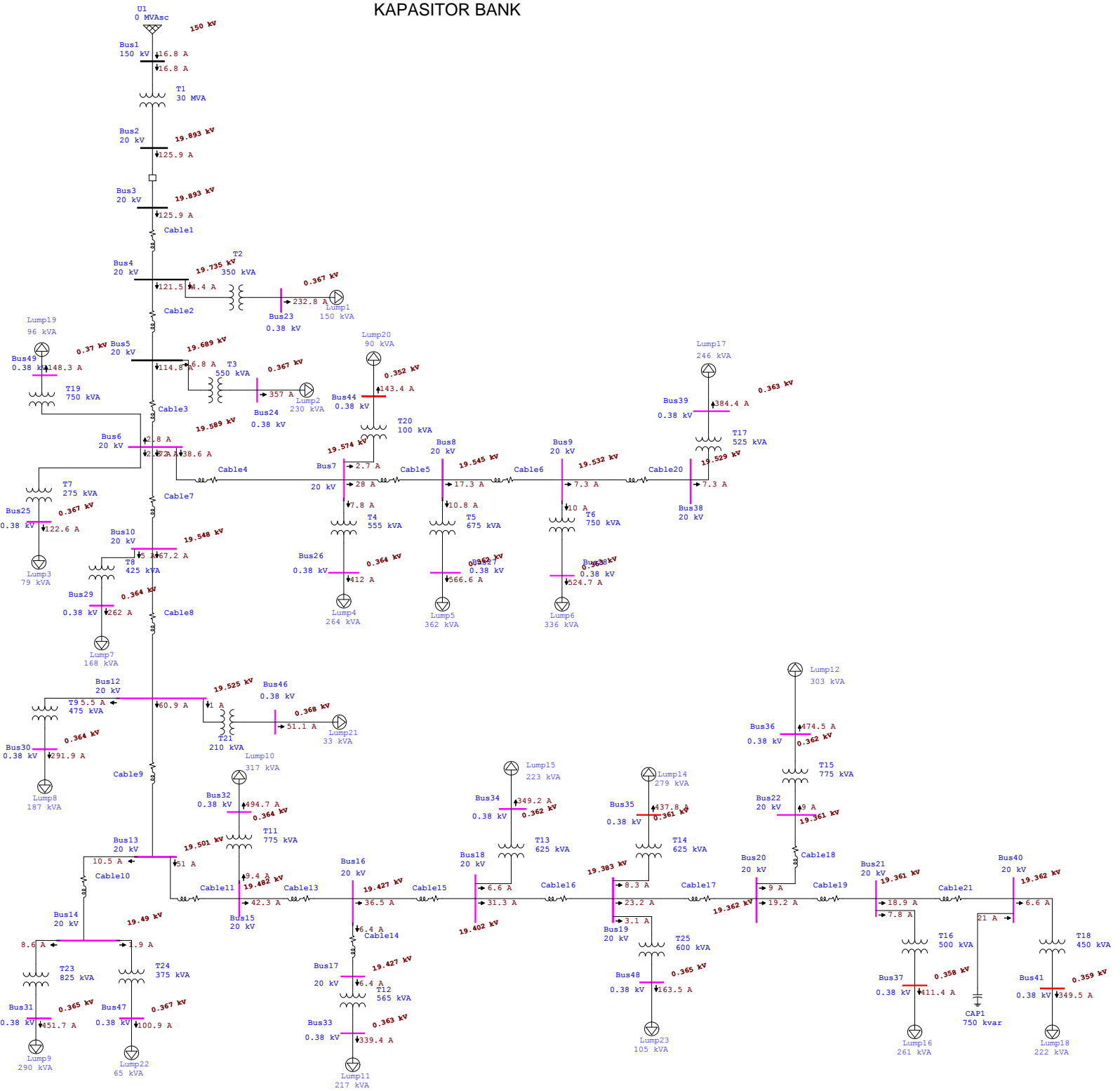
Page: 3  
Date: 11-02-2018  
SN:  
Revision: Base  
Config.: Normal

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# One-Line Diagram - OLV1 (Load Flow Analysis)

## KAPASITOR BANK



# KAPASITOR BANK

Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: capasitor bank fix

**ETAP**  
 12.6.0H

Study Case: LF

Page: 1  
 Date: 11-02-2018  
 SN:  
 Revision: Base  
 Config.: Normal

## Branch Losses Summary Report

CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T1	4.080	1.541	-4.078	-1.480	2.5	60.2	100.0	99.5	0.53
Cable1	4.078	1.480	-4.050	-1.457	28.3	23.1	99.5	98.7	0.79
Cable2	3.915	1.389	-3.907	-1.382	7.9	6.4	98.7	98.4	0.23
T2	0.135	0.069	-0.133	-0.065	1.4	4.3	98.7	96.6	2.07
Cable3	3.701	1.277	-3.685	-1.263	16.5	13.4	98.4	97.9	0.50
T3	0.206	0.105	-0.204	-0.099	1.7	6.6	98.4	96.6	1.88
Cable4	1.157	0.611	-1.157	-0.610	0.8	0.6	97.9	97.9	0.08
Cable7	2.376	0.566	-2.371	-0.562	4.4	3.6	97.9	97.7	0.21
T7	0.071	0.035	-0.070	-0.034	0.5	1.5	97.9	96.6	1.38
T19	0.081	0.051	-0.081	-0.050	0.2	0.8	97.9	97.3	0.63
Cable5	0.844	0.437	-0.843	-0.436	1.2	0.7	97.9	97.7	0.15
T4	0.236	0.122	-0.234	-0.113	2.2	8.7	97.9	95.7	2.15
T20	0.077	0.052	-0.074	-0.046	2.3	5.6	97.9	92.7	5.22
Cable6	0.520	0.268	-0.519	-0.268	0.4	0.2	97.7	97.7	0.07
T5	0.323	0.168	-0.320	-0.155	3.4	13.5	97.7	95.3	2.44
Cable20	0.220	0.113	-0.220	-0.113	0.0	0.0	97.7	97.6	0.01
T6	0.300	0.154	-0.297	-0.144	2.6	10.4	97.7	95.6	2.03
Cable8	2.221	0.486	-2.219	-0.484	2.3	1.8	97.7	97.6	0.11
T8	0.150	0.077	-0.149	-0.072	1.5	4.5	97.7	95.8	1.91
Cable9	2.024	0.381	-2.022	-0.379	2.3	1.8	97.6	97.5	0.12
T9	0.167	0.085	-0.165	-0.080	1.6	5.0	97.6	95.7	1.91
T21	0.028	0.018	-0.028	-0.017	0.1	0.3	97.6	96.8	0.83
Cable10	0.313	0.166	-0.313	-0.166	0.2	0.1	97.5	97.5	0.05
Cable11	1.709	0.213	-1.707	-0.212	1.6	1.3	97.5	97.4	0.10
T23	0.258	0.132	-0.257	-0.124	1.2	7.1	97.5	96.0	1.44
T24	0.055	0.035	-0.054	-0.034	0.2	0.8	97.5	96.5	0.92
Cable13	1.425	0.067	-1.421	-0.064	3.8	3.1	97.4	97.1	0.27
T11	0.282	0.145	-0.281	-0.136	1.6	9.1	97.4	95.7	1.68
Cable14	0.193	0.099	-0.193	-0.099	0.0	0.0	97.1	97.1	0.00
Cable15	1.228	-0.035	-1.226	0.036	1.6	1.3	97.1	97.0	0.12
T12	0.193	0.099	-0.192	-0.093	1.5	5.8	97.1	95.4	1.74
Cable16	1.039	-0.157	-1.038	0.158	1.2	0.6	97.0	96.9	0.10
T13	0.187	0.121	-0.186	-0.115	1.4	5.5	97.0	95.2	1.80
Cable17	0.701	-0.341	-0.700	0.342	1.3	0.7	96.9	96.8	0.11
T14	0.248	0.128	-0.246	-0.119	2.2	8.7	96.9	94.9	2.03



Project:  
 Location:  
 Contract:  
 Engineer:  
 Filename: capacitor bank fix

**ETAP**  
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CKT / Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	MW	Mvar	MW	Mvar	kW	kvar	From	To	
T25	0.088	0.056	-0.088	-0.054	0.3	1.3	96.9	96.0	0.87
Cable18	0.269	0.138	-0.269	-0.138	0.0	0.0	96.8	96.8	0.01
Cable19	0.431	-0.480	-0.431	0.480	0.2	0.1	96.8	96.8	0.01
Cable21	0.198	-0.601	-0.198	0.601	0.2	0.1	96.8	96.8	0.01
T16	0.233	0.121	-0.230	-0.111	3.0	9.4	96.8	94.2	2.56
T15	0.269	0.138	-0.268	-0.130	1.4	8.4	96.8	95.2	1.61
T17	0.220	0.113	-0.218	-0.105	2.0	8.0	97.6	95.5	2.12
T18	0.198	0.102	-0.195	-0.095	2.4	7.6	96.8	94.4	2.42
					111.4	252.0			

Project:  
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**ETAP**  
12.6.0H  
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