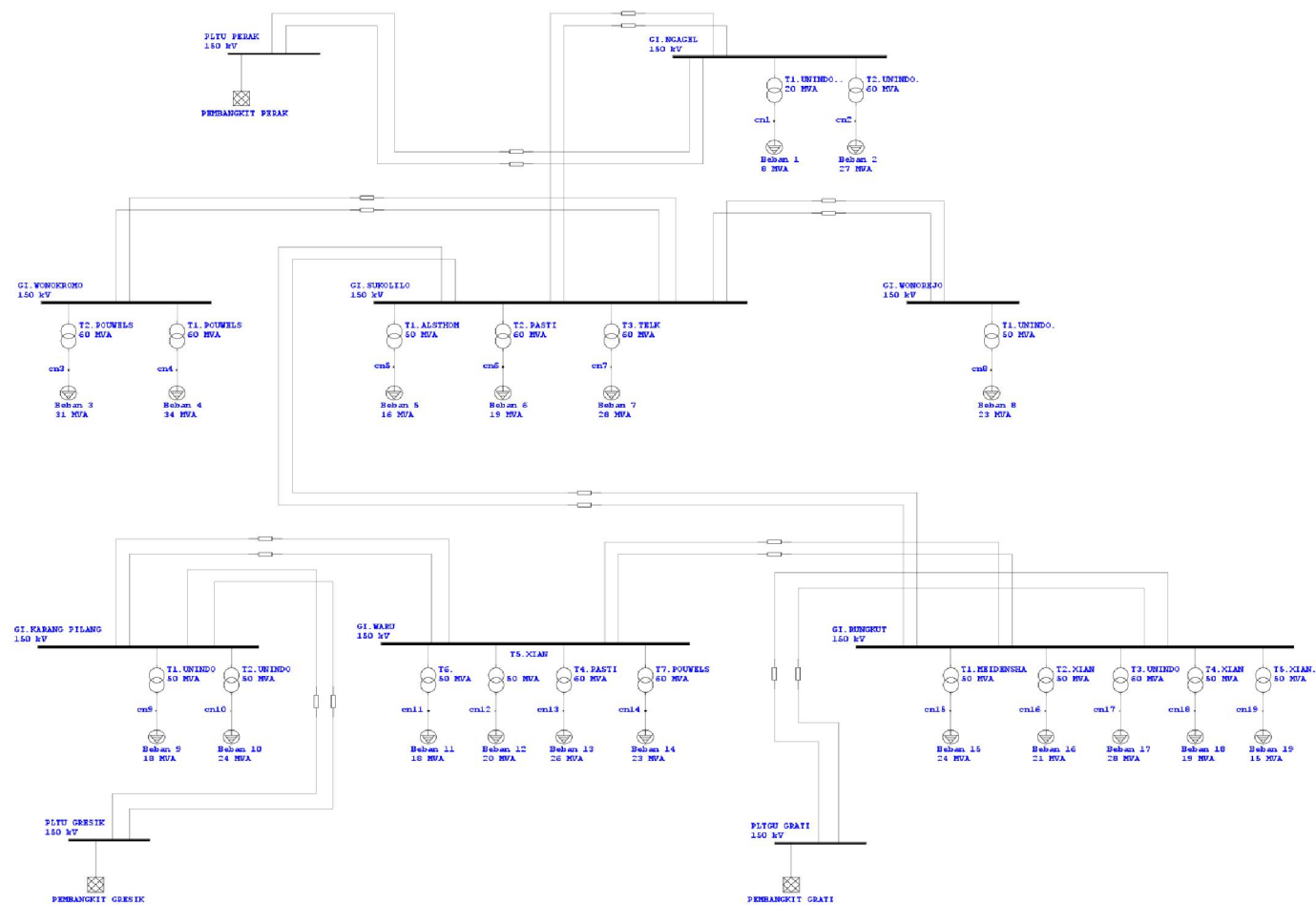


LAMPIRAN 1

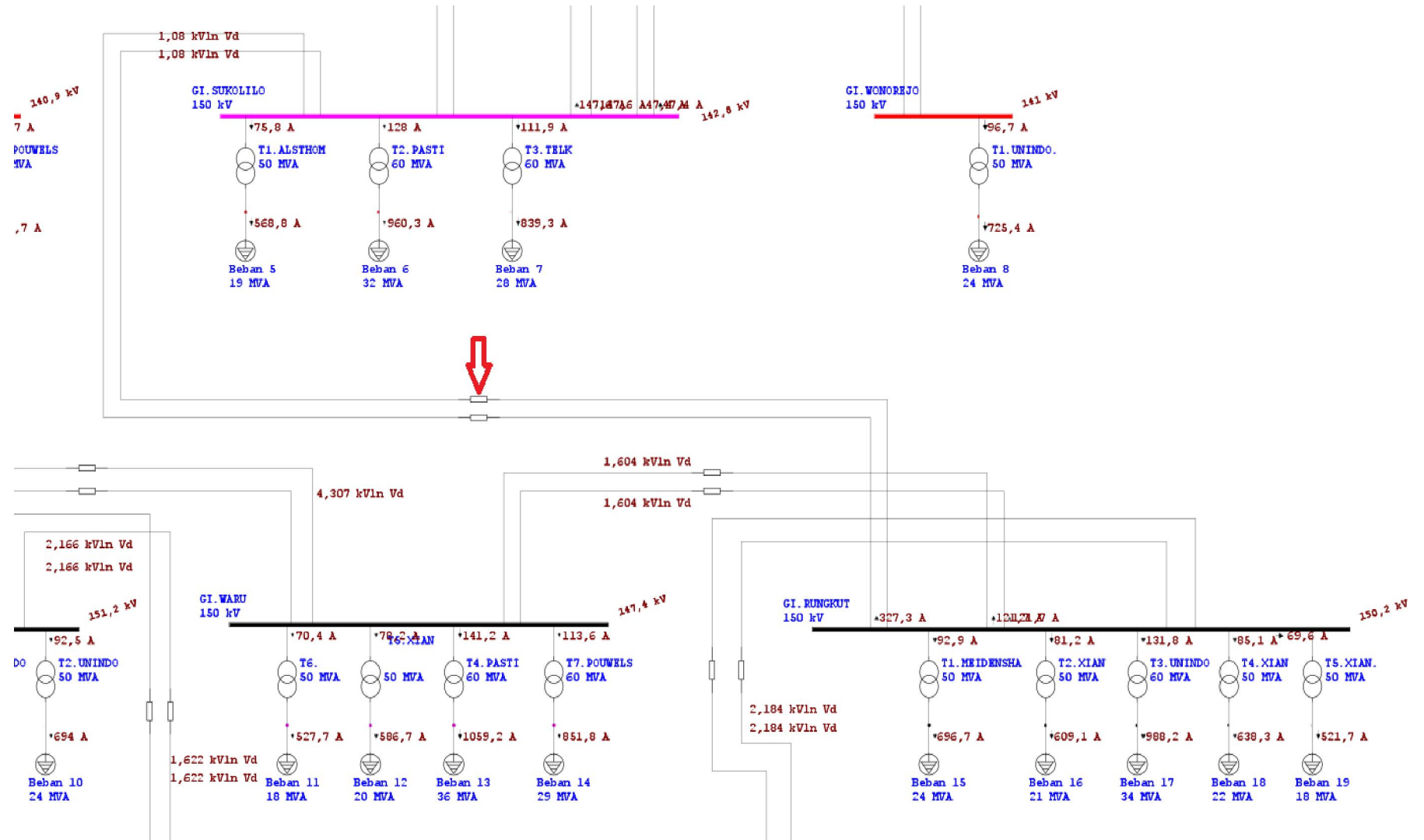
Single Line Konfigurasi 150 kV di ETAP 12

One-Line Diagram - OLV1



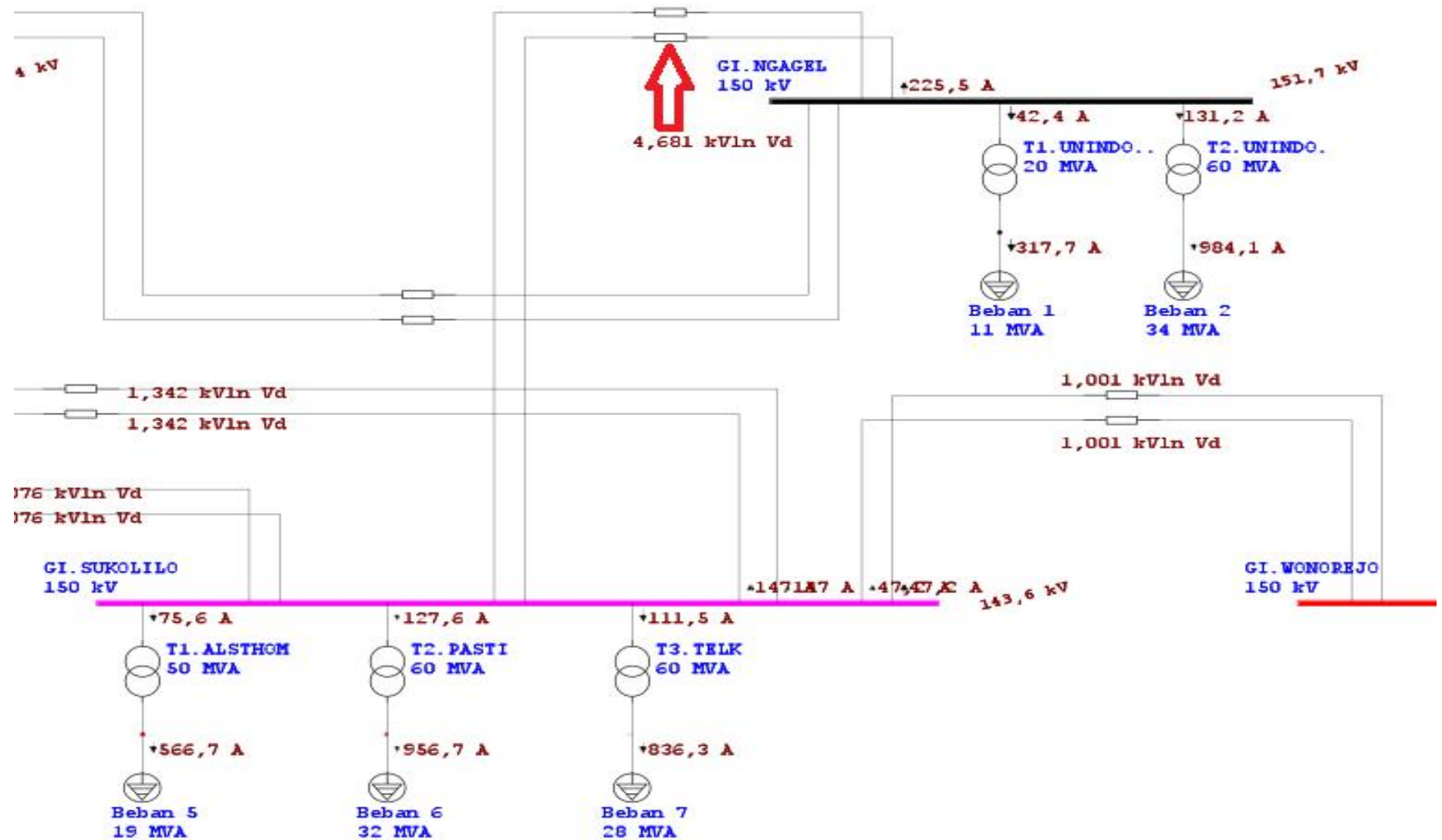
LAMPIRAN 2

Kontingensi Pada Saluran Rungkut 1 – Sukolilo 1



LAMPIRAN 3

Kontingensi Pada Saluran Ngagel 1 – Sukolilo 1



LAMPIRAN 4

Hasil aliran daya pada saat kondisi normal

Project:	ETAP	Page:	1
Location:	12.6.0H	Date:	25-06-2015
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename: SLD Project		Config.:	Normal

LOAD FLOW REPORT

Bus	Voltage				Generation		Load		Load Flow				XFMR	
	ID	kV	%Mag	Ang	MW	MVar	MW	MVar	ID	MW	MVar	Amp	%PF	%Tap
cn1		20.000	99.447	0.1	0	0	9.329	5.782	GI NOAGEL	-9.329	-5.782	318.6	85.0	
cn2		20.000	99.106	-0.2	0	0	28.797	17.847	GI NOAGEL	-28.797	-17.847	986.8	85.0	
cn3		20.000	93.705	-0.6	0	0	31.512	19.530	GI WONOKROMO	-31.512	-19.530	1142.1	85.0	
cn4		20.000	93.850	-0.6	0	0	29.041	17.998	GI WONOKROMO	-29.041	-17.998	1050.9	85.0	
cn5		20.000	95.887	-0.2	0	0	15.890	9.848	GI SUKOLILO	-15.890	-9.848	562.8	85.0	
cn6		20.000	95.533	-0.2	0	0	26.725	16.563	GI SUKOLILO	-26.725	-16.563	950.1	85.0	
cn7		20.000	95.687	-0.2	0	0	23.398	14.501	GI SUKOLILO	-23.398	-14.501	830.5	85.0	
cn8		20.000	94.501	-0.7	0	0	19.964	12.372	GI WONOREJO	-19.964	-12.372	717.5	85.0	
cn9		20.000	99.897	0.1	0	0	16.143	10.005	GI KARANG PILANG	-16.143	-10.005	548.8	85.0	
cn10		20.000	99.673	0.1	0	0	20.373	12.626	GI KARANG PILANG	-20.373	-12.626	694.2	85.0	
cn11		20.000	97.301	-0.2	0	0	15.137	9.381	GI WARU	-15.137	-9.381	528.3	85.0	
cn12		20.000	97.210	-0.2	0	0	16.813	10.420	GI WARU	-16.813	-10.420	587.4	85.0	
cn13		20.000	96.753	-0.2	0	0	30.209	18.722	GI WARU	-30.209	-18.722	1060.4	85.0	
cn14		20.000	97.020	-0.2	0	0	24.361	15.097	GI WARU	-24.361	-15.097	852.7	85.0	
cn15		20.000	98.638	-0.3	0	0	20.306	12.584	GI RUNGKUT	-20.306	-12.584	697.7	85.0	
cn16		20.000	98.974	-0.3	0	0	17.777	11.017	GI RUNGKUT	-17.777	-11.017	610.0	85.0	
cn17		20.000	98.643	-0.3	0	0	28.744	17.814	GI RUNGKUT	-28.744	-17.814	989.6	85.0	
cn18		20.000	98.929	-0.3	0	0	18.620	11.540	GI RUNGKUT	-18.620	-11.540	639.2	85.0	
cn19		20.000	99.109	-0.3	0	0	15.246	9.448	GI RUNGKUT	-15.246	-9.448	522.4	85.0	
GI KARANG PILANG		150.000	100.744	0.0	0	0	0	0	GI WARU	15.070	19.150	93.1	61.8	
									GI WARU	15.070	19.150	93.1	61.8	
									PLTU GRESIK	-41.343	-37.647	213.6	73.9	
									PLTU GRESIK	-25.689	-23.472	132.9	73.9	
									cn9	16.288	10.077	73.2	85.0	
									cn10	20.605	12.742	92.6	85.1	
GI NOAGEL		150.000	100.675	0.0	0	0	0	0	GI SUKOLILO	24.729	35.402	165.1	57.3	
									GI SUKOLILO	24.729	35.402	165.1	57.3	
									PLTU PERAK	-24.134	-28.485	205.2	68.1	
									PLTU PERAK	-33.762	-36.397	109.8	68.0	
									cn1	9.451	5.843	42.5	85.1	
									cn2	29.187	18.236	131.6	84.8	
GI RUNGKUT		150.000	99.915	-0.3	0	0	0	0	GI WARU	29.544	8.078	118.0	96.5	
									GI WARU	29.544	8.078	118.0	96.5	
									GI SUKOLILO	32.425	11.747	207.0	97.6	
									GI SUKOLILO	32.425	11.747	207.0	97.6	
									PLTGU GRATI	-163.913	-63.271	676.8	93.3	
									PLTGU GRATI	-101.850	-39.348	420.6	93.3	
									cn15	20.589	12.701	93.0	85.1	
									cn16	17.956	11.107	81.3	85.0	
									cn17	29.136	18.010	132.0	85.1	

Tugas Akhir

Project:	ETAP	Page:	2
Location:	12.6.0H	Date:	25-06-2015
Contract:		SN:	
Engineer:	Study Case: LF	Revision:	Base
Filename:	SLD Project	Config:	Normal

Bus		Voltage			Generation		Load		Load Flow					XFMR
ID	kV	% Mag	Ang	MW	Mvar	MW	Mvar		ID	MW	Mvar	Amp	%PF	%Tap
GE SUKOLILO	150.000	96.755	-0.3	0	0	0	0	m18	18.816	11.638	85.2	85.0		
								m19	15.377	9.514	69.7	85.0		
								GE NGAOEL	-23.966	-34.281	166.4	57.3		
								GE NGAOEL	-23.966	-34.281	166.4	57.3		
								GE WONOKROMO	31.142	19.389	145.9	84.9		
								GE WONOKROMO	31.142	19.389	145.9	84.9		
								GE WONOREJO	10.180	5.935	46.9	86.4		
								GE WONOREJO	10.180	5.935	46.9	86.4		
								GE RUNOKUT	-50.757	-11.696	207.2	97.4		
								GE RUNOKUT	-50.757	-11.696	207.2	97.4		
GE WARU	150.000	98.117	-0.3	0	0	0	0	m5	16.042	9.924	75.0	85.0		
								m6	27.086	16.743	126.7	85.1		
								m7	23.674	14.639	110.7	85.1		
								GE KARANG PILANG	-14.778	-18.815	99.9	61.8		
								GE KARANG PILANG	-14.778	-18.815	99.9	61.8		
								GE RUNOKUT	-29.002	-8.255	118.3	96.2		
								GE RUNOKUT	-29.002	-8.255	118.3	96.2		
								m13	30.659	18.947	141.4	85.1		
								m12	16.979	10.503	78.3	85.0		
								m11	15.271	9.448	70.4	85.0		
GE WONOKROMO	150.000	95.521	-0.3	0	0	0	0	m14	24.651	15.243	113.7	85.1		
								GE SUKOLILO	-30.758	-19.245	146.2	84.8		
								GE SUKOLILO	-30.758	-19.245	146.2	84.8		
								m4	29.482	18.439	140.1	84.8		
GE WONOREJO	150.000	95.608	-0.7	0	0	0	0	m3	32.034	20.051	152.3	84.8		
								GE SUKOLILO	-10.105	-6.248	47.8	85.1		
								GE SUKOLILO	-10.105	-6.248	47.8	85.1		
*PLTU GRATI	150.000	102.667	0.0	272.447	106.895	0	0	m8	20.211	12.496	95.7	85.1		
*PLTU GRESIK	150.000	102.667	0.0	68.361	61.802	0	0	GE RUNOKUT	168.035	65.950	676.8	93.1		
								GE RUNOKUT	104.412	40.944	420.5	93.1		
*PLTU PERAK	150.000	102.667	0.0	89.506	56.390	0	0	GE KARANG PILANG	42.163	38.168	213.2	74.1		
								GE KARANG PILANG	26.199	23.634	132.3	74.3		
								GE NGAOEL	55.451	59.486	304.9	68.2		
								GE NGAOEL	34.456	36.904	189.3	68.2		

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

Indicates a bus with a load mismatch of more than 0.1 MVA

LAMPIRAN 5

Hasil aliran daya pada saat outage saluran Rungkut 1 – Sukolio 1

Project:	ETAP	Page:	1
Location:	12.6.0H	Date:	27-06-2015
Contract:		SN:	
Engineer:	Study Case: N-1	Revision:	Base
Filename: SLD Project		Config:	Normal

LOAD FLOW REPORT

	Bus	Voltage		Generation		Load		Load Flow				XFMR		
	ID	kV	%Mag	Ang	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
cn1		20.000	99.015	0.1	0	0	9.313	5.772	GEHGAEL	-9.313	-5.772	319.4	85.0	
cn2		20.000	98.674	-0.2	0	0	28.748	17.816	GEHGAEL	-28.748	-17.816	989.4	85.0	
cn3		20.000	92.087	-0.9	0	0	31.318	19.409	GEWONGKROMO	-31.318	-19.409	1155.0	85.0	
cn4		20.000	92.234	-0.9	0	0	28.862	17.887	GEWONGKROMO	-28.862	-17.887	1062.7	85.0	
cn5		20.000	94.294	-0.6	0	0	15.792	9.787	GE SUKOLLO	-15.792	-9.787	560.8	85.0	
cn6		20.000	93.937	-0.6	0	0	26.560	16.461	GE SUKOLLO	-26.560	-16.461	960.3	85.0	
cn7		20.000	94.093	-0.6	0	0	23.254	14.412	GE SUKOLLO	-23.254	-14.412	839.3	85.0	
cn8		20.000	92.893	-1.0	0	0	19.841	12.296	GEWONGREJO	-19.841	-12.296	725.4	85.0	
cn9		20.000	99.948	0.1	0	0	16.147	10.007	GEKARANG PILANG	-16.147	-10.007	543.7	85.0	
cn10		20.000	99.724	0.1	0	0	20.377	12.629	GEKARANG PILANG	-20.377	-12.629	694.0	85.0	
cn11		20.000	97.479	-0.2	0	0	15.148	9.388	GE WARU	-15.148	-9.388	527.7	85.0	
cn12		20.000	97.388	-0.2	0	0	16.825	10.427	GE WARU	-16.825	-10.427	586.7	85.0	
cn13		20.000	96.931	-0.2	0	0	30.230	18.735	GE WARU	-30.230	-18.735	1059.2	85.0	
cn14		20.000	97.198	-0.2	0	0	24.378	15.108	GE WARU	-24.378	-15.108	851.8	85.0	
cn15		20.000	99.070	-0.3	0	0	20.324	12.596	GERUNGKUT	-20.324	-12.596	696.7	85.0	
cn16		20.000	99.205	-0.3	0	0	17.793	11.027	GERUNGKUT	-17.793	-11.027	609.1	85.0	
cn17		20.000	98.874	-0.3	0	0	28.771	17.890	GERUNGKUT	-28.771	-17.890	980.2	85.0	
cn18		20.000	99.160	-0.3	0	0	18.637	11.550	GERUNGKUT	-18.637	-11.550	638.3	85.0	
cn19		20.000	99.340	-0.3	0	0	15.260	9.457	GERUNGKUT	-15.260	-9.457	521.7	85.0	
GEKARANG PILANG	150.000	100.794	0.0	0	0	0	0	0	GE WARU	14.268	18.281	88.6	61.5	
									GE WARU	14.268	18.281	88.6	61.5	
									PLTU GRESIK	-40.359	-36.578	208.0	74.1	
									PLTU GRESIK	-25.078	-22.807	129.4	74.0	
									cn9	16.291	10.079	73.2	85.0	
									cn10	20.609	12.744	82.5	85.1	
GEHGAEL	150.000	100.248	0.0	0	0	0	0	0	GE SUKOLLO	35.329	44.024	216.7	62.6	
									GE SUKOLLO	35.329	44.024	216.7	62.6	
									PLTU PERAK	-67.371	-69.098	370.5	69.8	
									PLTU PERAK	-41.862	-42.992	230.4	69.8	
									cn1	9.436	5.833	42.6	85.1	
									cn2	29.139	18.208	131.9	84.8	
GERUNGKUT	150.000	100.145	-0.3	0	0	0	0	0	GE WARU	30.382	8.915	121.7	96.0	
									GE WARU	30.382	8.915	121.7	96.0	
									GE SUKOLLO	84.745	8.445	327.3	99.5	
									PLTU GRATI	-152.599	-55.057	623.5	94.1	
									PLTU GRATI	-84.821	-34.244	387.5	94.1	
									cn15	20.557	12.712	92.9	85.1	
									cn16	17.972	11.116	81.2	85.0	
									cn17	29.161	18.026	131.8	85.1	
									cn18	18.033	11.640	85.1	85.0	

Tugas Akhir

Project:	ETAP	Page:	2
Location:	11.6.0H	Date:	27-06-2015
Contract:		SN:	
Engineer:	Study Case: N-1	Revision:	Base
Filename:	SLD Project	Config.:	Normal

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag	Ang	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
GISUKOLLO	150.000	95.172	-0.6	0	0	0	0	m19	15.390	9.522	69.6	85.0	
								GINGAGEL	-34.017	-41.798	217.9	63.1	
								GINGAGEL	-34.017	-41.798	217.9	63.1	
								GIWONOKROMO	30.975	19.295	147.6	84.9	
								GIWONOKROMO	30.975	19.295	147.6	84.9	
								GIWONOREJO	10.123	5.917	47.4	86.3	
								GIWONOREJO	10.123	5.917	47.4	86.3	
								GIWONOKUT	-80.575	-7.880	327.4	99.5	
								m5	15.947	9.865	75.8	85.0	
								m6	26.929	16.645	128.0	85.1	
GIWARU	150.000	98.293	-0.2	0	0	0	0	m7	23.536	14.553	111.9	85.1	
								GIKARANG PILANG	-14.005	-18.001	89.3	61.4	
								GIKARANG PILANG	-14.005	-18.001	89.3	61.4	
								GIWONOKUT	-29.804	-9.087	122.0	95.7	
								GIWONOKUT	-29.804	-9.087	122.0	95.7	
								m13	30.679	18.959	141.2	85.1	
								m12	16.990	10.510	78.2	85.0	
								m11	15.281	9.455	70.4	85.0	
								m14	24.668	15.253	113.6	85.1	
								GISUKOLLO	150.000	93.924	-0.7	0	0
GISUKOLLO	-30.583	-19.141	147.8	84.8									
m4	29.313	18.339	141.7	84.8									
m3	31.852	19.943	154.0	84.8									
GIWONOREJO	150.000	94.012	-1.1	0	0	0	0	GISUKOLLO	-10.047	-6.211	48.4	85.1	
								GISUKOLLO	-10.047	-6.211	48.4	85.1	
								m8	20.093	12.422	96.7	85.1	
*PLTU GRATI	150.000	102.667	0.0	253.093	92.901	0	0	GIWONOKUT	156.098	57.320	623.4	93.9	
								GIWONOKUT	96.995	35.582	387.3	93.9	
*PLTU GRESIK	150.000	102.667	0.0	66.696	60.010	0	0	GIKARANG PILANG	41.136	37.062	207.6	74.3	
								GIKARANG PILANG	25.561	22.947	128.8	74.4	
*PLTU PERAK	150.000	102.667	0.0	111.903	114.457	0	0	GINGAGEL	69.017	70.629	370.2	69.9	
								GINGAGEL	42.885	43.828	229.9	69.9	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

Indicates a bus with a load mismatch of more than 0.1 MVA

LAMPIRAN 6

Hasil aliran daya pada saat outage saluran Ngagel 1 – Sukolio 1

Project:	ETAP	Page:	1
Location:	12.6.0H	Date:	27-06-2015
Contract:		SN:	
Engineer:	Study Case: N-1	Revision:	Base
Filename: SLD Project		Config:	Normal

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow				XFMR	
ID	kV	%Mag	Ang	MW	MVar	MW	MVar	ID	MW	MVar	Amp	%PF	%Tap
en1	20.000	99.892	0.1	0	0	9.946	5.792	GI NGAEL	-9.946	-5.792	317.7	85.0	
en2	20.000	99.552	-0.2	0	0	28.948	17.879	GI NGAEL	-28.948	-17.879	994.1	85.0	
en3	20.000	92.640	-0.3	0	0	31.354	18.450	GI WONOKROMO	-31.354	-18.450	1150.5	85.0	
en4	20.000	92.796	-0.3	0	0	28.922	17.925	GI WONOKROMO	-28.922	-17.925	1058.6	85.0	
en5	20.000	94.888	0.0	0	0	15.825	9.808	GI SUKOLILO	-15.825	-9.808	566.7	85.0	
en6	20.000	94.402	0.0	0	0	26.616	16.495	GI SUKOLILO	-26.616	-16.495	956.7	85.0	
en7	20.000	94.637	0.0	0	0	23.303	14.442	GI SUKOLILO	-23.303	-14.442	836.3	85.0	
en8	20.000	93.442	-0.4	0	0	19.882	12.322	GI WONOREJO	-19.882	-12.322	722.6	85.0	
en9	20.000	99.837	0.1	0	0	16.139	10.002	GI KARANG PILANG	-16.140	-10.002	549.0	85.0	
en10	20.000	99.613	0.1	0	0	20.368	12.623	GI KARANG PILANG	-20.368	-12.623	694.4	85.0	
en11	20.000	97.091	-0.2	0	0	15.125	9.373	GI WARU	-15.125	-9.373	529.0	85.0	
en12	20.000	96.999	-0.2	0	0	16.799	10.411	GI WARU	-16.799	-10.411	580.2	85.0	
en13	20.000	96.542	-0.2	0	0	30.184	18.706	GI WARU	-30.184	-18.706	1061.8	85.0	
en14	20.000	96.809	-0.2	0	0	24.340	15.085	GI WARU	-24.340	-15.085	853.9	85.0	
en15	20.000	98.566	-0.3	0	0	20.284	12.571	GI RUNGKUT	-20.284	-12.571	696.9	85.0	
en16	20.000	98.702	-0.3	0	0	17.758	11.005	GI RUNGKUT	-17.758	-11.005	611.0	85.0	
en17	20.000	98.370	-0.3	0	0	28.713	17.785	GI RUNGKUT	-28.713	-17.785	991.3	85.0	
en18	20.000	99.656	-0.3	0	0	18.600	11.527	GI RUNGKUT	-18.600	-11.527	640.3	85.0	
en19	20.000	98.837	-0.3	0	0	15.229	9.438	GI RUNGKUT	-15.229	-9.438	523.3	85.0	
GI KARANG PILANG	150.000	100.694	0.1	0	0	0	0	GI WARU	15.964	20.222	98.5	62.0	
								GI WARU	15.964	20.222	98.5	62.0	
								PLTU GRESEK	-42.441	-38.966	220.9	73.7	
								PLTU GRESEK	-26.371	-24.291	137.1	73.6	
								en9	16.284	10.075	73.2	85.0	
GI NGAEL	150.000	101.117	0.1	0	0	0	0	en10	20.600	12.739	92.6	85.1	
								GI SUKOLILO	28.095	52.177	225.5	47.3	
								PLTU PERAJ	-41.161	-47.021	237.9	65.9	
								PLTU PERAJ	-25.577	-29.274	148.0	65.8	
								en1	9.467	5.853	42.4	85.1	
GI RUNGKUT	150.000	99.644	-0.3	0	0	0	0	en2	29.236	18.266	131.2	84.8	
								GI WARU	28.612	7.048	113.8	87.1	
								GI WARU	28.612	7.048	113.8	87.1	
								GI SUKOLILO	63.763	21.199	259.6	94.9	
								GI SUKOLILO	63.763	21.199	259.6	94.9	
								PLTU GRATI	-176.684	-73.620	739.4	92.3	
								PLTU GRATI	-109.786	-45.778	459.5	92.3	
								en15	20.518	12.689	93.2	85.1	
								en16	17.997	11.095	81.5	85.0	
								en17	29.106	17.991	132.2	85.1	
								en18	18.797	11.626	85.4	85.0	

Project:	ETAP	Page:	2
Location:	12.6.0H	Date:	27-06-2015
Contract:		SN:	
Engineer:	Study Case: N-1	Revision:	Base
Filename:	SLD Project	Config:	Normal

	Bus	Voltage			Generation		Load		Load Flow					XFMR
	ID	kV	% Mag	Ang	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
GE SUKOLILLO	150.000	95.712	0.0	0	0	0	0	m19	15.361	9.304	69.8	85.0		
								GE GINGAGEL	-26.614	-49.739	236.9	47.2		
								GE WONOKROMO	31.032	19.327	147.0	84.9		
								GE WONOKROMO	31.032	19.327	147.0	84.9		
								GE WONOREJO	10.142	5.923	47.2	86.4		
								GE WONOREJO	10.142	5.923	47.2	86.4		
								GE RUNGKUT	-61.139	-20.953	259.9	94.6		
								GE RUNGKUT	-61.139	-20.953	259.9	94.6		
								m5	15.979	9.885	75.6	85.0		
								m6	26.982	16.678	127.6	85.1		
GE WARU	150.000	97.907	-0.3	0	0	0	0	m7	23.585	14.582	111.5	85.1		
								GE KARANG PILANG	-15.638	-19.817	99.2	61.9		
								GE KARANG PILANG	-15.638	-19.817	99.2	61.9		
								GE RUNGKUT	-28.107	-7.232	114.1	96.8		
								GE RUNGKUT	-28.107	-7.232	114.1	96.8		
								m13	30.635	18.932	141.6	85.1		
								m12	16.965	10.494	78.4	85.0		
								m11	15.259	9.441	70.5	85.0		
								m14	24.632	15.231	113.9	85.1		
								GE SUKOLILLO	-30.642	-19.176	147.3	84.8		
GE WONOKROMO	150.000	94.469	-0.1	0	0	0	0	GE SUKOLILLO	-30.642	-19.176	147.3	84.8		
								m4	29.371	18.373	141.2	84.8		
								m3	31.913	19.980	153.4	84.8		
								GE SUKOLILLO	-10.067	-6.224	48.2	85.1		
GE WONOREJO	150.000	94.557	-0.5	0	0	0	0	GE SUKOLILLO	-10.067	-6.224	48.2	85.1		
								m8	20.133	12.447	96.4	85.1		
*PLTU GRATI	150.000	102.667	0.0	294.446	124.535	0	0	GE RUNGKUT	181.609	76.860	739.3	92.1		
								GE RUNGKUT	112.843	47.705	459.3	92.1		
*PLTU GRESIK	150.000	102.667	0.0	70.225	64.011	0	0	GE KARANG PILANG	43.312	39.530	219.8	73.9		
								GE KARANG PILANG	26.913	24.481	136.4	74.0		
*PLTU PERAK	150.000	102.667	0.0	67.837	77.090	0	0	GE GINGAGEL	41.840	47.582	237.5	66.0		
								GE GINGAGEL	25.998	29.508	147.4	66.1		

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

Indicates a bus with a load mismatch of more than 0.1 MVA

LAMPIRAN 7

Tabel Konduktor ACSR

ALUMINIUM CONDUCTOR STEEL REINFORCED (ACSR)									
Specification : SPTN 41-7-1981									
									
All Aluminum Conductor (AAC)									
Galvanized Steel wire									
PHYSICAL AND ELECTRICAL PROPERTIES									
Cross section area		No. of wire/dia		Approx. overall diameter	Approx. net weight of conductor	Calculated breaking force	D.C. Resistance at 20° C	Current carrying capacity	Standard weight per reel
Nominal size	Actual size	Al	Steel	mm	kg/km	kg	ohm/km	A	kg
mm ²	mm ²	n/mm	n/mm						
16/2.5	15.3/2.55	6/1.8	1/1.8	5.4	62	5,950	1.8790	90	500
25/4	23.8/4.0	6/2.25	1/2.25	6.8	97	9,200	1.2030	125	500
35/6	34.3/5.7	6/2.7	1/2.7	8.1	140	12,650	0.8353	145	500
44/32	44.0/31.7	14/2.0	7/2.4	11.2	372	43,000	0.6573	160	500
50/8	48.3/8.0	6/3.2	1/3.2	9.6	196	17,100	0.5946	170	500
50/30	51.2/29.8	12/2.33	7/2.33	11.7	378	43,800	0.5644	165	500
70/12	69.9/11.4	26/1.85	7/1.44	11.7	284	26,800	0.4130	290	1,000
95/15	94.4/15.3	26/2.25	7/1.67	13.6	383	35,750	0.3053	350	1,000
95/55	96.5/56.3	12/3.2	1/3.2	16.0	712	79,350	0.2992	345	1,000
105/75	105.7/75.5	14/3.1	19/2.25	17.5	891	108,450	-	370	1,000
120/20	121.6/19.8	26/2.44	7/1.9	15.5	494	45,650	0.2374	410	1,000
120/70	122.0/71.3	12/3.6	7/3.6	18.0	901	100,000	0.2364	400	1,000
125/30	127.9/29.8	30/2.33	7/2.33	16.1	591	57,600	0.2259	425	1,000
150/25	149.9/24.2	26/2.7	7/2.1	17.1	605	55,250	0.1939	470	1,000
170/40	171.8/40.1	30/2.7	7/2.7	18.9	794	76,750	0.1682	520	1,000
185/30	183.8/29.8	26/3.0	7/2.33	19.0	746	66,200	0.1571	535	1,000
210/35	209.1/34.1	26/3.2	7/2.49	20.3	850	74,900	0.1980	590	1,000
210/50	212.1/49.5	30/3.0	7/3.0	21.0	981	93,900	0.1363	610	1,000
230/30	230.0/29.8	24/3.5	7/2.33	21.0	977	73,100	0.1249	625	1,000
240/40	243.0/39.5	26/3.45	7/2.68	21.9	987	86,400	0.1183	645	1,000
265/35	263.7/34.1	24/3.74	7/2.49	22.4	1,002	83,050	0.1094	680	1,000
300/50	304.3/49.5	26/3.88	7/3.0	24.5	1,236	107,000	0.0950	740	1,000
305/40	304.6/39.5	54/2.68	7/2.68	24.1	1,160	99,400	0.0949	740	1,000
340/30	339.3/29.8	48/3.0	7/2.33	25.0	1,180	92,900	0.0951	790	1,000
360/50	382.0/49.5	54/3.0	7/3.0	27.0	1,453	123,100	0.0757	820	1,000
385/33	364.0/34.1	48/3.2	7/2.49	26.7	1,344	104,800	0.0713	865	1,000
435/35	434.3/56.3	54/3.2	7/3.2	28.8	1,653	136,450	0.0666	900	1,000
430/40	448.7/39.5	43/3.45	7/2.68	28.7	1,561	120,750	0.0544	890	1,000
490/65	490.3/63.9	54/3.4	7/3.4	30.6	1,866	153,100	0.0590	985	1,000
493/35	494.1/34.1	43/3.74	1/3.45	29.9	1,646	121,600	0.0514	985	1,000
510/45	510.2/45.3	43/3.69	7/2.63	30.7	1,778	136,650	0.0396	995	750
550/75	550.0/71.3	54/3.6	7/3.6	32.4	2,092	170,600	0.0526	1,020	750
560/50	531.7/49.3	48/3.86	7/3.0	32.2	1,954	148,950	0.0314	1,040	750
570/40	571.2/39.5	45/4.82	7/2.68	32.2	1,388	136,200	0.0506	1,050	750
650/45	660.5/45.3	45/4.3	7/2.87	34.0	2,171	155,500	0.0442	1,120	750
680/83	678.6/86.0	64/4.0	19/3.4	36.0	2,566	206,250	0.0426	1,150	750
1,043/45	1,045.6/45.3	72/4.3	7/2.43	43.0	3,251	217,600	-	1,755	750

LAMPIRAN 8

Metering Panel Line Bay



LAMPIRAN 9

Metering Panel Transformer Bay

