

Bus Loading Summary Report

Bus			Directly Connected Load								Total Bus Load			
			Constant kVA		Constant Z		Constant I		Generic		MVA	% PF	Amp	Percent Loading
ID	kV	Rated Amp	MW	Mvar	MW	Mvar	MW	Mvar	MW	Mvar				
Bus1	0.400		0	0	0	0	0	0	0	0	1.765	100.0	2748.5	
Bus2	0.400		0	0	0	0	0	0	0	0	0.064	100.0	98.1	
Bus3	0.400		0	0	0	0	0	0	0	0	0.064	100.0	98.1	
Bus5	0.400		0	0	0	0	0	0	0	0	0.064	100.0	99.5	
Bus7	0.400		0	0	0	0	0	0	0	0	0.064	100.0	98.1	
Bus8	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus9	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus10	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus11	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus12	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus13	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus14	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus15	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus16	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus17	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus18	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus19	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus20	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus21	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus22	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus23	0.400		0	0	0	0	0	0	0	0	0.097	100.0	147.2	
Bus24	0.690		0.638	0.395	0	0	0	0	0	0	0.750	85.0	693.0	
Bus25	3.300		0	0	0	0	0	0	0	0	1.926	91.5	363.3	
Bus28	0.400		0	0.188	0	0.039	0	0	0	0	0.227	0.0	358.9	
Bus29	3.300		0	0	0	0	0	0	0	0	2.584	82.6	496.2	
Bus30	0.400		1.088	0.674	0.206	0.127	0	0	0	0	1.522	85.0	2526.2	
Bus32	0.400		0.680	0.421	0.131	0.081	0	0	0	0	0.954	85.0	1568.0	
Bus33	3.300		0	0	0	0	0	0	0	0	3.120	68.4	599.1	
Bus35	3.300		0	0	0	0	0	0	0	0	1.342	79.3	257.4	
Bus36	3.300		0	0	0	0	0	0	0	0	1.363	82.0	257.4	
Bus37	0.400		0	0	0	0	0	0	0	0	2.761	40.4	3984.9	
Bus38	3.300		0	0	0	0	0	0	0	0	1.766	99.8	333.2	
Bus39	3.300		0	0	0	0	0	0	0	0	0.768	83.1	144.9	

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12.6.0H

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Study Case: LF

Revision: Base

Filename: bahan skripsi

Config.: Normal

* Indicates operating load of a bus exceeds the bus critical limit (100.0% of the Continuous Ampere rating).

Indicates operating load of a bus exceeds the bus marginal limit (95.0% of the Continuous Ampere rating).

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Branch Loading Summary Report

CKT / Branch		Cable & Reactor			Transformer				
ID	Type	Ampacity (Amp)	Loading Amp	%	Capability (MVA)	Loading (input)		Loading (output)	
						MVA	%	MVA	%
* C9	Cable	92.16	147.18	159.70					
* C10	Cable	92.16	147.18	159.70					
* C11	Cable	92.16	147.18	159.70					
* C12	Cable	92.16	147.18	159.70					
* C13	Cable	92.16	147.18	159.70					
* C14	Cable	92.16	147.18	159.70					
* C15	Cable	92.16	147.18	159.70					
* C16	Cable	92.16	147.18	159.70					
* C17	Cable	92.16	147.18	159.70					
* C18	Cable	92.16	147.18	159.70					
* C19	Cable	92.16	147.18	159.70					
* C20	Cable	92.16	147.18	159.70					
* C21	Cable	92.16	147.18	159.70					
* C22	Cable	92.16	147.18	159.70					
* C23	Cable	92.16	147.18	159.70					
* C24	Cable	92.16	147.18	159.70					
Cable2	Cable	385.81	257.43	66.73					
Cable4	Cable	385.81	257.46	66.73					
T1	Transformer				2200.000	1.766	0.1	1.765	0.1
T2	Transformer				1250.000	0.768	0.1	0.750	0.1
T3	Transformer				630.000	0.231	0.0	0.227	0.0
T4	Transformer				2.000	1.595	79.7	1.522	76.1
T6	Transformer				2.000	0.990	49.5	0.954	47.7
T7	Transformer				3.000	2.761	92.0	2.515	83.8

* Indicates a branch with operating load exceeding the branch capability.

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Branch Losses Summary Report

CKT / Branch		From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd
ID		MW	Mvar	MW	Mvar	kW	kvar	From	To	% Drop in Vmag
C1		-0.063	0.000	0.064	0.000	1.2	0.0	92.7	94.5	1.78
C4		-0.063	0.000	0.064	0.000	1.2	0.0	92.7	94.5	1.78
C6		-0.064	0.000	0.064	0.000	0.3	0.1	92.7	93.1	0.42
C8		-0.063	0.000	0.064	0.000	1.2	0.0	92.7	94.5	1.78
C9		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C10		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C11		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C12		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C13		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C14		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C15		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C16		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C17		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C18		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C19		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C20		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C21		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C22		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C23		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
C24		-0.095	0.000	0.097	0.000	2.7		92.7	95.4	2.67
T1		1.765	0.000	-1.762	0.120	2.7	120.0	92.7	92.8	0.07
T2		-0.638	-0.395	0.638	0.427	0.7	31.7	90.6	92.7	2.14
Cable1		-1.762	0.121	1.762	-0.120	0.6	0.5	92.7	92.8	0.03
Cable4		1.121	-0.778	-1.117	0.781	3.8	2.6	92.7	92.6	0.10
Cable6		0.638	0.427	-0.638	-0.427	0.2	0.1	92.7	92.7	0.03
T3		0.002	0.231	0.000	-0.227	2.2	3.3	92.7	91.4	1.32
T4		1.311	0.908	-1.294	-0.802	17.6	105.8	91.1	87.0	4.16
T6		0.824	0.548	-0.811	-0.503	13.0	45.4	91.1	87.9	3.26
Cable2		-1.061	0.819	1.064	-0.817	2.8	2.0	91.1	91.2	0.06
T7		-1.074	-2.275	1.116	2.525	41.8	250.6	91.1	100.0	8.89
Cable5		-1.064	0.817	1.117	-0.781	53.2	36.4	91.2	92.6	1.46
						186.1	598.4			

Alert Summary Report

Loading	% Alert Settings	
	Critical	Marginal
Bus	100.0	95.0
Cable	100.0	95.0
Reactor	100.0	95.0
Line	100.0	95.0
Transformer	100.0	95.0
Panel	100.0	95.0
Protective Device	100.0	95.0
Generator	100.0	95.0
Inverter/Charger	100.0	95.0
Bus Voltage		
OverVoltage	105.0	102.0
UnderVoltage	95.0	98.0
Generator Excitation		
OverExcited (Q Max.)	100.0	95.0
UnderExcited (Q Min.)	100.0	

Critical Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
Bus1	Bus	Under Voltage	0.400	kV	0.371	92.7	3-Phase
Bus2	Bus	Under Voltage	0.400	kV	0.378	94.5	3-Phase
Bus24	Bus	Under Voltage	0.690	kV	0.625	90.6	3-Phase
Bus25	Bus	Under Voltage	3.300	kV	3.060	92.7	3-Phase
Bus28	Bus	Under Voltage	0.400	kV	0.366	91.4	3-Phase
Bus29	Bus	Under Voltage	3.300	kV	3.007	91.1	3-Phase
Bus3	Bus	Under Voltage	0.400	kV	0.378	94.5	3-Phase
Bus30	Bus	Under Voltage	0.400	kV	0.348	87.0	3-Phase
Bus32	Bus	Under Voltage	0.400	kV	0.351	87.9	3-Phase
Bus33	Bus	Under Voltage	3.300	kV	3.007	91.1	3-Phase
Bus35	Bus	Under Voltage	3.300	kV	3.009	91.2	3-Phase
Bus36	Bus	Under Voltage	3.300	kV	3.057	92.6	3-Phase
Bus38	Bus	Under Voltage	3.300	kV	3.061	92.8	3-Phase
Bus39	Bus	Under Voltage	3.300	kV	3.059	92.7	3-Phase
Bus5	Bus	Under Voltage	0.400	kV	0.372	93.1	3-Phase

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Critical Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
Bus7	Bus	Under Voltage	0.400	kV	0.378	94.5	3-Phase
C10	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C11	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C12	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C13	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C14	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C15	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C16	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C17	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C18	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C19	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C20	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C21	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C22	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C23	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C24	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase
C9	Cable	Overload	92.160	Amp	147.179	159.7	3-Phase

Marginal Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
Bus10	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus11	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus12	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus13	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus14	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus15	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus16	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus17	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus18	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus19	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus20	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus21	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus22	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus23	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus8	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase
Bus9	Bus	Under Voltage	0.400	kV	0.381	95.4	3-Phase

SUMMARY OF TOTAL GENERATION , LOADING & DEMAND

	MW	Mvar	MVA	% PF
Source (Swing Buses):	1.116	2.525	2.761	40.42 Lagging
Source (Non-Swing Buses):	1.812	0.000	1.812	100.00 Lagging
Total Demand:	2.928	2.525	3.867	75.73 Lagging
Total Motor Load:	2.406	1.679	2.933	82.00 Lagging
Total Static Load:	0.337	0.248	0.418	80.53 Lagging
Total Constant I Load:	0.000	0.000	0.000	
Total Generic Load:	0.000	0.000	0.000	
Apparent Losses:	0.186	0.598		
System Mismatch:	0.000	0.000		

Number of Iterations: 4