

Project : Tugas Akhir  
 Location : UPJP Kamojang unit 2  
 Contract:  
 Engineer : Arif Himawan  
 Filename : simulamikamajang

**ETAP**  
 12.6.0H

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**Bus Loading Summary Report**

Bus	Directly Connected Load										Total Bus Load				
	ID	kV	Rated Amp	Constant kVA		Constant Z		Constant I		Generic		MVA	% PF	Amp	Percent Loading
				MW	Mvar	MW	Mvar	MW	Mvar	MW	Mvar				
Bus3	11.800			0	0	0	0	0	0	0	0	3.481	88.9	170.3	
Bus5	6.300			0.858	0.363	0	0	0	0	0	0	2.937	89.1	320.4	
Bus9	0.380			0	0	0	0	0	0	0	0	0.758	90.9	1478.1	
Bus11	0.380			0.285	0.130	0	0	0	0	0	0	0.313	90.9	610.9	
Bus12	0.380			0.299	0.135	0	0	0	0	0	0	0.328	91.2	639.8	
Bus13	0.380			0.105	0.051	0	0	0	0	0	0	0.117	89.8	227.5	
Bus16	11.800			0	0	0	0	0	0	0	0	1.673	96.8	81.8	
Bus18	6.300			0	0	0	0	0	0	0	0	3.365	91.2	319.0	
Bus19	6.300			1.709	0.707	0	0	0	0	0	0	2.559	91.7	279.2	
Bus21	0.380			0	0	0	0	0	0	0	0	0.696	91.1	1220.4	
Bus22	0.380			0.266	0.119	0	0	0	0	0	0	0.292	91.3	511.7	
Bus23	0.380			0.255	0.115	0	0	0	0	0	0	0.280	91.2	490.5	
Bus24	0.380			0.113	0.053	0	0	0	0	0	0	0.124	90.6	218.1	
Bus25	6.300			0	0	0	0	0	0	0	0	1.655	97.5	153.3	
Bus26	6.300			0	0	0	0	0	0	0	0	0.786	89.1	93.8	
Bus30	6.300			0	0	0	0	0	0	0	0	1.198	82.0	130.7	
Bus31	6.300			0	0	0	0	0	0	0	0	0	0.0	0.0	

\* 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	Loading		Capability	Loading (input)		Loading (output)	
		(Amp)	Amp	%	(MVA)	MVA	%	MVA	%
Cable2	Cable	331.22	93.85	28.33					
Cable8	Cable	331.22	3.11	0.94					
T1	Transformer				4.000	3.481	87.0	3.365	84.1
T2	Transformer				1.250	0.786	62.9	0.758	60.6
T3	Transformer				4.000	1.673	41.8	1.655	41.4
T4	Transformer				1.750	0.710	40.6	0.696	39.8

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

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**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	3.093	1.597	-3.068	-1.382	25.3	215.2	100.0	96.7	3.34
Cable1	-2.616	-1.335	3.068	1.382	452.0	46.8	84.0	96.7	12.66
Cable2	0.776	0.316	-0.700	-0.357	75.8	-41.3	84.0	76.7	7.27
T2	-0.688	-0.317	0.700	0.357	11.5	40.3	77.9	76.7	2.87
T3	1.619	0.419	-1.613	-0.369	5.8	49.7	100.0	99.0	1.04
Cable4	-1.365	-0.333	1.613	0.369	248.5	36.2	84.0	99.0	14.96
T4	0.638	0.311	-0.634	-0.286	4.2	25.2	84.0	86.6	1.72
Cable8	0.000	-0.029	0.000	0.000	0.0	-28.5	84.0	84.0	0.01
					823.2	343.6			

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**Alert Summary Report**

**% Alert Settings**

	<b><u>Critical</u></b>	<b><u>Marginal</u></b>
<b><u>Loading</u></b>		
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
<b><u>Bus Voltage</u></b>		
OverVoltage	105.0	102.0
UnderVoltage	95.0	98.0
<b><u>Generator Excitation</u></b>		
OverExcited (Q Max.)	100.0	95.0
UnderExcited (Q Min.)	100.0	

**Critical Report**

<b><u>Device ID</u></b>	<b><u>Type</u></b>	<b><u>Condition</u></b>	<b><u>Rating/Limit</u></b>	<b><u>Unit</u></b>	<b><u>Operating</u></b>	<b><u>% Operating</u></b>	<b><u>Phase Type</u></b>
Bus11	Bus	Under Voltage	0.380	kV	0.296	77.9	3-Phase
Bus12	Bus	Under Voltage	0.380	kV	0.296	77.9	3-Phase
Bus13	Bus	Under Voltage	0.380	kV	0.296	77.9	3-Phase
Bus19	Bus	Under Voltage	6.300	kV	5.292	84.0	3-Phase
Bus21	Bus	Under Voltage	0.380	kV	0.329	86.6	3-Phase
Bus22	Bus	Under Voltage	0.380	kV	0.329	86.6	3-Phase
Bus23	Bus	Under Voltage	0.380	kV	0.329	86.6	3-Phase
Bus24	Bus	Under Voltage	0.380	kV	0.329	86.6	3-Phase
Bus26	Bus	Under Voltage	6.300	kV	4.834	76.7	3-Phase
Bus30	Bus	Under Voltage	6.300	kV	5.292	84.0	3-Phase
Bus31	Bus	Under Voltage	6.300	kV	5.293	84.0	3-Phase
Bus5	Bus	Under Voltage	6.300	kV	5.292	84.0	3-Phase
Bus9	Bus	Under Voltage	0.380	kV	0.296	77.9	3-Phase

**Marginal Report**

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**Marginal Report**

<u>Device ID</u>	<u>Type</u>	<u>Condition</u>	<u>Rating/Limit</u>	<u>Unit</u>	<u>Operating</u>	<u>% Operating</u>	<u>Phase Type</u>
Bus18	Bus	Under Voltage	6.300	kV	6.089	96.7	3-Phase

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**SUMMARY OF TOTAL GENERATION, LOADING & DEMAND**

	<b>MW</b>	<b>Mvar</b>	<b>MVA</b>	<b>% PF</b>
Source (Swing Buses):	4.713	2.016	5.126	91.94 Lagging
Source (Non-Swing Buses):	0.000	0.000	0.000	
Total Demand:	4.713	2.016	5.126	91.94 Lagging
Total Motor Load:	3.889	1.673	4.234	91.87 Lagging
Total Static Load:	0.000	0.000	0.000	
Total Constant I Load:	0.000	0.000	0.000	
Total Generic Load:	0.000	0.000	0.000	
Apparent Losses:	0.823	0.344		
System Mismatch:	0.000	0.000		

Number of Iterations: 2