

Project: ETAP  
Location: 19.0.1C  
Contract:  
Engineer:  
Filename: fff  
Study Case: LF

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Date: 15-09-2023  
SN:  
Revision: Base  
Config.: Normal

**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	22.000										0.201	83.8	5.3	
Bus2	22.000			0.000							0.201	83.8	5.3	
Bus3	0.400			0.000							0.196	85.0	289.6	
Bus16	0.400		0.019	0.012	0.074	0.046					0.110	85.0	162.8	
Bus17	0.400		0.001	0.001	0.004	0.002					0.006	85.0	8.4	
Bus19	0.400		0.010	0.006	0.036	0.022					0.054	85.0	79.8	
Bus20	0.400		0.001	0.001	0.006	0.003					0.008	85.0	12.4	
Bus21	0.400		0.003	0.002	0.012	0.007					0.018	85.0	26.2	
EMDP-B	0.400			0.000							0.026	85.1	38.6	
MDP	0.400			0.000							0.195	85.0	289.6	
UPS-B	0.400			0.000							0.026	85.0	38.6	

\* 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).

Branch Loading Summary Report

CKT / Branch		Busway / Cable & Reactor			Transformer				
ID	Type	Ampacity (Amp)	Loading Amp	%	Capability (MVA)	Loading (input)		Loading (output)	
						MVA	%	MVA	%
C2	Cable	136.89	79.76	58.27					
C3	Cable	258.87	162.78	62.88					
C4	Cable	37.25	8.37	22.48					
C11	Cable	37.25	12.41	33.32					
C12	Cable	48.42	26.23	54.17					
C14	Cable	66.12	38.64	58.45					
C18	Cable	258.87	38.64	14.93					
Cable2	Cable	342.54	5.26	1.54					
T1	Transformer				0.300	0.201	66.9	0.196	65.2

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

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**Branch Losses Summary Report**

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	
C11	-0.007	-0.004	0.007	0.004	0.0	0.0	97.1	97.1	0.03
C12	-0.015	-0.009	0.015	0.009	0.0	0.0	97.0	97.1	0.07
C14	0.022	0.014	-0.022	-0.014	0.0	0.0	97.2	97.1	0.10
C18	-0.022	-0.014	0.022	0.014	0.0	0.0	97.2	97.2	0.02
C2	-0.046	-0.028	0.046	0.028	0.0	0.0	97.2	97.2	0.04
C3	-0.093	-0.058	0.093	0.058	0.1	0.0	97.2	97.2	0.05
C4	-0.005	-0.003	0.005	0.003	0.0	0.0	97.2	97.2	0.02
Cable2	0.168	0.109	-0.168	-0.109	0.0	0.0	100.0	100.0	0.00
Cable3	0.166	0.103	-0.166	-0.103	0.5	0.3	97.5	97.2	0.27
T1	0.168	0.109	-0.166	-0.103	1.8	6.4	100.0	97.5	2.50
					2.4	6.7			

\* This Transmission Line includes Series Capacitor.

Alert Summary Report

	% Alert Settings	
	Critical	Marginal
Loading		
Bus	100.0	95.0
Cable / Busway	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	

Marginal Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
Bus16	Bus	Under Voltage	0.400	kV	0.389	97.2	3-Phase
Bus17	Bus	Under Voltage	0.400	kV	0.389	97.2	3-Phase
Bus19	Bus	Under Voltage	0.400	kV	0.389	97.2	3-Phase
Bus20	Bus	Under Voltage	0.400	kV	0.388	97.1	3-Phase
Bus21	Bus	Under Voltage	0.400	kV	0.388	97.0	3-Phase
Bus3	Bus	Under Voltage	0.400	kV	0.390	97.5	3-Phase
EMDP-B	Bus	Under Voltage	0.400	kV	0.389	97.2	3-Phase
MDP	Bus	Under Voltage	0.400	kV	0.389	97.2	3-Phase
UPS-B	Bus	Under Voltage	0.400	kV	0.388	97.1	3-Phase

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

	MW	Mvar	MVA	% PF
Source (Swing Buses):	0.168	0.109	0.201	83.81 Lagging
Source (Non-Swing Buses):	0.000	0.000	0.000	
Total Demand:	0.168	0.109	0.201	83.81 Lagging
Total Motor Load:	0.035	0.021	0.041	85.01 Lagging
Total Static Load:	0.131	0.081	0.154	85.00 Lagging
Total Constant I Load:	0.000	0.000	0.000	
Total Generic Load:	0.000	0.000	0.000	
Apparent Losses:	0.002	0.007		
System Mismatch:	0.000	0.000		

Number of Iterations: 2