

Project: ETAP
Location: 19.0.1C
Contract:
Engineer:
Filename: AS-BUILT-INITIAL
Study Case: LF

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Date: 01-14-2025
SN:
Revision: Base
Config.: Normal

Bus Loading Summary Report

Bus			Directly Connected Load								Total Bus Load			
			Constant kVA		Constant Z		Constant I		Generic		kVA	% PF	Amp	Percent Loading
ID	V	Rated Amp	kW	kvar	kW	kvar	kW	kvar	kW	kvar				
SGEN B	240.00													
01 B	240.00		4.134	2.562	5.110	3.167					10.874	85.0	27.6	
02 B	240.00		27.818	17.240	6.272	3.887					40.106	85.0	101.6	
03 B	240.00			0.000	10.593	6.565					12.462	85.0	31.6	
3F4F B	240.00										62.114	85.1	155.0	
04 B	240.00			0.000	1.393	0.863					1.639	85.0	4.1	
05 B	240.00		22.312	13.828							26.250	85.0	65.9	
06 B	240.00		11.921	7.388							14.025	85.0	35.1	
07 B	240.00		22.312	13.828							26.250	85.0	65.6	
ACU B	240.00		2.231	1.383							2.625	85.0	6.6	
ACU1 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU2 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU3 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU4 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU5 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU6 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU7 B	240.00		2.231	1.383							2.625	85.0	6.5	
ACU8 B	240.00		2.231	1.383							2.625	85.0	6.5	
BSMT B	240.00			0.000	2.557	1.585					3.008	85.0	7.5	
CLINIC B	240.00		6.321	3.917	10.833	6.714					20.181	85.0	50.5	
DP ML B	240.00										86.867	85.0	220.0	
DP-01 B	240.00		0.000	0.000							223.875	85.0	554.6	
DP-2 B	240.00										264.075	85.2	654.3	
DP-3F B	240.00										61.005	85.1	152.2	
EDP1 B	240.00										224.070	85.0	554.6	
EDP2 B	240.00										264.244	85.2	654.3	
EE/ECE B	240.00		17.521	10.858	16.374	10.147					39.876	85.0	99.2	
G1 B	240.00										224.070	85.0	554.6	
G2 B	240.00										264.245	85.2	654.3	
HS LIB B	240.00		8.741	5.417	2.054	1.273					12.701	85.0	31.5	
JHS ME B	240.00										68.259	85.1	169.1	
L-ACU B	240.00		28.651	17.756							33.707	85.0	84.1	
L4F B	240.00		0.101	0.062	0.842	0.522					1.109	85.0	2.8	
L373 B	240.00			0.000	12.999	8.056					15.293	85.0	38.2	
L374 B	240.00			0.000	12.950	8.026					15.236	85.0	38.1	
L375 B	240.00			0.000	12.888	7.987					15.163	85.0	38.0	
L376 B	240.00			0.000	12.825	7.948					15.088	85.0	37.9	
LG1 B	240.00			0.000	15.582	9.657					18.332	85.0	46.5	
LG2 B	240.00			0.000	2.034	1.261					2.393	85.0	6.1	

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Bus			Directly Connected Load								Total Bus Load			
			Constant kVA		Constant Z		Constant I		Generic		kVA	% PF	Amp	Percent Loading
			kW	kvar	kW	kvar	kW	kvar	kW	kvar				
ID	V	Rated Amp												
MAIN B	240.00		0.005	-0.005							488.689	85.0	1209.0	
MDP DNY B	240.00										98.833	85.1	246.6	
MDP SAL B	240.00										17.690	85.0	44.3	
MDP-CLPH-B	240.00										62.783	85.1	156.2	
ME LAB B	240.00		2.672	1.656	2.516	1.559					6.103	85.0	15.1	
ME157 B	240.00		2.985	1.850	0.703	0.436					4.339	85.0	10.8	
OB B	240.00		2.344	1.453	5.140	3.186					8.805	85.0	21.8	
PB-ACU-1 B	240.00		6.451	3.998							7.589	85.0	18.9	
PB-ACU-2 B	240.00		14.298	8.861							16.821	85.0	42.0	
PB-LB B	240.00										20.738	85.0	52.5	
PB-SAL-GF B	240.00										6.137	85.0	15.4	
PERICAN B	240.00			0.000	5.351	3.316					6.295	85.0	15.6	
PHYS B	240.00		4.582	2.839	6.338	3.928					12.847	85.0	32.2	
PO B	240.00		0.260	0.161	2.207	1.368					2.903	85.0	7.2	
PO B3	240.00		21.182	13.127	8.457	5.241					34.869	85.0	86.9	
R163 B	240.00			0.000	1.668	1.033					1.962	85.0	4.9	
R164 B	240.00		1.046	0.648	0.591	0.366					1.926	85.0	4.8	
R165 B	240.00		1.603	0.994	0.164	0.102					2.079	85.0	5.2	
RO B	240.00		0.820	0.508	6.937	4.299					9.127	85.0	22.6	
SAL-2F B	240.00		0.458	0.284	3.802	2.356					5.012	85.0	12.6	
SAL-3F B	240.00		0.268	0.166	2.222	1.377					2.929	85.0	7.3	
SAL 4F B	240.00		0.330	0.205	2.737	1.697					3.609	85.0	9.0	
SAL-STAIRS B	240.00		0.116	0.072	0.981	0.608					1.291	85.0	3.2	
SALGF B	240.00		0.291	0.181	1.513	0.937					2.122	85.0	5.3	
TAC B	240.00										25.367	85.1	63.1	
TR B	240.00		0.909	0.563	3.380	2.095					5.046	85.0	12.6	
TR/AUDI B	240.00										63.401	85.2	157.1	
VECO B	23000.00										502.547	83.8	12.6	
XFORMER B	240.00		-0.006	0.002							492.278	84.9	1208.9	

* 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 (kVA)	Loading (input)		Loading (output)	
						kVA	%	kVA	%
DP-01 C	Cable	959.72	554.62	57.79					
DP-02 C	Cable	959.72	654.33	68.18					
EDP1 C	Cable	959.72	554.62	57.79					
EDP2 C	Cable	959.72	654.33	68.18					
EE/ECE C	Cable	498.56	99.23	19.90					
HS LIB C	Cable	498.56	31.51	6.32					
LG-02 C	Cable	57.73	6.06	10.50					
LINK C	Cable	498.56	246.57	49.46					
* MAIN C	Cable	1125.00	1208.95	107.46					
MAIN LIB C	Cable	575.22	219.97	38.24					
MDP-CLPH C	Cable	498.56	156.23	31.34					
ME LAB C	Cable	498.56	15.13	3.03					
ME157&158 C	Cable	498.56	10.75	2.16					
OB C	Cable	498.56	21.85	4.38					
PB-LINK-4F C	Cable	183.14	2.77	1.51					
PERICAN C	Cable	498.56	15.61	3.13					
3-167 kVA	Transformer				501.0	502.5	100.3	492.3	98.3

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

Branch Losses Summary Report

Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop in Vmag
	kw	kvar	kw	kvar	kW	kvar	From	To	
04 C	-1.4	-0.9	1.4	0.9	0.0	0.0	97.0	97.1	0.05
3-167 kVA	421.2	274.2	-417.7	-260.5	3.5	13.7	100.0	98.0	2.04
ACU C	-2.2	-1.4	2.2	1.4	0.0	0.0	95.0	95.0	0.03
ACU6 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.5	97.1	0.56
ACU7 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.5	97.1	0.60
ACU8 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.5	97.1	0.61
DP-01 C	-190.3	-118.0	190.4	118.2	0.1	0.2	97.1	97.2	0.08
DP-02 C	-224.9	-138.4	225.0	138.5	0.1	0.2	97.1	97.1	0.06
EDP1 C	-190.4	-118.2	190.5	118.3	0.1	0.1	97.2	97.2	0.05
EDP2 C	-225.0	-138.5	225.2	138.8	0.1	0.2	97.1	97.2	0.09
EE/ECE C	34.0	21.1	-33.9	-21.0	0.1	0.1	97.1	96.7	0.43
HS LIB C	10.8	6.7	-10.8	-6.7	0.0	0.0	97.1	97.0	0.14
L-ACU C	-28.7	-17.8	28.7	17.8	0.0	0.0	96.4	96.4	0.01
LG-01 C	-15.6	-9.7	15.6	9.7	0.0	0.0	94.9	95.0	0.07
LG-02 C	-2.0	-1.3	2.0	1.3	0.0	0.0	95.0	95.0	0.04
LINK C	84.6	52.5	-84.1	-52.0	0.5	0.5	97.1	96.4	0.68
LRAC-ACU-04 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.6	97.1	0.53
LRAC-ACU-05 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.5	97.1	0.54
LRAC-ACU1 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.6	97.1	0.51
LRAC-ACU2 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.6	97.1	0.52
LRAC-ACU3 C	-2.2	-1.4	2.2	1.4	0.0	0.0	96.9	97.1	0.16
MAIN C	-415.6	-257.0	417.7	260.5	2.1	3.5	97.2	98.0	0.72
MAIN LIB C	-73.9	-45.7	75.6	46.5	1.8	0.7	95.0	97.1	2.09
MDP-CLPH C	53.6	33.2	-53.4	-33.0	0.2	0.2	97.1	96.7	0.43
MDP-SAL C	15.2	9.4	-15.0	-9.3	0.2	0.0	97.1	96.0	1.06
ME C1	29.9	18.4	-29.6	-18.4	0.2	0.0	97.1	96.5	0.57
ME LAB C	5.2	3.2	-5.2	-3.2	0.0	0.0	97.1	97.0	0.07
ME157&158 C	3.7	2.3	-3.7	-2.3	0.0	0.0	97.1	97.1	0.03
OB C	7.5	4.6	-7.5	-4.6	0.0	0.0	97.1	96.9	0.16
PB-01 C	-9.2	-5.7	9.3	5.7	0.0	0.0	94.6	95.0	0.39
PB-02 C	-34.1	-21.1	34.1	21.1	0.0	0.0	95.0	95.0	0.03
PB-03 C	-10.6	-6.6	10.6	6.6	0.0	0.0	95.0	95.0	0.02
PB-05 C	-22.3	-13.8	22.7	13.9	0.3	0.1	95.9	97.1	1.20
PB-06 C	-11.9	-7.4	12.1	7.4	0.2	0.0	96.0	97.1	1.05

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Branch ID	From-To Bus Flow		To-From Bus Flow		Losses		% Bus Voltage		Vd % Drop
	kw	kvar	kw	kvar	kW	kvar	From	To	in Vmag
PB-07 C	-22.3	-13.8	22.5	13.9	0.2	0.0	96.3	97.1	0.82
PB-ACU-1 C	6.5	4.0	-6.5	-4.0	0.0	0.0	96.7	96.5	0.13
PB-ACU-2 C	14.4	8.9	-14.3	-8.9	0.1	0.0	96.7	96.3	0.36
PB-BSMT C-	-2.6	-1.6	2.6	1.6	0.0	0.0	96.4	96.4	0.01
PB-CLINIC C	-17.2	-10.6	17.3	10.7	0.1	0.0	96.1	96.7	0.61
PB-LINK-373 C	13.0	8.1	-13.0	-8.1	0.0	0.0	96.4	96.4	0.05
PB-LINK-374 C	13.0	8.0	-13.0	-8.0	0.0	0.0	96.4	96.2	0.23
PB-LINK-375 C	13.0	8.0	-12.9	-8.0	0.1	0.0	96.4	96.0	0.46
PB-LINK-376 C	12.9	8.0	-12.8	-7.9	0.1	0.0	96.4	95.7	0.69
PB-LINK-4F C	0.9	0.6	-0.9	-0.6	0.0	0.0	96.4	96.4	0.01
PB-PHYS C	11.0	6.8	-10.9	-6.8	0.1	0.0	96.7	96.0	0.64
PB-PO C	2.5	1.5	-2.5	-1.5	0.0	0.0	97.1	97.0	0.05
PB-RO C	7.8	4.8	-7.8	-4.8	0.0	0.0	97.1	96.9	0.15
PB-SAL-2F C	4.3	2.6	-4.3	-2.6	0.0	0.0	96.0	96.0	0.02
PB-SAL-3F C	2.5	1.5	-2.5	-1.5	0.0	0.0	96.0	96.0	0.02
PB-SAL-4F C	3.1	1.9	-3.1	-1.9	0.0	0.0	96.0	96.0	0.05
PB-SAL-GF C	1.8	1.1	-1.8	-1.1	0.0	0.0	96.0	95.7	0.31
PB-SAL-GF-R163 C	1.7	1.0	-1.7	-1.0	0.0	0.0	97.1	97.0	0.08
PB-SAL-R164 C	1.6	1.0	-1.6	-1.0	0.0	0.0	96.0	96.0	0.06
PB-SAL-R165 C	1.8	1.1	-1.8	-1.1	0.0	0.0	96.0	96.0	0.06
PB-TROOM C	4.3	2.7	-4.3	-2.7	0.0	0.0	96.7	96.4	0.24
PERICAN C	5.4	3.3	-5.4	-3.3	0.0	0.0	97.1	97.0	0.12
SAL-STAIRS C	1.1	0.7	-1.1	-0.7	0.0	0.0	97.1	97.1	0.01
					10.6	19.8			

* This Transmission Line includes Series Capacitor.

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Alert Summary Report

% Alert Settings

	<u>Critical</u>	<u>Marginal</u>
<u>Loading</u>		
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
<u>Bus Voltage</u>		
OverVoltage	110.0	105.0
UnderVoltage	90.0	95.0
<u>Generator Excitation</u>		
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
DP-3F CB	LV CB	Overload	100.000	Amp	152.196	152.2	3-Phase
MAIN C	Cable	Overload	1125.000	Amp	1208.952	107.5	3-Phase
STANDBY GEN	Generator	Under Excited	0.000	kvar	0.000	0.0	3-Phase
STANDBY GEN	Generator	Under Power	0.000	kW	0.000	0.0	3-Phase

Marginal Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
01 B	Bus	Under Voltage	240.000	V	227.069	94.6	3-Phase
02 B	Bus	Under Voltage	240.000	V	227.915	95.0	3-Phase
03 B	Bus	Under Voltage	240.000	V	227.948	95.0	3-Phase
3-167 kVA	Transformer	Overload	501.000	kVA	492.278	98.3	3-Phase
ACU B	Bus	Under Voltage	240.000	V	227.935	95.0	3-Phase
DP ML B	Bus	Under Voltage	240.000	V	227.997	95.0	3-Phase
LG1 B	Bus	Under Voltage	240.000	V	227.838	94.9	3-Phase
LG2 B	Bus	Under Voltage	240.000	V	227.907	95.0	3-Phase

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Marginal Report

Device ID	Type	Condition	Rating/Limit	Unit	Operating	% Operating	Phase Type
LINK-CB	LV CB	Overload	250.000	Amp	246.569	98.6	3-Phase
MDP DNY MAIN	LV CB	Overload	250.000	Amp	246.569	98.6	3-Phase
PB-LB B	Bus	Under Voltage	240.000	V	227.997	95.0	3-Phase

SUMMARY OF TOTAL GENERATION , LOADING & DEMAND

	kW	kvar	kVA	% PF
Source (Swing Buses):	421.2	274.2	502.5	83.81 Lagging
Source (Non-Swing Buses):	0.0	0.0	0.0	
Total Demand:	421.2	274.2	502.5	83.81 Lagging
Total Motor Load:	230.5	142.9	271.2	85.00 Lagging
Total Static Load:	180.0	111.6	211.8	85.00 Lagging
Total Constant I Load:	0.0	0.0	0.0	
Total Generic Load:	0.0	0.0	0.0	
Apparent Losses:	10.6	19.8		
System Mismatch:	0.0	0.0		

Number of Iterations: 4