Electrical Transient Analyzer Program

Short-Circuit Analysis

ANSI Standard

3-Phase, LG, LL, & LLG Fault Currents

1/2 Cycle Network

	Swing	V-Control	Load	Total
Number of Buses:	1	1	32	34

	XFMR2	XFMR3	Reactor	Line/Cable/ Busway	Impedance	Tie PD	Total
Number of Branches:	1	0	0	29	0	3	33

	Synchronous Generator	Power Grid	Synchronous Motor	Induction Machines	Lumped Load	Total
Number of Machines:	0	1	1	0	22	24

System Frequency:	60.00
Unit System:	English
Project Filename:	Power System
Output Filename:	C:\ETAP 1901\Power System\test1.SA2S

Adjustments

Tolerance	Apply Adjustments	Individual /Global	Percent
Transformer Impedance:	Yes	Individual	
Reactor Impedance:	Yes	Individual	
Overload Heater Resistance:	No		
Transmission Line Length:	No		
Cable / Busway Length:	No		

Temperature Correction	Apply Adjustments	Individual /Global	Degree C
Transmission Line Resistance:	Yes	Individual	
Cable / Busway Resistance:	Yes	Individual	

Bus Input Data

Bus					Initial Voltage	
ID	Type	Nom. kV	Base kV	Sub-sys	%Mag.	Ang.
Bus 12B	Load	0.208	0.208	1	100.00	-30.00
Bus M2C	Load	0.208	0.208	1	100.00	-30.00
Bus M2E	Load	0.208	0.208	1	100.00	-30.00
Bus28	Load	0.208	0.208	1	100.00	-30.00
Bus48	Load	0.208	0.208	1	100.00	-30.00
Bus50	Load	0.208	0.208	1	100.00	-30.00
Bus51	Gen.	0.208	0.208	1	0.00	-30.00
Bus53	Load	0.208	0.208	1	100.00	-30.00
Bus54	Load	0.208	0.208	1	100.00	-30.00
Bus56	Load	0.208	0.208	1	100.00	-30.00
Bus57	Load	0.208	0.208	1	100.00	-30.00
Bus58	Load	0.208	0.208	1	100.00	-30.00
Bus59	Load	0.208	0.208	1	100.00	-30.00
Bus60	Load	0.208	0.208	1	100.00	-30.00
Bus61	Load	0.208	0.208	1	100.00	-30.00
Bus62	Load	0.208	0.208	1	100.00	-30.00
Bus63	Load	0.208	0.208	1	100.00	-30.00
Bus64	Load	0.208	0.208	1	100.00	-30.00
Bus65	Load	0.208	0.208	1	100.00	-30.00
Bus68	Load	0.208	0.208	1	100.00	-30.00
Bus69	Load	0.208	0.208	1	100.00	-30.00
Bus70	Load	0.208	0.208	1	100.00	-30.00
Bus74	Load	0.208	0.208	1	100.00	-30.00
Bus75	Load	0.208	0.208	1	100.00	-30.00
Bus76	Load	0.208	0.208	1	100.00	-30.00
Bus77	Load	0.208	0.208	1	100.00	-30.00
Bus78	Load	0.208	0.208	1	100.00	-30.00
Bus81	Load	0.208	0.208	1	100.00	-30.00
Bus84	Load	0.208	0.208	1	100.00	-30.00
Bus88	Load	0.208	0.208	1	100.00	-30.00
Bus90	Load	0.208	0.208	1	100.00	-30.00
LV Bus	Load	0.208	0.208	1	100.00	-30.00
Main Bus	SWNG	25.000	25.000	1	100.00	0.00
UPS Incoming Bus	Load	0.208	0.208	1	100.00	-30.00

34 Buses Total

All voltages reported by ETAP are in % of bus Nominal kV.
Base kV values of buses are calculated and used internally by ETAP.

Line/Cable/Busway Input Data

Line/Cable/Busway			Length			ohms or siemens per 1000 ft per Conductor (Cable) or per Phase (Line/Busway)					
ID	Library	Size	Adj. (ft)	% Tol.	#/Phase	T (°C)	R1	X1	Y1	R0	X0	Y0
Cable7			118.1	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable9			65.6	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable10			91.9	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable71			98.4	0.0	1	75	0.0009538	0.37699	0.001	0.0009538	0.37699	0.001
Cable72			98.4	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable74			91.9	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable76			65.6	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable77			72.2	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable78			72.2	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable79			72.2	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable80			72.2	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable81			118.1	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable82			118.1	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable83			118.1	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable84			95.1	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable85			137.8	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable86			275.6	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable87			150.9	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable90			68.9	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable91			108.3	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable94			137.8	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable95			124.7	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable96			75.5	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable97			108.3	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable98			98.4	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable101			98.4	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable104			20.0	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable111			98.4	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001
Cable113			98.4	0.0	1	75	0.001	0.37699	0.001	0.001	0.37699	0.001

Line / Cable / Busway resistances are listed at the specified temperatures.

2-Winding Transformer Input Data

Transformer	Rating					Z Variation			% Tap Setting		Adjusted	Phase Shift	
ID	MVA	Prim. kV	Sec. kV	% Z	X/R	+ 5%	- 5%	% Tol.	Prim.	Sec.	% Z	Type	Angle
T14	0.225	25.000	0.208	4.00	3.45	0	0	0	0	0	4.00	Dyn	30.00

2-Winding Transformer Grounding Input Data

Transformer	Rating			Conn.	Grounding							
					Primary				Secondary			
ID	MVA	Prim. kV	Sec. kV	Type	Type	kV	Amp	ohm	Type	kV	Amp	ohm
T14	0.225	25.000	0.208	D/Y					Solid			

Branch Connections

CKT/Branch		Connected Bus ID		% Impedance, Pos. Seq., 100 MVAb			
ID	Type	From Bus	To Bus	R	X	Z	Y
T14	2W XFMR	Main Bus	Bus50	494.93	1707.50	1777.78	
Cable7	Cable	LV Bus	UPS Incoming Bus	27.30	10291.78	10291.82	0.0000051
Cable9	Cable	LV Bus	Bus M2C	15.17	5717.66	5717.68	0.0000028
Cable10	Cable	LV Bus	Bus28	21.23	8004.72	8004.75	0.0000040
Cable71	Cable	Bus50	Bus48	21.70	8576.49	8576.52	0.0000043
Cable72	Cable	Bus51	LV Bus	22.75	8576.49	8576.52	0.0000043
Cable74	Cable	LV Bus	Bus53	21.23	8004.72	8004.75	0.0000040
Cable76	Cable	LV Bus	Bus54	15.17	5717.66	5717.68	0.0000028
Cable77	Cable	Bus M2C	Bus68	16.68	6289.42	6289.45	0.0000031
Cable78	Cable	Bus M2C	Bus56	16.68	6289.42	6289.45	0.0000031
Cable79	Cable	Bus M2C	Bus57	16.68	6289.42	6289.45	0.0000031
Cable80	Cable	Bus M2C	Bus58	16.68	6289.42	6289.45	0.0000031
Cable81	Cable	Bus M2C	Bus59	27.30	10291.78	10291.82	0.0000051
Cable82	Cable	Bus M2C	Bus60	27.30	10291.78	10291.82	0.0000051
Cable83	Cable	Bus M2C	Bus61	27.30	10291.78	10291.82	0.0000051
Cable84	Cable	Bus M2C	Bus62	21.99	8290.60	8290.63	0.0000041
Cable85	Cable	Bus M2C	Bus63	31.85	12007.08	12007.12	0.0000060
Cable86	Cable	Bus M2C	Bus64	63.70	24014.16	24014.25	0.0000119
Cable87	Cable	Bus M2C	Bus65	34.88	13150.61	13150.66	0.0000065
Cable90	Cable	Bus M2C	Bus69	15.92	6003.54	6003.56	0.0000030
Cable91	Cable	Bus M2C	Bus70	25.02	9434.14	9434.17	0.0000047
Cable94	Cable	Bus M2C	Bus74	31.85	12007.08	12007.12	0.0000060
Cable95	Cable	Bus M2C	Bus75	28.82	10863.55	10863.59	0.0000054
Cable96	Cable	Bus M2C	Bus76	17.44	6575.31	6575.33	0.0000033
Cable97	Cable	Bus M2C	Bus77	25.02	9434.14	9434.17	0.0000047
Cable98	Cable	Bus 12B	Bus78	22.75	8576.49	8576.52	0.0000043
Cable101	Cable	Bus 12B	Bus81	22.75	8576.49	8576.52	0.0000043
Cable104	Cable	Bus 12B	Bus84	4.62	1742.74	1742.75	0.0000009
Cable111	Cable	Bus M2E	Bus88	22.75	8576.49	8576.52	0.0000043
Cable113	Cable	Bus M2E	Bus90	22.75	8576.49	8576.52	0.0000043
CB79	Tie Breakr	Bus53	Bus 12B				
2SW4	Tie Switch	Bus M2E	Bus28				
2SW5	Tie Switch	LV Bus	Bus48				

Power Grid Input Data

Power Grid	Connected Bus	Rating		% Positive Seq. Impedance 100 MVA Base			Grounding	% Zero Seq. Impedance 100 MVA Base		
ID	ID	MVASC	kV	X/R	R	X	Type	X/R	R0	X0
U1	Main Bus	250.000	25.000	0.01	39.99800	0.39998	Wye - Solid	0.01	39.998000	0.39998

Total Power Grids (= 1) 250.000 MVA

Synchronous Motor Input Data

Synchronous Motor			Rating (Base)			Positive Sequence Imp.					Grounding			Zero Seq. Imp.		
								Xd"								
ID	Type	Qty	kVA	kV	RPM	X"/R	% R	Adj.	Tol.	% X'	Conn.	Type	Amp	X/R	% R0	% X0
Syn1	Motor	1	28.1	0.200	1800	4.27	3.907	16.667	0.0	25.000	Wye	Open		4.27	3.91	16.67

Total Connected Synchronous Motors (= 1): 28.1 kVA

Lumped Load Input Data

Lumped Load	Lumped Load				Motor Loads									
	Rating		% Load		Loading		X/R Ratio		Impedance (Machine Base)			Grounding		
ID	kVA	kV	MTR	STAT	kW	kvar	X"/R	X'/R	% R	% X"	% X'	Conn.	Type	Amp.
Baseboard heater2	5.1	0.120	80	20	3.7	1.8	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
BaseBoard Heaterr	10.0	0.120	80	20	7.2	3.5	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
Cu-1	4.5	0.208	80	20	3.2	1.6	2.38	2.38	8.403	20.00	50.00	Delta		
Cu-2	5.8	0.208	80	20	4.2	2.0	2.38	2.38	8.403	20.00	50.00	Delta		
Cu-3	12.6	0.208	80	20	9.1	4.4	2.38	2.38	8.403	20.00	50.00	Delta		
Cu-4	12.0	0.208	80	20	8.6	4.2	2.38	2.38	8.403	20.00	50.00	Delta		
DHWT--01	0.6	0.120	80	20	0.4	0.2	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
EF--01	0.3	0.120	80	20	0.2	0.1	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
EF--02	2.1	0.208	80	20	1.5	0.7	2.38	2.38	8.403	20.00	50.00	Delta		
F-01	3.3	0.208	80	20	2.3	1.1	2.38	2.38	8.403	20.00	50.00	Delta		
F-02	3.3	0.208	80	20	2.3	1.1	2.38	2.38	8.403	20.00	50.00	Delta		
F-03	3.3	0.208	80	20	2.3	1.1	2.38	2.38	8.403	20.00	50.00	Delta		
F-04	3.9	0.208	80	20	2.8	1.4	2.38	2.38	8.403	20.00	50.00	Delta		
Force Flow Fan	0.6	0.120	80	20	0.5	0.2	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
ForceFlow Fan	1.5	0.120	80	20	1.1	0.5	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
Kitchen Eq1	711.6	0.120	80	20	512.4	248.2	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
OG Lighting	0.4	0.120	80	20	0.3	0.1	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
Og Lighting-1-10	2.6	0.120	80	20	1.9	0.9	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
Og Lighting-1-11	0.8	0.120	80	20	0.6	0.3	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
OG Power	19.2	0.208	80	20	13.8	6.7	2.38	2.38	8.403	20.00	50.00	Delta		
Og Power-1-3	50.4	0.120	80	20	36.3	17.6	2.38	2.38	8.403	20.00	50.00	Wye	Solid	
Og Power-1-4	125.5	0.120	80	20	92.0	40.1	2.38	2.38	8.403	20.00	50.00	Wye	Solid	

Total Connected Lumped Loads (= 22): 979.3 kVA

SHORT- CIRCUIT REPORT

Fault at bus: **Bus 12B**

Prefault voltage = 0.208 kV = 100.00 % of nominal bus kV (0.208 kV)
= 100.00 % of base kV (0.208 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
Bus 12B	Total	0.00	13.351	0.00	100.34	100.38	13.256	13.256	3.23E+002	2.06E+003	3.29E+002	2.09E+003
Bus78	Bus 12B	2.42	0.078	2.42	100.33	100.37	0.078	0.079	1.34E+005	3.29E+005	1.34E+005	3.29E+005
Bus81	Bus 12B	55.45	1.795	55.45	100.11	100.21	1.795	1.814	2.81E+003	1.52E+004	2.81E+003	1.52E+004
Bus84	Bus 12B	59.00	9.397	59.00	100.10	100.19	9.397	9.496	4.96E+002	2.91E+003	4.96E+002	2.91E+003
LV Bus	Bus53	60.43	2.095	57.66	101.68	101.40	1.999	1.880	7.80E+002	1.32E+004	8.43E+002	1.49E+004

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta- Y transformer

Fault at bus: **Bus M2C**

Prefault voltage = 0.208 kV = 100.00 % of nominal bus kV (0.208 kV)
= 100.00 % of base kV (0.208 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
Bus M2C	Total	0.00	4.043	0.00	105.75	102.67	3.719	3.719	9.77E+002	6.89E+003	7.61E+002	8.54E+003
LV Bus	Bus M2C	58.88	2.858	57.44	103.09	101.79	2.789	3.125	3.32E+002	9.71E+003	3.22E+002	1.02E+004
Bus68	Bus M2C	1.03	0.046	0.64	106.01	102.73	0.028	0.000	2.33E+005	5.62E+005		
Bus56	Bus M2C	1.33	0.059	0.82	106.08	102.75	0.036	0.000	1.81E+005	4.37E+005		
Bus57	Bus M2C	2.85	0.126	1.76	106.46	102.86	0.078	0.000	8.31E+004	2.04E+005		
Bus58	Bus M2C	2.71	0.120	1.68	106.42	102.85	0.074	0.000	8.76E+004	2.15E+005		
Bus59	Bus M2C	1.22	0.033	0.75	106.06	102.75	0.020	0.000	3.23E+005	7.80E+005		
Bus60	Bus M2C	1.22	0.033	0.75	106.06	102.75	0.020	0.000	3.23E+005	7.80E+005		
Bus61	Bus M2C	1.22	0.033	0.75	106.06	102.75	0.020	0.000	3.23E+005	7.80E+005		
Bus62	Bus M2C	1.18	0.039	0.73	106.05	102.74	0.024	0.000	2.69E+005	6.49E+005		
Bus63	Bus M2C	0.78	0.018	0.78	105.70	102.67	0.018	0.021	5.94E+005	1.42E+006	5.94E+005	1.42E+006
Bus64	Bus M2C	0.71	0.008	0.71	105.70	102.67	0.008	0.009	1.29E+006	3.11E+006	1.29E+006	3.11E+006
Bus65	Bus M2C	1.01	0.021	0.62	106.00	102.73	0.013	0.000	5.00E+005	1.20E+006		
Bus69	Bus M2C	3.29	0.152	3.29	105.51	102.66	0.152	0.175	6.86E+004	1.69E+005	6.86E+004	1.69E+005
Bus70	Bus M2C	0.67	0.020	0.67	105.70	102.67	0.020	0.023	5.40E+005	1.29E+006	5.40E+005	1.29E+006
Bus74	Bus M2C	0.53	0.012	0.53	105.71	102.67	0.012	0.014	8.74E+005	2.09E+006	8.74E+005	2.09E+006
Bus75	Bus M2C	7.18	0.183	4.43	107.51	103.20	0.113	0.000	5.47E+004	1.41E+005		
Bus76	Bus M2C	6.82	0.288	6.82	105.25	102.65	0.288	0.331	3.50E+004	8.98E+004	3.50E+004	8.98E+004
Bus77	Bus M2C	1.55	0.045	1.55	105.64	102.67	0.045	0.052	2.33E+005	5.64E+005	2.33E+005	5.64E+005

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta- Y transformer

Fault at bus: **Bus M2E**

Prefault voltage = 0.208 kV = 100.00 % of nominal bus kV (0.208 kV)
= 100.00 % of base kV (0.208 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
Bus M2E	Total	0.00	3.399	0.00	100.66	100.58	3.323	3.323	9.16E+002	8.20E+003	9.38E+002	8.51E+003
Bus88	Bus M2E	0.75	0.024	0.75	100.65	100.58	0.024	0.025	4.37E+005	1.05E+006	4.37E+005	1.05E+006
Bus90	Bus M2E	32.94	1.066	32.94	100.36	100.49	1.066	1.092	6.96E+003	2.51E+004	6.96E+003	2.51E+004
LV Bus	Bus28	67.20	2.330	65.01	100.95	100.67	2.254	2.228	3.99E+002	1.19E+004	3.59E+002	1.28E+004

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta- Y transformer

Fault at bus: **LV Bus**

Prefault voltage = 0.208 kV = 100.00 % of nominal bus kV (0.208 kV)
= 100.00 % of base kV (0.208 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
LV Bus	Total	0.00	7.773	0.00	104.26	103.03	7.349	7.349	3.97E+002	3.63E+003	3.68E+002	4.15E+003
UPS Incoming Bus	LV Bus	0.00	0.000	0.00	104.26	103.03	0.000	0.000				
Bus M2C	LV Bus	20.54	0.997	16.71	106.07	103.78	0.811	0.544	8.39E+003	2.65E+004	1.89E+004	5.31E+004
Bus28	LV Bus	24.08	0.835	24.08	103.06	102.50	0.835	0.922	6.89E+003	3.25E+004	6.89E+003	3.25E+004
Bus51	LV Bus	5.40	0.175	3.03	107.28	106.05	0.098	0.000	7.51E-003	1.59E+005		
Bus53	LV Bus	76.67	2.658	76.67	100.87	100.82	2.658	2.936	4.44E+002	1.04E+004	4.44E+002	1.04E+004
Bus54	LV Bus	9.24	0.449	5.84	106.21	104.02	0.284	0.000	1.29E+004	6.05E+004		
Bus50	Bus48	83.27	2.695	83.28	100.64	100.57	2.695	2.977	5.57E+002	1.03E+004	5.17E+002	1.03E+004

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta- Y transformer

Fault at bus: **Main Bus**

Prefault voltage = 25.000 kV = 100.00 % of nominal bus kV (25.000 kV)
= 100.00 % of base kV (25.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
Main Bus	Total	0.00	5.775	0.00	99.93	100.08	5.774	5.774	4.00E+001	5.00E-001	4.00E+001	4.00E-001
Bus50	Main Bus	11.40	0.015	62.31	60.12	100.08	0.010	0.000	1.24E+003	1.55E+004		
U1	Main Bus	100.00	5.774	100.00	100.00	100.00	5.774	5.774	4.00E+001	4.00E-001	4.00E+001	4.00E-001

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta- Y transformer

Short-Circuit Summary Report

1/2 Cycle - 3-Phase, LG, LL, & LLG Fault Currents

Prefault Voltage = 100 % of the Bus Nominal Voltage

Bus		3-Phase Fault			Line-to-Ground Fault			Line-to-Line Fault			*Line-to-Line-to-Ground		
ID	kV	Real	Imag.	Mag.	Real	Imag.	Mag.	Real	Imag.	Mag.	Real	Imag.	Mag.
Bus 12B	0.208	2.057	-13.192	13.351	2.050	-13.096	13.256	-11.402	-1.781	11.541	-12.431	4.746	13.306
Bus M2C	0.208	0.559	-4.004	4.043	0.446	-3.692	3.719	-3.444	-0.484	3.478	3.272	2.218	3.953
Bus M2E	0.208	0.372	-3.379	3.399	0.367	-3.303	3.323	-2.911	-0.323	2.929	2.736	1.965	3.369
LV Bus	0.208	0.826	-7.729	7.773	0.734	-7.312	7.349	-6.676	-0.715	6.714	6.367	4.251	7.655
Main Bus	25.000	5.774	-0.072	5.775	5.774	-0.067	5.774	-0.063	-5.001	5.001	-2.949	-4.969	5.779

All fault currents are symmetrical (1/2 Cycle network) values in rms kA.
* LLG fault current is the larger of the two faulted line currents.

Sequence Impedance Summary Report

Bus		Positive Seq. Imp. (ohm)			Negative Seq. Imp. (ohm)			Zero Seq. Imp. (ohm)			Fault Zf (ohm)		
ID	kV	Resistance	Reactance	Impedance	Resistance	Reactance	Impedance	Resistance	Reactance	Impedance	Resistance	Reactance	Impedance
Bus 12B	0.208	0.00140	0.00892	0.00903	0.00140	0.00892	0.00903	0.00142	0.00904	0.00915	0.00000	0.00000	0.00000
Bus M2C	0.208	0.00423	0.02981	0.03011	0.00423	0.02981	0.03011	0.00329	0.03695	0.03710	0.00000	0.00000	0.00000
Bus M2E	0.208	0.00396	0.03547	0.03569	0.00396	0.03547	0.03569	0.00406	0.03680	0.03702	0.00000	0.00000	0.00000
LV Bus	0.208	0.00172	0.01571	0.01580	0.00172	0.01571	0.01580	0.00159	0.01798	0.01805	0.00000	0.00000	0.00000
Main Bus	25.000	2.49922	0.03124	2.49942	2.49922	0.03124	2.49942	2.49988	0.02500	2.50000	0.00000	0.00000	0.00000