

Electrical Transient Analyzer Program

Short-Circuit Analysis

IEC 60909 Standard

3-Phase Fault Currents

	Swing	V-Control	Load	Total			
Number of Buses:	3	2	39	44			
	XFMR2	XFMR3	Reactor	Line/Cable/ Busway	Impedance	Tie PD	Total
Number of Branches:	3	0	0	20	0	19	42
	Synchronous Generator	Power Grid	Synchronous Motor	Induction Machines	Lumped Load	Inverter	Total
Number of Machines:	2	1	0	0	0	18	21

System Frequency:

50.00

Unit System:

Metric

Project Filename:

Man Fact GridDieselPV

Output Filename:

C:\ETAP 2401\Man Fact GridDieselPV\SC09.S11S

Project:

Location:

Contract:

Engineer:

Filename:

ETAP

24.0.1N

Study Case: SC

Man Fact GridDieselPV

Page: 2

Date: 13-09-2026

SN: DNDLYIR

Revision: Base

Config.: Normal

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	Global	20
Cable / Busway Resistance:	Yes	Global	20

Bus Input Data

Bus					Initial Voltage	
ID	Type	Nom. kV	Base kV	Sub-sys	%Mag.	Ang.
Bus1	Gen.	0.400	0.390	1	0.00	0.00
Bus2	Load	0.400	0.390	1	100.00	0.00
Bus3	Load	0.400	0.390	1	100.00	0.00
Bus4	Gen.	0.400	0.390	1	0.00	0.00
Bus5	Load	0.400	0.390	1	100.00	0.00
Bus6	Load	0.400	0.390	1	100.00	0.00
Bus7	Load	0.400	0.390	1	100.00	0.00
Bus8	Load	0.400	0.390	1	100.00	0.00
Bus9	Load	0.400	0.390	1	100.00	0.00
Bus10	Load	0.400	0.390	1	100.00	0.00
Bus11	Load	0.400	0.390	1	100.00	0.00
Bus12	Load	0.400	0.390	1	100.00	0.00
Bus13	Load	0.400	0.390	1	100.00	0.00
Bus14	Load	0.400	0.390	1	100.00	0.00
Bus15	Load	0.400	0.390	1	100.00	0.00
Bus16	Load	0.400	0.390	1	100.00	0.00
Bus17	Load	0.400	0.390	1	100.00	0.00
Bus18	Load	0.400	0.390	1	100.00	0.00
Bus19	Load	0.400	0.390	1	100.00	0.00
Bus20	Load	0.400	0.390	1	100.00	0.00
Bus21	Load	0.400	0.390	1	100.00	0.00
Bus22	Load	0.400	0.390	1	100.00	0.00
Bus23	Load	0.400	0.390	1	100.00	0.00
Bus24	Load	0.400	0.390	1	100.00	0.00
Bus25	Load	0.400	0.390	1	100.00	0.00
Bus26	Load	0.400	0.390	1	100.00	0.00
Bus27	Load	0.400	0.390	1	100.00	0.00
Bus28	Load	0.400	0.390	1	100.00	0.00
Bus29	Load	0.400	0.390	1	100.00	0.00
Bus30	Load	0.400	0.390	1	100.00	0.00
Bus31	Load	0.400	0.390	1	100.00	0.00
Bus32	Load	0.400	0.390	1	100.00	0.00
Bus33	Load	0.400	0.390	1	100.00	0.00
Bus34	Load	0.400	0.390	1	100.00	0.00
Bus35	Load	0.400	0.390	1	100.00	0.00
Bus36	Load	0.400	0.390	1	100.00	0.00
Bus37	Load	0.400	0.390	1	100.00	0.00
Bus38	SWNG	11.000	11.000	1	100.00	0.00
Bus39	Load	0.400	0.400	1	100.00	0.00
Bus40	Load	11.000	11.000	1	100.00	0.00
Bus41	SWNG	0.400	0.400	2	100.00	0.00

Bus					Initial Voltage	
ID	Type	Nom. kV	Base kV	Sub-sys	%Mag.	Ang.
Bus42	SWNG	0.400	0.400	1	100.00	0.00
Bus43	Load	0.400	0.410	1	100.00	0.00
Bus44	Load	0.400	0.410	1	100.00	0.00

44 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

ohms or siemens/1000 m per Conductor (Cable) or per Phase (Line/Busway)									
Line/Cable/Busway		Length							
ID	Library	Size	Adj. (m)	% Tol.	#/Phase	T (°C)	R	X	Y
Cable1	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable2		70	40.0	0	1	20	0.08800	0.13226	0.0000503
Cable3	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable4	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable5	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable6	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable7	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable8	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable9	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable10	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable11	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable12	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable13	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable14	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable15	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable16	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable17	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable18	1.0NCUN4	70	40.0	0	1	20	0.26822	0.07500	0.0001307
Cable20	1.0NCUN4	300	30.0	0	5	20	0.06274	0.07100	0.0001643
Line1		587	20000.0	0	1	20	0.05003	0.21589	0.0000056

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

2-Winding Transformer Input Data

Transformer		Rating				Z Variation			% Tap Setting		Adjusted
ID	MVA	Prim. kV	Sec. kV	% Z	X/R	+ 5%	- 5%	% Tol.	Prim.	Sec.	% Z
T1	2.000	0.400	11.000	6.25	6.00	0	0	0	0	2.500	6.2500
T2	4.000	0.400	11.000	7.15	8.50	0	0	0	0	0	7.1500
T3	2.000	0.400	11.000	6.25	6.00	0	0	0	2.500	0	6.2500

Branch Connections

CKT/Branch		Connected Bus ID		% Impedance, Pos. Seq., 100 MVAb			
ID	Type	From Bus	To Bus	R	X	Z	Y
T1	2W XFMR	Bus3	Bus40	51.92	311.52	315.82	
T2	2W XFMR	Bus39	Bus40	19.98	169.85	171.02	
T3	2W XFMR	Bus43	Bus40	49.42	296.51	300.60	
Cable1	Cable	Bus1	Bus2	704.51	196.99	731.53	
Cable2	Cable	Bus4	Bus5	231.14	347.39	417.26	
Cable3	Cable	Bus6	Bus7	704.51	196.99	731.53	
Cable4	Cable	Bus8	Bus9	704.51	196.99	731.53	
Cable5	Cable	Bus10	Bus11	704.51	196.99	731.53	
Cable6	Cable	Bus12	Bus13	704.51	196.99	731.53	
Cable7	Cable	Bus14	Bus15	704.51	196.99	731.53	
Cable8	Cable	Bus16	Bus17	704.51	196.99	731.53	
Cable9	Cable	Bus18	Bus19	704.51	196.99	731.53	
Cable10	Cable	Bus20	Bus21	704.51	196.99	731.53	
Cable11	Cable	Bus22	Bus23	704.51	196.99	731.53	
Cable12	Cable	Bus24	Bus25	704.51	196.99	731.53	
Cable13	Cable	Bus26	Bus27	704.51	196.99	731.53	
Cable14	Cable	Bus28	Bus29	704.51	196.99	731.53	
Cable15	Cable	Bus30	Bus31	704.51	196.99	731.53	
Cable16	Cable	Bus32	Bus33	704.51	196.99	731.53	
Cable17	Cable	Bus34	Bus35	704.51	196.99	731.53	
Cable18	Cable	Bus36	Bus37	704.51	196.99	731.53	
Cable20	Cable	Bus39	Bus42	23.53	26.63	35.53	
Line1	Line	Bus40	Bus38	82.70	356.84	366.29	
CB1	Tie Breaker	Bus2	Bus3				
CB2	Tie Breaker	Bus5	Bus3				
CB3	Tie Breaker	Bus7	Bus3				
CB4	Tie Breaker	Bus9	Bus3				
CB5	Tie Breaker	Bus11	Bus3				
CB6	Tie Breaker	Bus13	Bus3				
CB7	Tie Breaker	Bus15	Bus3				
CB8	Tie Breaker	Bus17	Bus3				
CB9	Tie Breaker	Bus19	Bus3				
CB10	Tie Breaker	Bus21	Bus3				
CB11	Tie Breaker	Bus23	Bus3				
CB12	Tie Breaker	Bus25	Bus3				
CB13	Tie Breaker	Bus27	Bus3				
CB14	Tie Breaker	Bus29	Bus3				

CKT/Branch		Connected Bus ID		% Impedance, Pos. Seq., 100 MVAb			
ID	Type	From Bus	To Bus	R	X	Z	Y
CB15	Tie Breaker	Bus31	Bus3				
CB16	Tie Breaker	Bus33	Bus3				
CB17	Tie Breaker	Bus35	Bus3				
CB18	Tie Breaker	Bus37	Bus3				
Load_CB	Tie Breaker	Bus43	Bus44				

Power Grid Input Data

Power Grid		Connected Bus		Rating		% Impedance 100 MVA Base		
ID		ID		MVASC	kV	R	X"	R/X
GRID		Bus38		2.000	11.000	398.72607	4984.07617	0.08

Total Connected Power Grids (= 1): 2.000 MVA

Synchronous Generator Input Data

Synchronous Generator		Connected Bus		Rating				% Impedance in Machine Base					Excitation
ID	Type	ID		MVA	kV	RPM	% PF	R	Xd"			Xd, sat	Type
									Adj.	Tol.	R/X		
Gen1	Steam Turbo	Bus42		2.000	0.400	1500	80.00	1.000	19.00	0.0	0.05	155.00	Turbine 130%
Gen2	Steam Turbo	Bus41		2.000	0.400	1500	80.00	1.000	19.00	0.0	0.05	155.00	Turbine 130%

Total Connected Synchronous Generators (= 2) : 4.000 MVA

SHORT-CIRCUIT REPORT

3-Phase fault at bus: Bus1

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.857 kA Method C
Steady State = 11.453 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus1	Total	0.00	6.560	-9.455	1.4	11.508
Bus2	Bus1	55.13	6.560	-9.359	1.4	11.429
PVA1	Bus1	0.00	0.000	-0.096	37320540.0	0.096
Bus40	Bus3	66.56	5.055	-7.150	1.4	8.757
Bus36	Bus37	55.88	0.087	-0.127	1.5	0.154
Bus34	Bus35	55.88	0.087	-0.127	1.5	0.154
Bus32	Bus33	55.88	0.087	-0.127	1.5	0.154
Bus30	Bus31	55.88	0.087	-0.127	1.5	0.154
Bus28	Bus29	55.88	0.087	-0.127	1.5	0.154
Bus26	Bus27	55.88	0.087	-0.127	1.5	0.154
Bus24	Bus25	55.88	0.087	-0.127	1.5	0.154
Bus22	Bus23	55.88	0.087	-0.127	1.5	0.154
Bus20	Bus21	55.88	0.087	-0.127	1.5	0.154
Bus18	Bus19	55.88	0.087	-0.127	1.5	0.154
Bus16	Bus17	55.88	0.087	-0.127	1.5	0.154
Bus14	Bus15	55.88	0.087	-0.127	1.5	0.154
Bus12	Bus13	55.88	0.087	-0.127	1.5	0.154
Bus10	Bus11	55.88	0.087	-0.127	1.5	0.154
Bus8	Bus9	55.88	0.087	-0.127	1.5	0.154
Bus6	Bus7	55.88	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.57	0.114	-0.171	1.5	0.206
PVA18	Bus36	55.88	0.087	-0.127	1.5	0.154
PVA17	Bus34	55.88	0.087	-0.127	1.5	0.154
PVA16	Bus32	55.88	0.087	-0.127	1.5	0.154
PVA15	Bus30	55.88	0.087	-0.127	1.5	0.154
PVA14	Bus28	55.88	0.087	-0.127	1.5	0.154
PVA13	Bus26	55.88	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus1**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.857 kA Method C
Steady State = 11.453 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	55.88	0.087	-0.127	1.5	0.154
PVA11	Bus22	55.88	0.087	-0.127	1.5	0.154
PVA10	Bus20	55.88	0.087	-0.127	1.5	0.154
PVA9	Bus18	55.88	0.087	-0.127	1.5	0.154
PVA8	Bus16	55.88	0.087	-0.127	1.5	0.154
PVA7	Bus14	55.88	0.087	-0.127	1.5	0.154
PVA6	Bus12	55.88	0.087	-0.127	1.5	0.154
PVA5	Bus10	55.88	0.087	-0.127	1.5	0.154
PVA4	Bus8	55.88	0.087	-0.127	1.5	0.154
PVA3	Bus6	55.88	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.57	0.114	-0.171	1.5	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.453	11.658	2.176
0.02	11.446	11.451	0.348
0.03	11.431	11.432	0.056
0.04	11.410	11.410	0.009
0.05	11.383	11.383	0.001
0.06	11.381	11.381	0.000
0.07	11.378	11.378	0.000
0.08	11.374	11.374	0.000
0.09	11.370	11.370	0.000
0.10	11.364	11.364	0.000
0.15	11.353	11.353	0.000
0.20	11.336	11.336	0.000
0.25	11.314	11.314	0.000
0.30	11.314	11.314	0.000

3-Phase fault at bus: **Bus2**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus2	Total	0.00	1.342	-14.151	10.5	14.215
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus2**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
Bus3	Bus2	0.00	1.342	-14.054	10.5	14.118
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus2**

Nominal kV = 0.400

Voltage c Factor = 1.05

Peak Value = 33.477

Steady State = 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus3**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus3	Total	0.00	1.342	-14.151	10.5	14.215
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073

Man Fact GridDieselPV

(Cont.)

3-Phase fault at bus: **Bus3**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus3**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus4**

Nominal kV = 0.400

Voltage c Factor = 1.05 (Maximum If)

Peak Value = 23.854 kA Method C

Steady State = 11.729 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus4	Total	0.00	2.414	-11.563	4.8	11.812
Bus5	Bus4	32.24	2.414	-11.467	4.7	11.718
PVA2	Bus4	0.00	0.000	-0.096	37320540.0	0.096
Bus40	Bus3	51.52	2.414	-8.989	3.7	9.308
Bus36	Bus37	32.67	0.000	-0.143	999.9	0.143
Bus34	Bus35	32.67	0.000	-0.143	999.9	0.143
Bus32	Bus33	32.67	0.000	-0.143	999.9	0.143
Bus30	Bus31	32.67	0.000	-0.143	999.9	0.143
Bus28	Bus29	32.67	0.000	-0.143	999.9	0.143
Bus26	Bus27	32.67	0.000	-0.143	999.9	0.143
Bus24	Bus25	32.67	0.000	-0.143	999.9	0.143
Bus22	Bus23	32.67	0.000	-0.143	999.9	0.143
Bus20	Bus21	32.67	0.000	-0.143	999.9	0.143
Bus18	Bus19	32.67	0.000	-0.143	999.9	0.143
Bus16	Bus17	32.67	0.000	-0.143	999.9	0.143
Bus14	Bus15	32.67	0.000	-0.143	999.9	0.143
Bus12	Bus13	32.67	0.000	-0.143	999.9	0.143
Bus10	Bus11	32.67	0.000	-0.143	999.9	0.143
Bus8	Bus9	32.67	0.000	-0.143	999.9	0.143
Bus6	Bus7	32.67	0.000	-0.143	999.9	0.143
Bus1	Bus2	32.81	0.000	-0.191	999.9	0.191
PVA18	Bus36	32.67	0.000	-0.143	37320540.0	0.143
PVA17	Bus34	32.67	0.000	-0.143	37320540.0	0.143
PVA16	Bus32	32.67	0.000	-0.143	37320540.0	0.143
PVA15	Bus30	32.67	0.000	-0.143	37320540.0	0.143
PVA14	Bus28	32.67	0.000	-0.143	37320540.0	0.143
PVA13	Bus26	32.67	0.000	-0.143	37320540.0	0.143
PVA12	Bus24	32.67	0.000	-0.143	37320540.0	0.143
PVA11	Bus22	32.67	0.000	-0.143	37320540.0	0.143

(Cont.)

3-Phase fault at bus: **Bus4**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 23.854 kA Method C
Steady State = 11.729 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	32.67	0.000	-0.143	37320540.0	0.143
PVA9	Bus18	32.67	0.000	-0.143	37320540.0	0.143
PVA8	Bus16	32.67	0.000	-0.143	37320540.0	0.143
PVA7	Bus14	32.67	0.000	-0.143	37320540.0	0.143
PVA6	Bus12	32.67	0.000	-0.143	37320540.0	0.143
PVA5	Bus10	32.67	0.000	-0.143	37320540.0	0.143
PVA4	Bus8	32.67	0.000	-0.143	37320540.0	0.143
PVA3	Bus6	32.67	0.000	-0.143	37320540.0	0.143
PVA1	Bus1	32.81	0.000	-0.191	37320540.0	0.191

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.729	13.552	6.789
0.02	11.714	12.174	3.315
0.03	11.689	11.800	1.619
0.04	11.655	11.682	0.790
0.05	11.613	11.619	0.386
0.06	11.607	11.609	0.189
0.07	11.600	11.601	0.092
0.08	11.592	11.592	0.045
0.09	11.583	11.583	0.022
0.10	11.573	11.573	0.011
0.15	11.552	11.552	0.000
0.20	11.524	11.524	0.000
0.25	11.489	11.489	0.000
0.30	11.489	11.489	0.000

3-Phase fault at bus: **Bus5**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus5	Total	0.00	1.342	-14.151	10.5	14.215
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus5**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus3	Bus5	0.00	1.342	-14.054	10.5	14.118
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus5**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus6**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus6	Total	0.00	6.597	-9.442	1.4	11.519
Bus7	Bus6	55.28	6.597	-9.370	1.4	11.460
PVA3	Bus6	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus6**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus7**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus7	Total	0.00	1.342	-14.151	10.5	14.215
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus7**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus3	Bus7	0.00	1.342	-14.078	10.5	14.142
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus7**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus8**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus8	Total	0.00	6.597	-9.442	1.4	11.519
Bus9	Bus8	55.28	6.597	-9.370	1.4	11.460
PVA4	Bus8	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus8**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus9**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus9	Total	0.00	1.342	-14.151	10.5	14.215
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus9**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus9	0.00	1.342	-14.078	10.5	14.142
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus9**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus10**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus10	Total	0.00	6.597	-9.442	1.4	11.519
Bus11	Bus10	55.28	6.597	-9.370	1.4	11.460
PVA5	Bus10	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus10**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus11**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus11	Total	0.00	1.342	-14.151	10.5	14.215
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

Project:	ETAP	Page:	36
Location:	24.0.1N	Date:	13-09-2026
Contract:		SN:	DNDLYIR
Engineer:		Revision:	Base
Filename:	Man Fact GridDieselPV	Config.:	Normal
	Study Case: SC		

(Cont.)

3-Phase fault at bus: **Bus11**

Nominal kV	=	0.400	
Voltage c Factor	=	1.05	(Maximum If)
Peak Value	=	33.477	kA Method C
Steady State	=	13.917	kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus11	0.00	1.342	-14.078	10.5	14.142
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus11**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus12**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus12	Total	0.00	6.597	-9.442	1.4	11.519
Bus13	Bus12	55.28	6.597	-9.370	1.4	11.460
PVA6	Bus12	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus12**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus13**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus13	Total	0.00	1.342	-14.151	10.5	14.215
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

Man Fact GridDieselPV

(Cont.)

3-Phase fault at bus: **Bus13**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus13	0.00	1.342	-14.078	10.5	14.142
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus13**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus14**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus14	Total	0.00	6.597	-9.442	1.4	11.519
Bus15	Bus14	55.28	6.597	-9.370	1.4	11.460
PVA7	Bus14	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus14**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus15**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus15	Total	0.00	1.342	-14.151	10.5	14.215
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

Man Fact GridDieselPV

(Cont.)

3-Phase fault at bus: **Bus15**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus15	0.00	1.342	-14.078	10.5	14.142
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus15**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus16**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus16	Total	0.00	6.597	-9.442	1.4	11.519
Bus17	Bus16	55.28	6.597	-9.370	1.4	11.460
PVA8	Bus16	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus16**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus17**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus17	Total	0.00	1.342	-14.151	10.5	14.215
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

Man Fact GridDieselPV

(Cont.)

3-Phase fault at bus: **Bus17**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus17	0.00	1.342	-14.078	10.5	14.142
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus17**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus18**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus18	Total	0.00	6.597	-9.442	1.4	11.519
Bus19	Bus18	55.28	6.597	-9.370	1.4	11.460
PVA9	Bus18	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus18**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus19**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus19	Total	0.00	1.342	-14.151	10.5	14.215
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus19**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus19	0.00	1.342	-14.078	10.5	14.142
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus19**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus20**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus20	Total	0.00	6.597	-9.442	1.4	11.519
Bus21	Bus20	55.28	6.597	-9.370	1.4	11.460
PVA10	Bus20	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus20**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus21**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus21	Total	0.00	1.342	-14.151	10.5	14.215
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA10	Bus20	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus21**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus21	0.00	1.342	-14.078	10.5	14.142
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus21**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus22**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus22	Total	0.00	6.597	-9.442	1.4	11.519
Bus23	Bus22	55.28	6.597	-9.370	1.4	11.460
PVA11	Bus22	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus22**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus23**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus23	Total	0.00	1.342	-14.151	10.5	14.215
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA11	Bus22	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus23**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus23	0.00	1.342	-14.078	10.5	14.142
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus23**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus24**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus24	Total	0.00	6.597	-9.442	1.4	11.519
Bus25	Bus24	55.28	6.597	-9.370	1.4	11.460
PVA12	Bus24	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus24**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus25**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus25	Total	0.00	1.342	-14.151	10.5	14.215
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA12	Bus24	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071 9.1		0.072
Bus39	Bus40	39.97	0.040	-0.382 9.6		0.384
Bus43	Bus40	28.14	0.000	0.000 999.9		0.000
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus25**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus25	0.00	1.342	-14.078	10.5	14.142
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus25**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus26**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus26	Total	0.00	6.597	-9.442	1.4	11.519
Bus27	Bus26	55.28	6.597	-9.370	1.4	11.460
PVA13	Bus26	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus26**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus27**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus27	Total	0.00	1.342	-14.151	10.5	14.215
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071 9.1		0.072
Bus39	Bus40	39.97	0.040	-0.382 9.6		0.384
Bus43	Bus40	28.14	0.000	0.000 999.9		0.000
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA12	Bus24	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus27**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus27	0.00	1.342	-14.078	10.5	14.142
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus27**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus28**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus28	Total	0.00	6.597	-9.442	1.4	11.519
Bus29	Bus28	55.28	6.597	-9.370	1.4	11.460
PVA14	Bus28	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus28**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus29**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus29	Total	0.00	1.342	-14.151	10.5	14.215
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus29**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus29	0.00	1.342	-14.078	10.5	14.142
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus29**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus30**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus30	Total	0.00	6.597	-9.442	1.4	11.519
Bus31	Bus30	55.28	6.597	-9.370	1.4	11.460
PVA15	Bus30	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus30**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus31**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus31	Total	0.00	1.342	-14.151	10.5	14.215
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071 9.1		0.072
Bus39	Bus40	39.97	0.040	-0.382 9.6		0.384
Bus43	Bus40	28.14	0.000	0.000 999.9		0.000
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073
PVA12	Bus24	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus31**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus31	0.00	1.342	-14.078	10.5	14.142
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus31**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus32**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus32	Total	0.00	6.597	-9.442	1.4	11.519
Bus33	Bus32	55.28	6.597	-9.370	1.4	11.460
PVA16	Bus32	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

Project:

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Location:

24.0.1N

Date: 13-09-2026

Contract:

SN: DNDLYIR

Engineer:

Study Case: SC

Revision: Base

Filename: Man Fact GridDieselPV

Config.: Normal

(Cont.)

3-Phase fault at bus: **Bus32**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus33**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus33	Total	0.00	1.342	-14.151	10.5	14.215
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073

(Cont.)

3-Phase fault at bus: **Bus33**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus33	0.00	1.342	-14.078	10.5	14.142
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus33**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus34**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus34	Total	0.00	6.597	-9.442	1.4	11.519
Bus35	Bus34	55.28	6.597	-9.370	1.4	11.460
PVA17	Bus34	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus36	Bus37	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA18	Bus36	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus34**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus35**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus35	Total	0.00	1.342	-14.151	10.5	14.215
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA17	Bus34	0.35	0.000	-0.073	37320540.0	0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA18	Bus36	0.35	0.000	-0.073	37320540.0	0.073
PVA16	Bus32	0.35	0.000	-0.073	37320540.0	0.073
PVA15	Bus30	0.35	0.000	-0.073	37320540.0	0.073
PVA14	Bus28	0.35	0.000	-0.073	37320540.0	0.073
PVA13	Bus26	0.35	0.000	-0.073	37320540.0	0.073
PVA12	Bus24	0.35	0.000	-0.073	37320540.0	0.073

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Location:	24.0.1N	Date:	13-09-2026
Contract:		SN:	DNDLYIR
Engineer:		Revision:	Base
Filename:	Man Fact GridDieselPV	Config.:	Normal
	Study Case: SC		

(Cont.)

3-Phase fault at bus: **Bus35**

Nominal kV	=	0.400	
Voltage c Factor	=	1.05	(Maximum If)
Peak Value	=	33.477	kA Method C
Steady State	=	13.917	kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus35	0.00	1.342	-14.078	10.5	14.142
Bus37	Bus3	0.00	0.000	-0.073	913934.0	0.073

(Cont.)

3-Phase fault at bus: **Bus35**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus36**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus36	Total	0.00	6.597	-9.442	1.4	11.519
Bus37	Bus36	55.28	6.597	-9.370	1.4	11.460
PVA18	Bus36	0.00	0.000	-0.072	37320540.0	0.072
Bus40	Bus3	66.70	5.053	-7.127	1.4	8.736
Bus34	Bus35	56.02	0.087	-0.127	1.5	0.154
Bus32	Bus33	56.02	0.087	-0.127	1.5	0.154
Bus30	Bus31	56.02	0.087	-0.127	1.5	0.154
Bus28	Bus29	56.02	0.087	-0.127	1.5	0.154
Bus26	Bus27	56.02	0.087	-0.127	1.5	0.154
Bus24	Bus25	56.02	0.087	-0.127	1.5	0.154
Bus22	Bus23	56.02	0.087	-0.127	1.5	0.154
Bus20	Bus21	56.02	0.087	-0.127	1.5	0.154
Bus18	Bus19	56.02	0.087	-0.127	1.5	0.154
Bus16	Bus17	56.02	0.087	-0.127	1.5	0.154
Bus14	Bus15	56.02	0.087	-0.127	1.5	0.154
Bus12	Bus13	56.02	0.087	-0.127	1.5	0.154
Bus10	Bus11	56.02	0.087	-0.127	1.5	0.154
Bus8	Bus9	56.02	0.087	-0.127	1.5	0.154
Bus6	Bus7	56.02	0.087	-0.127	1.5	0.154
Bus4	Bus5	55.72	0.115	-0.171	1.5	0.206
Bus1	Bus2	56.27	0.118	-0.168	1.4	0.206
PVA17	Bus34	56.02	0.087	-0.127	1.5	0.154
PVA16	Bus32	56.02	0.087	-0.127	1.5	0.154
PVA15	Bus30	56.02	0.087	-0.127	1.5	0.154
PVA14	Bus28	56.02	0.087	-0.127	1.5	0.154
PVA13	Bus26	56.02	0.087	-0.127	1.5	0.154
PVA12	Bus24	56.02	0.087	-0.127	1.5	0.154
PVA11	Bus22	56.02	0.087	-0.127	1.5	0.154
PVA10	Bus20	56.02	0.087	-0.127	1.5	0.154

(Cont.)

3-Phase fault at bus: **Bus36**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 18.871 kA Method C
Steady State = 11.465 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA9	Bus18	56.02	0.087	-0.127	1.5	0.154
PVA8	Bus16	56.02	0.087	-0.127	1.5	0.154
PVA7	Bus14	56.02	0.087	-0.127	1.5	0.154
PVA6	Bus12	56.02	0.087	-0.127	1.5	0.154
PVA5	Bus10	56.02	0.087	-0.127	1.5	0.154
PVA4	Bus8	56.02	0.087	-0.127	1.5	0.154
PVA3	Bus6	56.02	0.087	-0.127	1.5	0.154
PVA2	Bus4	55.72	0.115	-0.171	1.5	0.206
PVA1	Bus1	56.27	0.118	-0.168	1.4	0.206

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	11.465	11.669	2.176
0.02	11.458	11.463	0.348
0.03	11.443	11.443	0.056
0.04	11.422	11.422	0.009
0.05	11.395	11.395	0.001
0.06	11.393	11.393	0.000
0.07	11.391	11.391	0.000
0.08	11.387	11.387	0.000
0.09	11.383	11.383	0.000
0.10	11.377	11.377	0.000
0.15	11.366	11.366	0.000
0.20	11.349	11.349	0.000
0.25	11.327	11.327	0.000
0.30	11.327	11.327	0.000

3-Phase fault at bus: **Bus37**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus37	Total	0.00	1.342	-14.151	10.5	14.215
Bus36	Bus37	0.35	0.000	-0.073	999.9	0.073
Bus40	Bus3	27.45	1.342	-12.790	9.5	12.860
Bus34	Bus35	0.35	0.000	-0.073	999.9	0.073
Bus32	Bus33	0.35	0.000	-0.073	999.9	0.073
Bus30	Bus31	0.35	0.000	-0.073	999.9	0.073
Bus28	Bus29	0.35	0.000	-0.073	999.9	0.073
Bus26	Bus27	0.35	0.000	-0.073	999.9	0.073
Bus24	Bus25	0.35	0.000	-0.073	999.9	0.073
Bus22	Bus23	0.35	0.000	-0.073	999.9	0.073
Bus20	Bus21	0.35	0.000	-0.073	999.9	0.073
Bus18	Bus19	0.35	0.000	-0.073	999.9	0.073
Bus16	Bus17	0.35	0.000	-0.073	999.9	0.073
Bus14	Bus15	0.35	0.000	-0.073	999.9	0.073
Bus12	Bus13	0.35	0.000	-0.073	999.9	0.073
Bus10	Bus11	0.35	0.000	-0.073	999.9	0.073
Bus8	Bus9	0.35	0.000	-0.073	999.9	0.073
Bus6	Bus7	0.35	0.000	-0.073	999.9	0.073
Bus4	Bus5	0.27	0.000	-0.097	999.9	0.097
Bus1	Bus2	0.47	0.000	-0.098	999.9	0.098
PVA18	Bus36	0.35	0.000	-0.073 37320540.0		0.073
Bus38	Bus40	32.46	0.008	-0.071	9.1	0.072
Bus39	Bus40	39.97	0.040	-0.382	9.6	0.384
Bus43	Bus40	28.14	0.000	0.000	999.9	0.000
PVA17	Bus34	0.35	0.000	-0.073 37320540.0		0.073
PVA16	Bus32	0.35	0.000	-0.073 37320540.0		0.073
PVA15	Bus30	0.35	0.000	-0.073 37320540.0		0.073
PVA14	Bus28	0.35	0.000	-0.073 37320540.0		0.073
PVA13	Bus26	0.35	0.000	-0.073 37320540.0		0.073
PVA12	Bus24	0.35	0.000	-0.073 37320540.0		0.073

(Cont.)

3-Phase fault at bus: **Bus37**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 33.477 kA Method C
Steady State = 13.917 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA11	Bus22	0.35	0.000	-0.073	37320540.0	0.073
PVA10	Bus20	0.35	0.000	-0.073	37320540.0	0.073
PVA9	Bus18	0.35	0.000	-0.073	37320540.0	0.073
PVA8	Bus16	0.35	0.000	-0.073	37320540.0	0.073
PVA7	Bus14	0.35	0.000	-0.073	37320540.0	0.073
PVA6	Bus12	0.35	0.000	-0.073	37320540.0	0.073
PVA5	Bus10	0.35	0.000	-0.073	37320540.0	0.073
PVA4	Bus8	0.35	0.000	-0.073	37320540.0	0.073
PVA3	Bus6	0.35	0.000	-0.073	37320540.0	0.073
PVA2	Bus4	0.27	0.000	-0.097	37320540.0	0.097
PVA1	Bus1	0.47	0.000	-0.098	37320540.0	0.098
Bus2	Bus3	0.00	0.000	-0.098	1222355.1	0.098
Bus5	Bus3	0.00	0.000	-0.097	1219625.5	0.097
Bus7	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus9	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus11	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus13	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus15	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus17	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus19	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus21	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus23	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus25	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus27	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus29	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus31	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus33	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus35	Bus3	0.00	0.000	-0.073	913934.0	0.073
Bus3	Bus37	0.00	1.342	-14.078	10.5	14.142

(Cont.)

3-Phase fault at bus: **Bus37**

Nominal kV

Voltage c Factor

Peak Value

Steady State

= 0.400

= 1.05

= 33.477

= 13.917

(Maximum If)

kA Method C

kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.917	19.099	13.081
0.02	13.821	16.720	9.409
0.03	13.706	15.286	6.768
0.04	13.573	14.419	4.868
0.05	13.423	13.872	3.502
0.06	13.379	13.614	2.519
0.07	13.332	13.455	1.812
0.08	13.284	13.348	1.304
0.09	13.233	13.266	0.938
0.10	13.179	13.197	0.675
0.15	13.083	13.083	0.130
0.20	12.974	12.974	0.025
0.25	12.854	12.854	0.005
0.30	12.854	12.854	0.001

3-Phase fault at bus: **Bus38**

Nominal kV = 11.000
Voltage c Factor = 1.10 (Maximum If)
Peak Value = 1.261 kA Method C
Steady State = 0.368 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus38	Total	0.00	0.086	-0.568	6.6	0.575
Bus40	Bus38	32.81	0.078	-0.464	5.9	0.470
GRID	Bus38	110.00	0.008	-0.105	12.5	0.105
Bus3	Bus40	37.85	0.038	-0.096	2.5	0.103
Bus39	Bus40	44.86	0.040	-0.368	9.2	0.370
Bus43	Bus40	33.63	0.000	0.000	999.9	0.000

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	0.556	0.748	0.500
0.02	0.550	0.654	0.354
0.03	0.543	0.598	0.251
0.04	0.534	0.564	0.179
0.05	0.525	0.540	0.128
0.06	0.522	0.530	0.092
0.07	0.519	0.524	0.066
0.08	0.516	0.518	0.048
0.09	0.513	0.514	0.034
0.10	0.510	0.510	0.025
0.15	0.504	0.504	0.005
0.20	0.497	0.497	0.001
0.25	0.489	0.489	0.000
0.30	0.489	0.489	0.000

3-Phase fault at bus: **Bus39**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 45.769 kA Method C
Steady State = 9.640 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus39	Total	0.00	1.479	-20.443	13.8	20.496
Bus42	Bus39	4.03	1.252	-16.341	13.0	16.389
Bus40	Bus39	4.87	0.227	-4.102	18.1	4.108
Gen1	Bus42	105.00	1.252	-16.341	13.0	16.389
Bus38	Bus40	11.12	0.008	-0.089	10.8	0.090
Bus3	Bus40	8.25	0.000	-0.060	999.9	0.060
Bus43	Bus40	4.99	0.000	0.000	999.9	0.000

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	19.298	28.443	20.895
0.02	18.848	24.943	16.338
0.03	18.356	22.365	12.776
0.04	17.827	20.437	9.993
0.05	17.266	18.953	7.818
0.06	17.059	18.123	6.117
0.07	16.848	17.515	4.787
0.08	16.632	17.049	3.747
0.09	16.412	16.672	2.933
0.10	16.187	16.349	2.297
0.15	15.828	15.842	0.677
0.20	15.453	15.454	0.200
0.25	15.067	15.067	0.059
0.30	15.067	15.067	0.018

3-Phase fault at bus: **Bus40**

Nominal kV = 11.000
Voltage c Factor = 1.10 (Maximum If)
Peak Value = 1.529 kA Method C
Steady State = 0.349 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus40	Total	0.00	0.052	-0.676	12.9	0.678
Bus38	Bus40	6.87	0.009	-0.098	11.2	0.098
Bus3	Bus40	3.08	0.000	-0.052	999.9	0.052
Bus39	Bus40	17.17	0.044	-0.525	12.0	0.527
Bus43	Bus40	0.00	0.000	0.000	999.9	0.000
GRID	Bus38	110.00	0.009	-0.098	11.2	0.098
Bus36	Bus37	3.26	0.000	-0.079	999.9	0.079
Bus34	Bus35	3.26	0.000	-0.079	999.9	0.079
Bus32	Bus33	3.26	0.000	-0.079	999.9	0.079
Bus30	Bus31	3.26	0.000	-0.079	999.9	0.079
Bus28	Bus29	3.26	0.000	-0.079	999.9	0.079
Bus26	Bus27	3.26	0.000	-0.079	999.9	0.079
Bus24	Bus25	3.26	0.000	-0.079	999.9	0.079
Bus22	Bus23	3.26	0.000	-0.079	999.9	0.079
Bus20	Bus21	3.26	0.000	-0.079	999.9	0.079
Bus18	Bus19	3.26	0.000	-0.079	999.9	0.079
Bus16	Bus17	3.26	0.000	-0.079	999.9	0.079
Bus14	Bus15	3.26	0.000	-0.079	999.9	0.079
Bus12	Bus13	3.26	0.000	-0.079	999.9	0.079
Bus10	Bus11	3.26	0.000	-0.079	999.9	0.079
Bus8	Bus9	3.26	0.000	-0.079	999.9	0.079
Bus6	Bus7	3.26	0.000	-0.079	999.9	0.079
Bus4	Bus5	3.35	0.000	-0.106	999.9	0.106
Bus1	Bus2	3.33	0.000	-0.106	999.9	0.106
Bus42	Bus39	20.20	1.199	-14.441	12.0	14.491
PVA18	Bus36	3.26	0.000	-0.079	37320540.0	0.079
PVA17	Bus34	3.26	0.000	-0.079	37320540.0	0.079
PVA16	Bus32	3.26	0.000	-0.079	37320540.0	0.079
PVA15	Bus30	3.26	0.000	-0.079	37320540.0	0.079

(Cont.)

3-Phase fault at bus: **Bus40**

Nominal kV = 11.000
Voltage c Factor = 1.10 (Maximum If)
Peak Value = 1.529 kA Method C
Steady State = 0.349 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
PVA14	Bus28	3.26	0.000	-0.079	37320540.0	0.079
PVA13	Bus26	3.26	0.000	-0.079	37320540.0	0.079
PVA12	Bus24	3.26	0.000	-0.079	37320540.0	0.079
PVA11	Bus22	3.26	0.000	-0.079	37320540.0	0.079
PVA10	Bus20	3.26	0.000	-0.079	37320540.0	0.079
PVA9	Bus18	3.26	0.000	-0.079	37320540.0	0.079
PVA8	Bus16	3.26	0.000	-0.079	37320540.0	0.079
PVA7	Bus14	3.26	0.000	-0.079	37320540.0	0.079
PVA6	Bus12	3.26	0.000	-0.079	37320540.0	0.079
PVA5	Bus10	3.26	0.000	-0.079	37320540.0	0.079
PVA4	Bus8	3.26	0.000	-0.079	37320540.0	0.079
PVA3	Bus6	3.26	0.000	-0.079	37320540.0	0.079
PVA2	Bus4	3.35	0.000	-0.106	37320540.0	0.106
PVA1	Bus1	3.33	0.000	-0.106	37320540.0	0.106

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

<u>TD (S)</u>	<u>Ib sym</u>	<u>Ib asym</u>	<u>Idc</u>
0.01	0.643	0.936	0.679
0.02	0.631	0.819	0.522
0.03	0.616	0.735	0.401
0.04	0.601	0.675	0.308
0.05	0.585	0.631	0.237
0.06	0.579	0.607	0.182
0.07	0.573	0.589	0.140
0.08	0.566	0.577	0.107
0.09	0.560	0.566	0.082
0.10	0.554	0.557	0.063
0.15	0.543	0.543	0.017
0.20	0.531	0.531	0.005
0.25	0.519	0.519	0.001

Project: ETAP
Location: 24.0.1N
Contract:
Engineer:
Filename: Man Fact GridDieselPV
Study Case: SC

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Revision: Base
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3-Phase fault at bus: Bus40

Nominal kV = 11.000
Voltage c Factor = 1.10 (Maximum If)
Peak Value = 1.529 kA Method C
Steady State = 0.349 kA rms

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.30	0.519	0.519	0.000

3-Phase fault at bus: **Bus41**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 39.318 kA Method C
Steady State = 5.553 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus41	Total	0.00	0.888	-16.879	19.0	16.902
Gen2	Bus41	105.00	0.888	-16.879	19.0	16.902

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	15.635	25.591	20.260
0.02	15.157	22.905	17.173
0.03	14.636	20.642	14.556
0.04	14.079	18.720	12.337
0.05	13.489	17.067	10.457
0.06	13.270	15.958	8.863
0.07	13.046	15.054	7.513
0.08	12.818	14.312	6.368
0.09	12.585	13.694	5.397
0.10	12.348	13.168	4.575
0.15	11.973	12.139	2.001
0.20	11.583	11.616	0.876
0.25	11.182	11.189	0.383
0.30	11.182	11.184	0.168

3-Phase fault at bus: **Bus42**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 47.840 kA Method C
Steady State = 9.680 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus42	Total	0.00	1.128	-20.998	18.6	21.028
Bus39	Bus42	1.02	0.240	-4.119	17.2	4.126
Gen1	Bus42	105.00	0.888	-16.879	19.0	16.902
Bus40	Bus39	5.75	0.240	-4.119	17.2	4.126

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	19.761	30.244	22.895
0.02	19.283	27.167	19.136
0.03	18.763	24.671	16.019
0.04	18.205	22.622	13.428
0.05	17.615	20.912	11.270
0.06	17.396	19.806	9.469
0.07	17.172	18.929	7.964
0.08	16.944	18.222	6.704
0.09	16.711	17.640	5.648
0.10	16.475	17.149	4.762
0.15	16.099	16.229	2.044
0.20	15.709	15.734	0.885
0.25	15.309	15.314	0.385
0.30	15.309	15.310	0.168

3-Phase fault at bus: **Bus43**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 31.752 kA Method C
Steady State = 13.545 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus43	Total	0.00	1.660	-13.659	8.2	13.760
Bus40	Bus43	29.37	1.660	-13.659	8.2	13.760
Bus38	Bus40	33.93	0.007	-0.065	9.3	0.065
Bus3	Bus40	34.37	0.020	-0.096	4.8	0.098
Bus39	Bus40	40.78	0.035	-0.348	9.9	0.350
Bus43	Bus44	0.00	0.000	0.000	9999.0	0.000

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.545	18.114	12.026
0.02	13.481	16.029	8.671
0.03	13.401	14.788	6.252
0.04	13.306	14.049	4.508
0.05	13.197	13.592	3.251
0.06	13.168	13.375	2.344
0.07	13.137	13.246	1.690
0.08	13.105	13.161	1.219
0.09	13.070	13.099	0.879
0.10	13.033	13.049	0.634
0.15	12.965	12.966	0.124
0.20	12.886	12.886	0.024
0.25	12.797	12.797	0.005
0.30	12.797	12.797	0.001

3-Phase fault at bus: **Bus44**

Nominal kV = 0.400
Voltage c Factor = 1.05 (Maximum If)
Peak Value = 31.752 kA Method C
Steady State = 13.545 kA rms

Contribution		Voltage & Initial Symmetrical Current (rms)				
From Bus ID	To Bus ID	% V From Bus	kA Real	kA Imaginary	X/R Ratio	kA Magnitude
Bus44	Total	0.00	1.660	-13.659	8.2	13.760
Bus40	Bus43	29.37	1.660	-13.659	8.2	13.760
Bus38	Bus40	33.93	0.007	-0.065	9.3	0.065
Bus3	Bus40	34.37	0.020	-0.096	4.8	0.098
Bus39	Bus40	40.78	0.035	-0.348	9.9	0.350
Bus43	Bus44	0.00	1.660	-13.659	8.2	13.760

Breaking and DC Fault Current (kA)

Based on Total Bus Fault Current

TD (S)	Ib sym	Ib asym	Idc
0.01	13.545	18.114	12.026
0.02	13.481	16.029	8.671
0.03	13.401	14.788	6.252
0.04	13.306	14.049	4.508
0.05	13.197	13.592	3.251
0.06	13.168	13.375	2.344
0.07	13.137	13.246	1.690
0.08	13.105	13.161	1.219
0.09	13.070	13.099	0.879
0.10	13.033	13.049	0.634
0.15	12.965	12.966	0.124
0.20	12.886	12.886	0.024
0.25	12.797	12.797	0.005
0.30	12.797	12.797	0.001

Short-Circuit Summary Report

3-Phase Fault Currents

Bus		Device		Device Capacity (kA)				Short-Circuit Current (kA)					
				Making									
ID	kV	ID	Type	Peak	Ib sym	Ib asym	Idc	I"k	ip	Ib sym	Ib asym	Idc	Ik
Bus1	0.400	Bus1	Bus					11.508	18.857				11.453
Bus2	0.400	Bus2	Bus					14.215	33.477				13.917
Bus3	0.400	Bus3	Bus					14.215	33.477				13.917
Bus4	0.400	Bus4	Bus					11.812	23.854				11.729
Bus5	0.400	Bus5	Bus					14.215	33.477				13.917
Bus6	0.400	Bus6	Bus					11.519	18.871				11.465
Bus7	0.400	Bus7	Bus					14.215	33.477				13.917
Bus8	0.400	Bus8	Bus					11.519	18.871				11.465
Bus9	0.400	Bus9	Bus					14.215	33.477				13.917
Bus10	0.400	Bus10	Bus					11.519	18.871				11.465
Bus11	0.400	Bus11	Bus					14.215	33.477				13.917
Bus12	0.400	Bus12	Bus					11.519	18.871				11.465
Bus13	0.400	Bus13	Bus					14.215	33.477				13.917
Bus14	0.400	Bus14	Bus					11.519	18.871				11.465
Bus15	0.400	Bus15	Bus					14.215	33.477				13.917
Bus16	0.400	Bus16	Bus					11.519	18.871				11.465
Bus17	0.400	Bus17	Bus					14.215	33.477				13.917
Bus18	0.400	Bus18	Bus					11.519	18.871				11.465
Bus19	0.400	Bus19	Bus					14.215	33.477				13.917
Bus20	0.400	Bus20	Bus					11.519	18.871				11.465
Bus21	0.400	Bus21	Bus					14.215	33.477				13.917
Bus22	0.400	Bus22	Bus					11.519	18.871				11.465
Bus23	0.400	Bus23	Bus					14.215	33.477				13.917
Bus24	0.400	Bus24	Bus					11.519	18.871				11.465
Bus25	0.400	Bus25	Bus					14.215	33.477				13.917
Bus26	0.400	Bus26	Bus					11.519	18.871				11.465
Bus27	0.400	Bus27	Bus					14.215	33.477				13.917
Bus28	0.400	Bus28	Bus					11.519	18.871				11.465
Bus29	0.400	Bus29	Bus					14.215	33.477				13.917
Bus30	0.400	Bus30	Bus					11.519	18.871				11.465
Bus31	0.400	Bus31	Bus					14.215	33.477				13.917
Bus32	0.400	Bus32	Bus					11.519	18.871				11.465
Bus33	0.400	Bus33	Bus					14.215	33.477				13.917
Bus34	0.400	Bus34	Bus					11.519	18.871				11.465
Bus35	0.400	Bus35	Bus					14.215	33.477				13.917

3-Phase Fault Currents

Bus		Device		Device Capacity (kA)				Short-Circuit Current (kA)					
				Making									
ID	kV	ID	Type	Peak	Ib sym	Ib asym	Idc	I"k	ip	Ib sym	Ib asym	Idc	Ik
Bus36	0.400	Bus36	Bus					11.519	18.871				11.465
Bus37	0.400	Bus37	Bus					14.215	33.477				13.917
Bus38	11.000	Bus38	Bus					0.575	1.261				0.368
Bus39	0.400	Bus39	Bus					20.496	45.769				9.640
Bus40	11.000	Bus40	Bus					0.678	1.529				0.349
Bus41	0.400	Bus41	Bus					16.902	39.318				5.553
Bus42	0.400	Bus42	Bus					21.028	47.840				9.680
Bus43	0.400	Bus43	Bus					13.760	31.752				13.545
Bus44	0.400	Bus44	Bus					13.760	31.752				13.545

ip is calculated using method C
Ib does not include decay of non-terminal faulted induction motors
Ik is the maximum steady state fault current
Idc is based on X/R from Method C and Ib as specified above

LV CB duty determined based on service rating.
Total through current is used for device duty.

* Indicates a device with calculated duty exceeding the device capability.
Indicates a device with calculated duty exceeding the device marginal limit . (95 % times device capability)

Project:

Location:

Contract:

Engineer:

Filename:

ETAP

24.0.1N

Study Case: SC

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SN: DNDLYIR

Revision: Base

Config.: Normal

Short-Circuit Summary Report

		Device Capacity			3-Phase Short-Circuit Duty Results		
Bus ID	Device ID	Ithr (kA)	Tkr (sec.)	Rated Thermal Energy (MJ)	Ith (kA)	Tkr (sec.)	Thermal Energy (MJ)