Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.2443	-0.0511	0.0000	0.0000	SL	2	Lake	0.3993	0.0148
									4	South	0.8450	-0.0659
2	Lake	1.0239	-4.8836	-0.0000	0.0000	0.4500	0.1500	PQ	1	North	-0.3878	-0.0347
									3	Main	0.1847	-0.0496
									4	South	-0.2469	-0.0657
3	Main	1.0232	-5.2079	0.0000	0.0000	0.4000	0.0500	PQ	2	Lake	-0.1843	0.0297
									4	South	-0.2777	-0.0576
									5	Elm	0.0620	-0.0221
4	South	1.0470	-2.6516	0.4500	-0.0278	0.2000	-0.2000	PV	1	North	-0.8323	0.0375
									2	Lake	0.2505	0.0337
									3	Main	0.2822	0.0282
									5	Elm	0.5496	0.0729
5	Elm	1.0175	-6.0085	-0.0000	-0.0000	0.6000	0.1000	PQ	3	Main	-0.0617	-0.0291
									4	South	-0.5383	-0.0709
	Area Totals			1.6943	-0.0789	1.6500	0.1000					

Program Output 1 - Normal Operating Conditions

Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.2647	-0.1789	0.0000	0.0000	SL	4	South	1.2647	-0.1789
2	Lake	1.0089	-8.0035	-0.0000	-0.0000	0.4500	0.1500	PQ	3	Main	-0.0279	-0.0707
									4	South	-0.4221	-0.0793
3	Main	1.0110	-7.9905	0.0000	-0.0000	0.4000	0.0500	PQ	2	Lake	0.0279	0.0504
									4	South	-0.4184	-0.0695
									5	Elm	-0.0095	-0.0309
4	South	1.0470	-4.0708	0.4500	0.2182	0.2000	-0.2000	PV	1	North	-1.2358	0.1989
									2	Lake	0.4329	0.0692
									3	Main	0.4288	0.0584
									5	Elm	0.6242	0.0918
5	Elm	1.0130	-7.8861	-0.0000	0.0000	0.6000	0.1000	PQ	3	Main	0.0095	-0.0203
									4	South	-0.6095	-0.0797
	Area Totals			1.7147	0.0393	1.6500	0.1000					

Program Output 2 - Fault Removing Line 1-2

Bus		Volts	Angle	Generation		Load		Bus	To		Line Flow	
no.	Name	(p.u.)	(deg.)	(MW)	(MVAR)	(MW)	(MVAR)	type	Bus	Name	(MW)	(MVAR)
1	North	1.0600	0.0000	1.3525	-0.0499	0.0000	0.0000	SL	2	Lake	1.3525	-0.0499
2	Lake	1.0109	-17.7312	-0.0000	-0.0000	0.4500	0.1500	PQ	1	North	-1.2222	0.3871
									3	Main	0.6382	-0.2731
									4	South	0.1340	-0.2640
3	Main	1.0126	-18.9501	0.0000	0.0000	0.4000	0.0500	PQ	2	Lake	-0.6335	0.2666
									4	South	0.0234	-0.2211
									5	Elm	0.2101	-0.0955
4	South	1.0470	-19.8287	0.4500	0.3652	0.2000	-0.2000	PV	2	Lake	-0.1295	0.2352
									3	Main	-0.0211	0.1859
									5	Elm	0.4006	0.1441
5	Elm	1.0141	-22.0765	-0.0000	-0.0000	0.6000	0.1000	PQ	3	Main	-0.2062	0.0556
									4	South	-0.3938	-0.1556
		Area Totals		1.8025	0.3153	1.6500	0.1000					

Program Output 3 - Fault Removing Line 1-4

Bus		Volts	Angle	Generation		Load		Bus	To		Line Flow	
no.	Name	(p.u.)	(deg.)	(MW)	(MVAR)	(MW)	(MVAR)	type	Bus	Name	(MW)	(MVAR)
1	North	1.0600	0.0000	1.2476	-0.0638	0.0000	0.0000	SL	2	Lake	0.3271	0.0232
									4	South	0.9204	-0.0870
2	Lake	1.0261	-3.9227	-0.0000	-0.0000	0.4500	0.1500	PQ	1	North	-0.3193	-0.0542
									4	South	-0.1307	-0.0958
3	Main	1.0184	-6.7339	-0.0000	0.0000	0.4000	0.0500	PQ	4	South	-0.4004	-0.0359
									5	Elm	0.0004	-0.0141
4	South	1.0470	-2.9074	0.4500	0.0162	0.2000	-0.2000	PV	1	North	-0.9053	0.0658
									2	Lake	0.1320	0.0567
									3	Main	0.4097	0.0211
									5	Elm	0.6137	0.0726
5	Elm	1.0156	-6.6863	0.0000	0.0000	0.6000	0.1000	PQ	3	Main	-0.0004	-0.0376
									4	South	-0.5996	-0.0624
		Area Totals		1.6976	-0.0476	1.6500	0.1000					

Program Output 4 - Fault Removing Line 2-3

Bus Information									Line Flow			
Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.2508	0.0165	0.0000	0.0000	SL	2	Lake	0.4858	0.0596
									4	South	0.7651	-0.0431
2	Lake	1.0088	-5.8814	0.0000	0.0000	0.4500	0.1500	PQ	1	North	-0.4684	-0.0611
									3	Main	0.0184	-0.0889
3	Main	1.0110	-5.9567	-0.0000	-0.0000	0.4000	0.0500	PQ	2	Lake	-0.0184	0.0687
									4	South	-0.3874	-0.0823
									5	Elm	0.0058	-0.0364
4	South	1.0470	-2.3802	0.4500	-0.0299	0.2000	-0.2000	PV	1	North	-0.7546	0.0078
									3	Main	0.3965	0.0670
									5	Elm	0.6081	0.0953
5	Elm	1.0131	-6.0835	-0.0000	0.0000	0.6000	0.1000	PQ	3	Main	-0.0058	-0.0147
									4	South	-0.5942	-0.0853
	Area Totals			1.7008	-0.0134	1.6500	0.1000					

Program Output 5 - Fault Removing Line 2-4

Bus Information									Line Flow			
Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.2524	0.0069	0.0000	0.0000	SL	2	Lake	0.4786	0.0525
									4	South	0.7738	-0.0456
2	Lake	1.0108	-5.8079	0.0000	-0.0000	0.4500	0.1500	PQ	1	North	-0.4619	-0.0558
									3	Main	0.3834	-0.0048
									4	South	-0.3715	-0.0894
3	Main	1.0069	-6.4523	-0.0000	-0.0000	0.4000	0.0500	PQ	2	Lake	-0.3819	-0.0112
									5	Elm	-0.0181	-0.0388
4	South	1.0470	-2.4099	0.4500	-0.0152	0.2000	-0.2000	PV	1	North	-0.7631	0.0110
									2	Lake	0.3799	0.0722
									5	Elm	0.6333	0.1016
5	Elm	1.0116	-6.2685	-0.0000	0.0000	0.6000	0.1000	PQ	3	Main	0.0181	-0.0121
									4	South	-0.6181	-0.0879
	Area Totals			1.7024	-0.0084	1.6500	0.1000					

Program Output 6 - Fault Removing Line 3-4

Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.2453	-0.0526	0.0000	0.0000	SL	2	Lake	0.3857	0.0174
									4	South	0.8595	-0.0700
2	Lake	1.0240	-4.6997	-0.0000	-0.0000	0.4500	0.1500	PQ	1	North	-0.3750	-0.0395
									3	Main	0.1501	-0.0376
									4	South	-0.2251	-0.0730
3	Main	1.0234	-4.9607	0.0000	0.0000	0.4000	0.0500	PQ	2	Lake	-0.1499	0.0173
									4	South	-0.2501	-0.0673
4	South	1.0470	-2.7010	0.4500	0.0290	0.2000	-0.2000	PV	1	North	-0.8464	0.0429
									2	Lake	0.2281	0.0392
									3	Main	0.2539	0.0355
									5	Elm	0.6144	0.1113
5	Elm	1.0110	-6.4174	0.0000	0.0000	0.6000	0.1000	PQ	4	South	-0.6000	-0.1000
		Area Totals		1.6953	-0.0236	1.6500	0.1000					

Program Output 7 - Fault Removing Line 3-5

Bus no.	Name	Volts (p.u.)	Angle (deg.)	Generation (MW)	Generation (MVAR)	Load (MW)	Load (MVAR)	Bus type	To Bus	To Name	Line Flow (MW)	Line Flow (MVAR)
1	North	1.0600	0.0000	1.3011	0.0536	0.0000	0.0000	SL	2	Lake	0.5350	0.0971
									4	South	0.7662	-0.0434
2	Lake	0.9976	-6.4277	0.0000	0.0000	0.4500	0.1500	PQ	1	North	-0.5135	-0.0856
									3	Main	0.5096	0.0663
									4	South	-0.4461	-0.1307
3	Main	0.9903	-7.2702	0.0000	-0.0000	0.4000	0.0500	PQ	2	Lake	-0.5069	-0.0781
									4	South	-0.5289	-0.1345
									5	Elm	0.6358	0.1626
4	South	1.0470	-2.3839	0.4500	0.0820	0.2000	-0.2000	PV	1	North	-0.7557	0.0082
									2	Lake	0.4589	0.1271
									3	Main	0.5468	0.1467
5	Elm	0.9043	-16.1113	-0.0000	0.0000	0.6000	0.1000	PQ	3	Main	-0.6000	-0.1000
		Area Totals		1.7511	0.1357	1.6500	0.1000					

Program Output 8 - Fault Removing Line 4-5; Voltage at Bus 5 Moves Outside of Permissible Zone

Bus		Volts	Angle	Generation		Load		Bus	To		Line Flow	
no.	Name	(p.u.)	(deg.)	(MW)	(MVAR)	(MW)	(MVAR)	type	Bus	Name	(MW)	(MVAR)
1	North	1.0600	0.0000	1.2656	-0.1792	0.0000	0.0000	SL	4	South	1.2656	-0.1792
2	Lake	0.9936	-8.1077	0.0000	0.0000	0.4500	0.1500	PQ	4	South	-0.4500	-0.1500
3	Main	1.0184	-7.9002	0.0000	0.0000	0.4000	0.0500	PQ	4	South	-0.4004	-0.0359
									5	Elm	0.0004	-0.0141
4	South	1.0470	-4.0737	0.4500	0.2413	0.2000	-0.2000	PV	1	North	-1.2367	0.1992
									2	Lake	0.4633	0.1483
									3	Main	0.4097	0.0211
									5	Elm	0.6137	0.0726
5	Elm	1.0156	-7.8527	0.0000	-0.0000	0.6000	0.1000	PQ	3	Main	-0.0004	-0.0376
									4	South	-0.5996	-0.0624
		Area Totals		1.7156	0.0621	1.6500	0.1000					

Program Output 9 - Multiple Line Fault Removing Lines 1-2 and 2-3; Network Remains Stable

Bus		Volts	Angle	Generation		Load		Bus	To		Line Flow	
no.	Name	(p.u.)	(deg.)	(MW)	(MVAR)	(MW)	(MVAR)	type	Bus	Name	(MW)	(MVAR)
1	North	1.0600	0.0000	1.3020	-0.1884	0.0000	0.0000	SL	4	South	1.3020	-0.1884
2	Lake	0.9936	-8.2305	-0.0000	-0.0000	0.4500	0.1500	PQ	4	South	-0.4500	-0.1500
3	Main	0.9362	-16.5431	-0.0000	-0.0000	0.4000	0.0500	PQ	5	Elm	-0.4000	-0.0500
4	South	1.0470	-4.1966	0.4500	0.4092	0.2000	-0.2000	PV	1	North	-1.2714	0.2137
									2	Lake	0.4633	0.1483
									5	Elm	1.0581	0.2472
5	Elm	0.9827	-10.6939	0.0000	0.0000	0.6000	0.1000	PQ	3	Main	0.4147	0.0480
									4	South	-1.0147	-0.1480
		Area Totals		1.7520	0.2208	1.6500	0.1000					

Program Output 10 - Multiple Line Fault Removing Lines 1-2, 2-3, 3-4 Moves Bus 3 Voltage Outside of Permissible Range