

Branch

	ID	Bus From	Bus To	DBase ID	Type
1	L10	B5	B8	L10	Line
2	L20	B15	B16	L20	Line
3	L30	B25	B26	L30	Line
4	L11	B6	B7	L11	Line
5	L21	B16	B17	L21	Line
6	L31	B26	B27	L31	Line
7	L01	B1	B2	L1	Line
8	L12	B6	B11	L12	Line
9	L22	B16	B19	L22	Line
10	L32	B26	B28	L32	Line
11	L02	B1	B39	L2	Line
12	L13	B7	B8	L13	Line
13	L23	B16	B21	L23	Line
14	L33	B26	B29	L33	Line
15	L03	B2	B3	L3	Line
16	L14	B8	B9	L14	Line
17	L24	B16	B24	L24	Line
18	L34	B28	B29	L34	Line
19	L04	B2	B25	L4	Line
20	L25	B17	B18	L25	Line
21	L05	B3	B4	L5	Line
22	L16	B10	B11	L16	Line
23	L26	B17	B27	L26	Line
24	L06	B3	B18	L6	Line
25	L17	B10	B13	L17	Line
26	L27	B21	B22	L27	Line
27	L07	B4	B5	L7	Line
28	L18	B13	B14	L18	Line
29	L28	B22	B23	L28	Line
30	L08	B4	B14	L8	Line
31	L19	B14	B15	L19	Line
32	L29	B23	B24	L29	Line
33	L09	B5	B6	L9	Line

Branch

	kV Nominal	Length	P [MW]	Q [MVAR]	S [MVA]	P. Factor [%]	I [pu]	I angle [deg]
1	345.00	75.1000	36.24	288.85	291.11	12.4	3.399	-99.2
2	345.00	63.0000	26.64	-265.51	266.85	10.0	2.945	58.1
3	345.00	216.5000	-7.55	28.22	29.21	-25.9	0.290	-133.0
4	345.00	61.7000	234.99	304.00	384.23	61.2	4.449	-67.3
5	345.00	59.7000	256.67	-121.12	283.81	90.4	3.043	-1.3
6	345.00	98.5000	183.89	167.23	248.56	74.0	2.509	-70.0
7	345.00	275.5000	-609.31	130.50	623.13	-97.8	6.222	147.4
8	345.00	55.0000	-47.53	-221.67	226.71	-21.0	2.625	87.1
9	345.00	130.7000	-988.62	29.48	989.06	-100.0	10.605	155.2
10	345.00	317.7000	-140.98	-51.25	150.01	-94.0	1.514	132.3
11	345.00	167.6000	609.31	-130.50	623.13	97.8	6.222	-32.6
12	345.00	30.8000	-0.02	209.57	209.57	-0.0	2.527	-106.5
13	345.00	90.5000	90.61	-91.87	129.03	70.2	1.384	18.9
14	345.00	418.9000	-189.56	-54.47	197.23	-96.1	1.990	136.2
15	345.00	101.2000	-59.54	315.26	320.83	-18.6	3.246	-130.4
16	345.00	243.3000	-487.00	321.63	583.63	-83.4	7.138	-163.0
17	345.00	39.5000	338.24	-107.59	354.94	95.3	3.806	-8.9
18	345.00	101.2000	-347.86	-10.81	348.03	-100.0	3.462	154.3
19	345.00	57.6000	-314.64	30.00	316.07	-99.5	3.197	155.7
20	345.00	55.0000	157.66	11.97	158.11	99.7	1.678	-32.4
21	345.00	142.8000	-383.56	329.84	505.88	-75.8	5.386	-168.2
22	345.00	28.8000	76.12	251.94	263.18	28.9	2.934	-87.8
23	345.00	116.0000	98.38	-129.40	162.55	60.5	1.726	24.7
24	345.00	89.1000	0.54	-10.22	10.24	5.3	0.109	58.1
25	345.00	28.8000	570.63	71.27	575.07	99.2	6.410	-21.7
26	345.00	93.8000	-183.52	-186.73	261.82	-70.1	2.775	107.1
27	345.00	85.8000	-652.47	182.26	677.45	-96.3	7.765	172.7
28	345.00	67.7000	589.15	5.87	589.18	100.0	6.610	-16.9
29	345.00	64.3000	462.88	306.63	555.24	83.4	5.715	-59.4
30	345.00	86.5000	-234.95	-81.58	248.71	-94.5	2.851	138.0
31	345.00	145.4000	349.63	-105.86	365.31	95.7	4.121	-3.8
32	345.00	234.6000	-29.19	-13.51	32.17	-90.7	0.343	126.6
33	345.00	17.4000	-693.55	-174.07	715.06	-97.0	8.349	149.6

Branch

	P losses [MW]	Q losses [MVAR]	Ampacity (Norm.) [pu]	Loading %	Ampacity (Emer.) [pu]	Loading(Emer) %
1	0.96	3.07	5.976	56.9	8.963	37.9
2	0.74	-6.72	7.171	41.1	8.963	32.9
3	0.09	-50.29	5.976	4.8	8.963	3.2
4	1.21	10.43	5.976	74.5	8.963	49.6
5	0.63	-3.69	5.976	50.9	8.963	34.0
6	0.94	-12.99	5.976	42.0	8.963	28.0
7	13.91	94.23	5.976	104.1	8.963	69.4
8	0.46	-5.20	5.976	43.9	8.963	29.3
9	17.18	192.25	10.756	98.6	11.951	88.7
10	0.88	-68.05	5.976	25.3	8.963	16.9
11	3.79	17.28	5.976	104.1	8.963	69.4
12	0.26	-2.28	5.976	42.3	8.963	28.2
13	0.14	-20.13	5.976	23.2	8.963	15.4
14	2.09	-80.25	5.976	33.3	8.963	22.2
15	1.48	-6.76	5.976	54.3	8.963	36.2
16	12.00	166.90	5.976	119.4	8.963	79.6
17	0.43	2.55	5.976	63.7	8.963	42.5
18	1.68	-7.24	5.976	57.9	8.963	38.6
19	7.19	-5.72	5.976	53.5	8.963	35.7
20	0.20	-9.35	5.976	28.1	8.963	18.7
21	3.85	45.15	5.976	90.1	8.963	60.1
22	0.35	-2.01	5.976	49.1	8.963	32.7
23	0.33	-24.68	5.976	28.9	8.963	19.3
24	0.00	-18.90	5.976	1.8	8.963	1.2
25	1.64	11.86	5.976	107.3	8.963	71.5
26	0.58	-13.40	7.768	35.7	11.951	23.2
27	4.84	67.48	5.976	129.9	8.963	86.6
28	3.93	30.51	5.976	110.6	8.963	73.7
29	1.99	15.06	5.976	95.6	8.963	63.8
30	0.64	-0.35	5.976	47.7	8.963	31.8
31	2.99	6.65	5.976	69.0	8.963	46.0
32	0.02	-31.45	5.976	5.7	8.963	3.8
33	1.39	14.89	5.976	139.7	8.963	93.1