

Tabel Tegangan Pada Sisi Tegangan Menengah dan Saluran Tegangan Rendah
Sebelum Perbaikan

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Kapasitas Trafo (kVa)	Beban Trafo (kVa)	Posisi Tap
		GI-GD	GD-GD	TT	TR			
1	P927	0.12	0.12	19.994	0.367	100	67.07	3
2	P904	4.22	4.1	19.811	0.367	50	22.95	3
3	P113	8.47	4.25	19.622	0.364	100	42.53	3
4	P603	9.67	1.2	19.570	0.368	25	5.03	3
5	P114	10.42	0.75	19.538	0.358	100	64.18	3
6	P611	10.87	0.45	19.537	0.365	100	31.93	3
7	P603	10.97	0.1	19.537	0.367	25	4.77	3
8	P572	11.37	0.4	19.521	0.365	100	30.2	3
9	P081	12.37	1	19.480	0.354	100	77.16	3
10	P961	12.47	0.1	19.480	0.366	50	11.02	3
11	P759	12.67	0.2	19.473	0.366	25	4.6	3
12	P975	12.97	0.3	19.461	0.360	50	24.44	3
13	P122	13.07	0.1	19.457	0.380	250	117.5	4
14	P230	13.47	0.4	19.443	0.354	100	75.04	3
15	P861	14.02	0.55	19.442	0.355	100	72	3
16	P082	14.12	0.1	19.439	0.346	160	178.24	3
17	P421	14.67	0.55	19.439	0.357	100	62.64	3
18	P533	14.87	0.3	19.439	0.356	100	64.03	3
19	P942	14.97	0.1	19.439	0.366	100	14.77	3
20	P989	15.52	0.55	19.425	0.355	50	34	3
21	P814	16.32	0.8	19.404	0.353	50	38.5	3
22	P161	16.75	0.45	19.393	0.365	50	9.99	3
23	P260	17.5	0.75	19.374	0.361	50	17.52	3
24	P553	18.05	1.55	19.335	0.357	50	25.98	3
25	P155	18.65	0.55	19.322	0.351	160	124.43	3
26	P684	19.25	0.6	19.309	0.353	50	33.04	3
27	P799	19.4	0.15	19.306	0.362	50	13	3
28	P650	19.6	0.2	19.302	0.366	160	4.58	3
29	P761	22.95	3.35	19.233	0.362	50	7.64	3
30	P195	24.9	1.95	19.193	0.352	100	61.58	3
31	P156	25.45	0.55	19.182	0.349	100	72.89	3
32	P606	26.1	0.65	19.171	0.358	50	15.45	3
33	P590	28.3	2.2	19.133	0.360	25	4.27	3
34	P605	28.85	0.55	19.123	0.351	50	30.37	3
35	P288	29.1	0.25	19.119	0.370	100	62.69	4
36	P157	29.65	0.55	19.111	0.380	100	51.55	4
37	P513	29.85	0.2	19.108	0.347	50	37.36	3
38	P686	30.45	0.6	19.099	0.359	50	9.16	3
39	P158	31.05	0.6	19.091	0.371	100	55.65	4
40	P197	31.30	0.25	19.088	0.351	100	58.41	3
41	P856	35.75	4.45	19.083	0.362	50	1.37	3
42	P610	36.15	0.4	19.083	0.356	100	31.93	3
43	P768	36.3	0.15	19.083	0.354	50	21.7	3

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Kapasitas Trafo (kVa)	Beban Trafo (kVa)	Posisi Tap
		GI-GD	GD-GD	TT	TR			
44	P548	36.6	0.3	19.085	0.348	50	35.66	3
45	P928	37.35	0.75	19.072	0.351	50	27.7	3
46	P159	38.1	0.75	19.078	0.337	100	114.95	3
47	P502	38.85	0.75	19.067	0.355	100	36.69	3
48	P160	39.25	0.4	19.065	0.348	200	139.37	3
49	P380	39.6	0.35	19.064	0.346	100	77.73	3
50	P695	39.7	0.1	19.064	0.359	25	4.03	3
51	P975	40.35	0.65	19.063	0.352	50	24.44	3
52	P191	45.55	5.2	19.060	0.351	50	27.94	3



Tabel Tegangan Pada Sisi Tegangan Menengah dan Saluran Tegangan Rendah
Pada Beban Maksimal

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Kapasitas Trafo (kVa)	Beban Trafo (kVa)	Posisi Tap
		GI-GD	GD-GD	TT	TR			
1	P927	0.12	0.12	19.989	0.360	100	100	3
2	P904	4.22	4.1	19.623	0.352	50	50	3
3	P113	8.47	4.25	19.248	0.345	100	100	3
4	P603	9.67	1.2	19.145	0.343	25	25	3
5	P114	10.42	0.75	19.080	0.341	100	100	3
6	P611	10.87	0.45	19.079	0.341	100	100	3
7	P603	10.97	0.1	19.079	0.341	25	25	3
8	P572	11.37	0.4	19.048	0.341	100	100	3
9	P081	12.37	1	18.970	0.339	100	100	3
10	P961	12.47	0.1	18.969	0.339	50	50	3
11	P759	12.67	0.2	18.954	0.339	25	25	3
12	P975	12.97	0.3	18.932	0.338	50	50	3
13	P122	13.07	0.1	18.925	0.380	250	250	4
14	P230	13.47	0.4	18.897	0.337	100	100	3
15	P861	14.02	0.55	18.896	0.337	100	100	3
16	P082	14.12	0.1	18.891	0.337	160	160	3
17	P421	14.67	0.55	18.890	0.337	100	100	3
18	P533	14.87	0.3	18.889	0.337	100	100	3
19	P942	14.97	0.1	18.889	0.337	100	100	3
20	P989	15.52	0.55	18.861	0.336	50	50	3
21	P814	16.32	0.8	18.818	0.335	50	50	3
22	P161	16.75	0.45	18.794	0.335	50	50	3
23	P260	17.5	0.75	18.756	0.333	50	50	3
24	P553	18.05	1.55	18.678	0.332	50	50	3
25	P155	18.65	0.55	18.651	0.332	160	160	3
26	P684	19.25	0.6	18.624	0.332	50	50	3
27	P799	19.4	0.15	18.617	0.332	50	50	3
28	P650	19.6	0.2	18.608	0.329	160	160	3
29	P761	22.95	3.35	18.475	0.327	50	50	3
30	P195	24.9	1.95	18.399	0.327	100	100	3
31	P156	25.45	0.55	18.379	0.326	100	100	3
32	P606	26.1	0.65	18.356	0.325	50	50	3
33	P590	28.3	2.2	18.283	0.325	25	25	3
34	P605	28.85	0.55	18.265	0.344	50	50	3
35	P288	29.1	0.25	18.257	0.366	100	100	4
36	P157	29.65	0.55	18.241	0.324	100	100	4
37	P513	29.85	0.2	18.235	0.324	50	50	3
38	P686	30.45	0.6	18.220	0.343	50	50	3
39	P158	31.05	0.6	18.205	0.323	100	100	4
40	P197	31.30	0.25	18.199	0.323	100	100	3
41	P856	35.75	4.45	18.179	0.323	50	50	3
42	P610	36.15	0.4	18.178	0.323	100	100	3
43	P768	36.3	0.15	18.177	0.323	50	50	3

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Kapasitas Trafo (kVa)	Beban Trafo (kVa)	Posisi Tap
		GI-GD	GD-GD	TT	TR			
44	P548	36.6	0.3	18.194	0.323	50	50	3
45	P928	37.35	0.75	18.183	0.323	50	50	3
46	P159	38.1	0.75	18.172	0.322	100	100	3
47	P502	38.85	0.75	18.163	0.322	100	100	3
48	P160	39.25	0.4	18.160	0.322	200	200	3
49	P380	39.6	0.35	18.158	0.322	100	100	3
50	P695	39.7	0.1	18.158	0.322	25	25	3
51	P975	40.35	0.65	18.156	0.322	50	50	3
52	P191	45.55	5.2	18.150	0.322	50	50	3



Tabel Tegangan Setelah Dilakukan Evaluasi Sadapan Transformator

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Beban Trafo (kVa)	Tap ETAP (%)	Tap Traf o	Konversi Tap(kV)
		GI-GD	GD-GD	TT	TR				
1	P927	0.12	0.12	19.994	0.387	67.07	-5	3	19
2	P904	4.22	4.1	19.811	0.388	22.95	-5	3	19
3	P113	8.47	4.25	19.624	0.380	42.53	-5	3	19
4	P603	9.67	1.2	19.572	0.388	5.03	-5	3	19
5	P114	10.42	0.75	19.539	0.379	64.18	-5	4	19
6	P611	10.87	0.45	19.539	0.385	31.93	-5	3	19
7	P603	10.97	0.1	19.539	0.387	4.77	-5	3	19
8	P572	11.37	0.4	19.523	0.385	30.2	-5	3	19
9	P081	12.37	1	19.482	0.375	77.16	-5	4	19
10	P961	12.47	0.1	19.482	0.386	11.02	-5	3	19
11	P759	12.67	0.2	19.474	0.386	4.6	-5	3	19
12	P975	12.97	0.3	19.463	0.380	24.44	-5	3	19
13	P122	13.07	0.1	19.459	0.380	117.5	-5	3	19
14	P230	13.47	0.4	19.444	0.374	75.04	-5	4	19
15	P861	14.02	0.55	19.444	0.375	72	-5	4	19
16	P082	14.12	0.1	19.441	0.390	178.24	-10	4	18
17	P421	14.67	0.55	19.441	0.377	62.64	-5	4	19
18	P533	14.87	0.3	19.441	0.377	64.03	-5	4	19
19	P942	14.97	0.1	19.441	0.386	14.77	-5	4	19
20	P989	15.52	0.55	19.427	0.376	34	-5	4	19
21	P814	16.32	0.8	19.406	0.373	38.5	-5	4	19
22	P161	16.75	0.45	19.395	0.384	9.99	-5	3	19
23	P260	17.5	0.75	19.376	0.381	17.52	-5	3	19
24	P553	18.05	1.55	19.338	0.377	25.98	-5	4	19
25	P155	18.65	0.55	19.325	0.371	124.43	-5	4	19
26	P684	19.25	0.6	19.312	0.374	33.04	-5	4	19
27	P799	19.4	0.15	19.309	0.381	13	-5	3	19
28	P650	19.6	0.2	19.304	0.386	4.58	-5	3	19
29	P761	22.95	3.35	19.236	0.382	7.64	-5	3	19
30	P195	24.9	1.95	19.196	0.372	61.58	-5	4	19
31	P156	25.45	0.55	19.186	0.392	72.89	-10	4	18
32	P606	26.1	0.65	19.174	0.378	15.45	-5	4	19
33	P590	28.3	2.2	19.136	0.380	4.27	-5	4	19
34	P605	28.85	0.55	19.127	0.393	30.37	-10	4	18
35	P288	29.1	0.25	19.122	0.392	62.69	-10	4	18
36	P157	29.65	0.55	19.114	0.380	51.55	-5	4	19
37	P513	29.85	0.2	19.111	0.390	37.36	-10	4	18
38	P686	30.45	0.6	19.103	0.379	9.16	-5	4	19
39	P158	31.05	0.6	19.095	0.393	55.65	-10	4	18
40	P197	31.30	0.25	19.092	0.392	58.41	-10	4	18
41	P856	35.75	4.45	19.087	0.381	1.37	-5	3	19
42	P610	36.15	0.4	19.087	0.376	31.93	-5	4	19
43	P768	36.3	0.15	19.087	0.373	21.7	-5	4	19
44	P548	36.6	0.3	19.089	0.390	35.66	-10	4	18

No	Nama Gardu	Jarak (kms)		Tegangan (kV)		Beban Trafo (kVa)	Tap ETAP (%)	Tap Traf o	Konversi Tap(kV)
		GI-GD	GD-GD	TT	TR				
45	P928	37.35	0.75	19.082	0.393	27.7	-10	4	18
46	P159	38.1	0.75	19.075	0.381	114.95	-10	4	18
47	P502	38.85	0.75	19.071	0.374	36.69	-5	4	19
48	P160	39.25	0.4	19.069	0.390	139.37	-10	4	18
49	P380	39.6	0.35	19.068	0.388	77.73	-10	4	18
50	P695	39.7	0.1	19.067	0.378	4.03	-5	4	19
51	P975	40.35	0.65	19.067	0.372	24.44	-5	4	19
52	P191	45.55	5.2	19.064	0.392	27.94	-10	4	18



Project:	ETAP PowerStation	Page:	1
Location:	4.0.0C	Date:	01-06-2017
Contract:		SN:	KLGGCONSULT
Engineer:		Revision:	Basic
Filename:	PenyulangP9	Study Case:	LP
		Config:	Normal

LOAD FLOW REPORT

Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	%PF	% Tap	
Bus1	20.000	20.000	0.0	1.892	1.562	0	0	0	0	Bus2	1.895	1.562	70	77.18		
Bus2	20.000	19.994	0.0	0	0	0	0	0	0	Bus1	-1.895	-1.561	70	77.18		
										Bus4	1.840	1.517	68	77.16		
										Bus3	0.054	0.043	2	78.01		
Bus3	0.380	0.367	-1.8	0	0	0.054	0.040	0	0	Bus2	-0.054	-0.040	105	80.00		
Bus4	20.000	19.810	-0.2	0	0	0	0	0	0	Bus2	-1.828	-1.488	68	77.34		
										Bus6	1.809	1.484	68	77.33		
										Bus5	0.019	0.015	0	78.65		
Bus5	0.380	0.367	-1.4	0	0	0.018	0.014	0	0	Bus4	-0.018	-0.014	16	80.00		
Bus6	20.000	19.621	-0.3	0	0	0	0	0	0	Bus4	-1.797	-1.464	68	77.32		
										Bus8	1.762	1.437	66	77.48		
										Bus7	0.034	0.027	1	78.73		
Bus7	0.380	0.364	-1.5	0	0	0.034	0.025	0	0	Bus6	-0.034	-0.025	67	80.00		
Bus8	20.000	19.569	-0.4	0	0	0	0	0	0	Bus6	-1.759	-1.432	66	77.55		
										Bus10	1.735	1.428	66	77.54		
										Bus9	0.004	0.003	0	78.41		
Bus9	0.380	0.368	-1.0	0	0	0.004	0.003	0	0	Bus8	-0.004	-0.003	7	80.00		
Bus10	20.000	19.536	-0.4	0	0	0	0	0	0	Bus8	-1.733	-1.426	66	77.58		
										Bus12	0.029	0.023	1	78.18		
										Bus16	1.671	1.361	63	77.54		
										Bus11	0.052	0.042	1	78.02		
Bus11	0.380	0.358	-2.3	0	0	0.051	0.039	0	0	Bus10	-0.051	-0.039	105	80.00		
Bus12	20.000	19.536	-0.4	0	0	0	0	0	0	Bus10	-0.029	-0.023	1	78.18		
										Bus14	0.004	0.003	0	78.43		
										Bus13	0.026	0.020	0	78.94		
Bus13	0.380	0.365	-1.3	0	0	0.026	0.019	0	0	Bus12	-0.026	-0.019	50	80.00		
Bus14	20.000	19.536	-0.4	0	0	0	0	0	0	Bus12	-0.004	-0.003	0	78.43		
										Bus15	0.009	0.007	0	78.43		
Bus15	0.380	0.367	-1.0	0	0	0	0	0	0	Bus14	-0.004	-0.003	7	80.00		
Bus16	20.000	19.519	-0.4	0	0	0	0	0	0	Bus10	-1.670	-1.360	63	77.55		
										Bus18	1.646	1.341	62	77.53		
										Bus17	0.024	0.019	0	78.18		
Bus17	0.380	0.365	-1.3	0	0	0.024	0.018	0	0	Bus16	-0.024	-0.018	47	80.00		
Bus18	20.000	19.478	-0.5	0	0	0	0	0	0	Bus16	-1.643	-1.337	62	77.57		
										Bus20	0.009	0.007	0	78.34		
										Bus22	1.572	1.278	60	77.56		
										Bus19	0.003	0.001	2	77.58		
Bus19	0.380	0.354	-2.7	0	0	0.002	0.000	0	0	Bus18	-0.002	-0.000	125	80.00		
Bus20	20.000	19.478	-0.5	0	0	0	0	0	0	Bus18	-0.009	-0.007	0	78.34		
										Bus21	0.009	0.007	0	78.34		
Bus21	0.380	0.360	-1.1	0	0	0.009	0.007	0	0	Bus20	-0.009	-0.007	17	80.00		
Bus22	20.000	19.471	-0.5	0	0	0	0	0	0	Bus18	-1.571	-1.278	60	77.57		
										Bus24	1.568	1.276	59	77.57		
										Bus23	0.004	0.003	0	78.45		
Bus23	0.380	0.366	-1.0	0	0	0	0	0	0	Bus22	-0.004	-0.003	7	80.00		

Project: **ETAP PowerStation** Page: 2
 Location: 4.0.0C Date: 01-06-2017
 Contract: SN: KLGCONSULT
 Engineer: Revision: Basic
 Filename: PenyulangP9 Study Case: LP Config.: Normal

Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang.	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%FP	% Tap	
Bus24	20.000	19.459	-0.3	0	0	0	0	0	0	Bus22	-1.367	-1.275	59	77.58		
										Bus26	1.547	1.250	59	77.57		
										Bus25	0.020	0.016	0	78.50		
Bus25	0.380	0.380	-1.9	0	0	0.020	0.015	0	0	Bus24	-0.020	-0.015	39	80.00		
Bus26	20.000	19.455	-0.3	0	0	0	0	0	0	Bus24	-1.547	-1.250	59	77.57		
										Bus28	1.432	1.134	55	77.50		
										Bus27	0.095	0.075	3	78.70	-4.950	
Bus27	0.380	0.380	-1.7	0	0	0.094	0.071	0	0	Bus26	-0.094	-0.071	179	80.00		
Bus28	20.000	19.441	-0.3	0	0	0	0	0	0	Bus26	-1.431	-1.133	55	77.51		
										Bus30	0.058	0.047	2	77.74		
										Bus32	1.332	1.086	51	77.50		
										Bus29	0.061	0.049	2	77.84		
Bus29	0.380	0.354	-2.7	0	0	0.060	0.045	0	0	Bus28	-0.060	-0.045	122	80.00		
Bus30	20.000	19.440	-0.3	0	0	0	0	0	0	Bus28	-0.058	-0.047	2	77.74		
										Bus31	0.039	0.047	2	77.74		
Bus31	0.380	0.355	-2.8	0	0	0.058	0.043	0	0	Bus30	-0.058	-0.043	117	80.00		
Bus32	20.000	19.437	-0.3	0	0	0	0	0	0	Bus28	-1.332	-1.086	51	77.50		
										Bus34	0.051	0.041	1	78.04		
										Bus36	0.064	0.051	2	78.30		
										Bus40	1.072	0.872	41	77.58		
										Bus33	0.145	0.123	5	76.37		
Bus33	0.380	0.346	-3.9	0	0	0.142	0.107	0	0	Bus32	-0.142	-0.107	297	80.00		
Bus34	20.000	19.437	-0.3	0	0	0	0	0	0	Bus32	-0.051	-0.041	1	78.04		
										Bus35	0.051	0.041	1	78.04		
Bus35	0.380	0.357	-2.4	0	0	0.050	0.038	0	0	Bus34	-0.050	-0.038	102	80.00		
Bus36	20.000	19.437	-0.3	0	0	0	0	0	0	Bus32	-0.064	-0.051	2	78.30		
										Bus39	0.012	0.006	0	79.55		
										Bus37	0.052	0.041	1	78.01		
Bus37	0.380	0.358	-2.4	0	0	0.051	0.039	0	0	Bus36	-0.051	-0.039	103	80.00		
Bus38	20.000	19.427	-0.3	0	0	0	0	0	0	Bus36	-0.012	-0.006	0	79.55		
										Bus39	0.012	0.009	0	79.55		
Bus39	0.380	0.366	-0.9	0	0	0.012	0.009	0	0	Bus38	-0.012	-0.009	23	80.00		
Bus40	20.000	19.423	-0.3	0	0	0	0	0	0	Bus32	-1.072	-0.871	41	77.60		
										Bus42	1.044	0.849	40	77.59		
										Bus41	0.028	0.022	1	77.87		
Bus41	0.380	0.355	-2.3	0	0	0.027	0.020	0	0	Bus40	-0.027	-0.020	55	80.00		
Bus42	20.000	19.402	-0.3	0	0	0	0	0	0	Bus40	-1.043	-0.848	40	77.61		
										Bus49	1.012	0.822	38	77.62		
										Bus45	0.032	0.026	1	77.53		
Bus43	0.380	0.357	-2.3	0	0	0.031	0.023	0	0	Bus42	-0.031	-0.023	63	80.00		
Bus44	20.000	19.399	-0.8	0	0	0	0	0	0	Bus42	-1.011	-0.821	38	77.63		
										Bus51	1.003	0.815	38	77.61		
										Bus50	0.008	0.006	0	79.48		
Bus50	0.380	0.365	-1.1	0	0	0.008	0.006	0	0	Bus49	-0.008	-0.006	15	80.00		
Bus51	20.000	19.372	-0.8	0	0	0	0	0	0	Bus49	-1.003	-0.814	38	77.63		
										Bus55	0.889	0.805	27	77.61		
										Bus52	0.014	0.011	0	78.93		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR	
ID	kV	kV	Ang.	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	% PF	% Tap		
Bus2	0.380	0.361	-1.8	0	0	0.014	0.010	0	0	Bus51	-0.014	-0.010	27	80.00			
Bus5	20.000	19.333	-8.8	0	0	0	0	0	0	Bus51	-0.087	-0.001	37	77.65			
										Bus57	0.966	0.784	37	77.64			
										Bus56	0.021	0.017	0	78.38			
Bus56	0.380	0.357	-2.3	0	0	0.021	0.016	0	0	Bus55	-0.021	-0.016	42	80.00			
Bus57	20.000	19.320	-8.8	0	0	0	0	0	0	Bus55	-0.066	-0.784	37	77.65			
										Bus59	0.865	0.702	33	77.67			
										Bus58	0.100	0.082	3	77.52			
Bus58	0.380	0.351	-2.9	0	0	0.099	0.074	0	0	Bus57	-0.099	-0.074	203	80.00			
Bus59	20.000	19.307	-8.8	0	0	0	0	0	0	Bus57	-0.865	-0.701	33	77.68			
										Bus61	0.838	0.680	32	77.67			
										Bus60	0.027	0.024	1	77.91			
Bus60	0.380	0.353	-2.8	0	0	0.026	0.020	0	0	Bus59	-0.026	-0.020	53	80.00			
Bus61	20.000	19.304	-8.8	0	0	0	0	0	0	Bus59	-0.838	-0.679	32	77.68			
										Bus63	0.827	0.671	31	77.86			
										Bus62	0.016	0.000	0	78.21			
Bus62	0.380	0.362	-1.4	0	0	0.010	0.008	0	0	Bus61	-0.010	-0.008	20	80.00			
Bus63	20.000	19.300	-8.8	0	0	0	0	0	0	Bus61	-0.827	-0.671	31	77.86			
										Bus65	0.824	0.668	31	77.65			
										Bus64	0.064	0.003	0	78.91			
Bus64	0.380	0.366	-0.7	0	0	0	0	0	0	Bus63	-0.064	-0.003	7	80.00			
Bus65	20.000	19.230	-8.7	0	0	0	0	0	0	Bus63	-0.824	-0.665	31	77.72			
										Bus67	0.815	0.660	31	77.71			
										Bus66	0.008	0.005	0	78.54			
Bus66	0.380	0.362	-1.2	0	0	0.006	0.005	0	0	Bus65	-0.008	-0.005	12	80.00			
Bus67	20.000	19.190	-8.8	0	0	0	0	0	0	Bus65	-0.814	-0.658	31	77.75			
										Bus69	1.764	0.618	29	77.74			
										Bus68	0.030	0.040	1	78.03			
Bus68	0.380	0.352	-2.8	0	0	0.049	0.037	0	0	Bus67	-0.049	-0.037	101	80.00			
Bus69	20.000	19.180	-8.8	0	0	0	0	0	0	Bus67	-0.764	-0.618	29	77.75			
										Bus71	0.705	0.570	27	77.75			
										Bus70	0.099	0.048	2	77.64			
Bus70	0.380	0.349	-1.0	0	0	0.056	0.044	0	0	Bus69	-0.056	-0.044	120	80.00			
Bus71	20.000	19.168	-8.8	0	0	0	0	0	0	Bus69	-0.705	-0.570	27	77.77			
										Bus73	0.892	0.560	26	77.74			
										Bus72	0.012	0.010	0	78.04			
Bus72	0.380	0.368	-1.7	0	0	0.012	0.009	0	0	Bus71	-0.012	-0.009	24	80.00			
Bus73	20.000	19.130	-8.8	0	0	0	0	0	0	Bus71	-0.891	-0.558	26	77.78			
										Bus75	0.688	0.556	26	77.78			
										Bus74	0.003	0.003	0	78.47			
Bus74	0.380	0.369	-1.3	0	0	0	0	0	0	Bus73	-0.003	-0.003	6	80.00			
Bus75	20.000	19.120	-8.8	0	0	0	0	0	0	Bus73	-0.688	-0.555	26	77.78			
										Bus77	0.663	0.536	25	77.78			
										Bus76	0.025	0.020	0	78.04			
Bus76	0.380	0.351	-2.6	0	0	0.024	0.018	0	0	Bus75	-0.024	-0.018	38	80.00			
Bus77	20.000	19.118	-8.8	0	0	0	0	0	0	Bus75	-0.663	-0.536	25	77.78			
										Bus79	0.612	0.495	23	77.75			

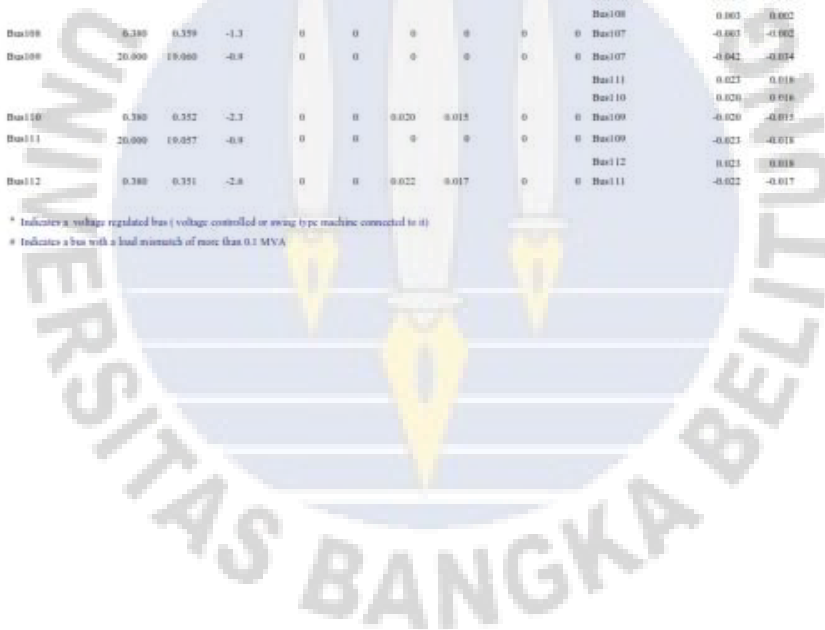
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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XPMR
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	% PF	% Tap	
Bus76	0.380	0.379	-2.5	0	0	0.050	0.038	0	0	Bus76	0.051	0.040	1	78.18	-5.000	
Bus79	20.000	19.108	-0.8	0	0	0	0	0	0	Bus77	-0.050	-0.038	07	80.00		
Bus80	0.380	0.380	-2.2	0	0	0.041	0.031	0	0	Bus78	0.371	0.462	22	77.70		
Bus81	20.000	19.105	-0.8	0	0	0	0	0	0	Bus80	0.642	0.033	1	78.38	-8.838	
Bus82	0.380	0.347	-1.1	0	0	0.030	0.022	0	0	Bus79	-0.041	-0.031	78	80.00		
Bus83	20.000	19.096	-0.8	0	0	0	0	0	0	Bus79	-0.570	-0.462	22	77.70		
Bus84	0.380	0.359	-1.4	0	0	0.007	0.006	0	0	Bus83	0.540	0.437	21	77.71		
Bus85	20.000	19.088	-0.8	0	0	0	0	0	0	Bus82	0.030	0.025	1	77.56		
Bus86	0.380	0.371	-2.4	0	0	0.045	0.033	0	0	Bus81	-0.030	-0.022	62	80.00		
Bus87	20.000	19.085	-0.9	0	0	0	0	0	0	Bus81	-0.540	-0.437	21	77.72		
Bus88	0.380	0.351	-2.8	0	0	0.047	0.035	0	0	Bus85	0.533	0.432	20	77.89		
Bus89	20.000	19.080	-0.9	0	0	0	0	0	0	Bus84	0.007	0.006	0	79.43		
Bus90	0.380	0.362	-0.8	0	0	0	0	0	0	Bus83	-0.007	-0.006	14	80.00		
Bus91	20.000	19.080	-0.9	0	0	0	0	0	0	Bus85	-0.532	-0.431	20	77.70		
Bus92	0.380	0.356	-1.8	0	0	0.026	0.019	0	0	Bus87	0.487	0.396	18	77.64		
Bus93	20.000	19.080	-0.9	0	0	0	0	0	0	Bus86	0.045	0.036	1	78.39	-5.000	
Bus94	0.380	0.354	-2.2	0	0	0.017	0.013	0	0	Bus85	-0.045	-0.033	36	80.00		
Bus95	20.000	19.082	-0.9	0	0	0	0	0	0	Bus85	-0.487	-0.396	18	77.64		
Bus96	0.380	0.341	-1.6	0	0	0.029	0.021	0	0	Bus89	0.044	0.035	1	78.87		
Bus97	20.000	19.075	-0.8	0	0	0	0	0	0	Bus95	0.396	0.323	15	77.45		
Bus98	0.380	0.351	-2.3	0	0	0.022	0.017	0	0	Bus88	0.047	0.038	1	78.12		
Bus99	20.000	19.069	-0.9	0	0	0	0	0	0	Bus87	-0.047	-0.039	66	80.00		
Bus100	0.380	0.337	-4.3	0	0	0.092	0.069	0	0	Bus87	-0.044	-0.034	1	78.87		
Bus101	20.000	19.064	-0.9	0	0	0	0	0	0	Bus91	0.043	0.034	1	78.84		
										Bus90	0.001	0.001	0	79.91		
										Bus89	-0.001	-0.001	2	80.00		
										Bus89	-0.043	-0.034	1	78.84		
										Bus92	0.017	0.014	0	78.82		
										Bus92	0.026	0.020	0	79.00		
										Bus91	-0.026	-0.019	21	80.00		
										Bus91	-0.017	-0.014	0	78.82		
										Bus94	0.017	0.014	0	78.82		
										Bus93	-0.017	-0.013	15	80.00		
										Bus87	-0.396	-0.323	15	77.45		
										Bus97	0.387	0.300	14	77.43		
										Bus96	0.029	0.023	1	77.67		
										Bus95	-0.029	-0.021	39	80.00		
										Bus95	-0.387	-0.300	14	77.44		
										Bus99	0.345	0.282	13	77.39		
										Bus98	0.022	0.018	0	78.22		
										Bus97	-0.022	-0.017	45	80.00		
										Bus97	-0.344	-0.282	13	77.48		
										Bus101	0.251	0.202	9	77.90		
										Bus100	0.094	0.080	3	76.97		
										Bus99	-0.092	-0.069	196	80.00		
										Bus99	-0.251	-0.202	9	77.91		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang.	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	% PF	% Tap	
										Bus03	0.221	0.179	8	77.78		
										Bus02	0.030	0.023	1	78.84		
Bus02	0.380	0.355	-2.0	0	0	0.029	0.022	0	0	Bus01	-0.029	-0.022	59	80.00		
Bus03	20.000	19.862	-0.9	0	0	0	0	0	0	Bus01	-0.221	-0.179	8	77.78		
										Bus05	0.108	0.087	4	77.84		
										Bus04	0.113	0.091	4	77.73		
Bus04	0.380	0.348	-5.0	0	0	0.111	0.083	0	0	Bus03	-0.111	-0.083	230	80.00		
Bus05	20.000	19.861	-0.9	0	0	0	0	0	0	Bus03	-0.108	-0.087	4	77.84		
										Bus07	0.045	0.036	1	78.38		
										Bus06	0.063	0.051	2	77.44		
Bus06	0.380	0.346	-3.3	0	0	0.062	0.047	0	0	Bus05	-0.062	-0.047	129	80.00		
Bus07	20.000	19.861	-0.9	0	0	0	0	0	0	Bus05	-0.045	-0.036	1	78.38		
										Bus09	0.042	0.034	1	78.31		
										Bus08	0.063	0.052	0	79.50		
Bus08	0.380	0.359	-1.3	0	0	0	0	0	0	Bus07	-0.063	-0.052	0	80.00		
Bus09	20.000	19.860	-0.8	0	0	0	0	0	0	Bus07	-0.042	-0.034	1	78.31		
										Bus11	0.023	0.018	0	78.20		
										Bus10	0.020	0.016	0	78.44		
Bus10	0.380	0.352	-2.3	0	0	0.020	0.015	0	0	Bus09	-0.020	-0.015	39	80.00		
Bus11	20.000	19.857	-0.8	0	0	0	0	0	0	Bus09	-0.023	-0.018	0	78.20		
										Bus12	0.023	0.018	0	78.20		
Bus12	0.380	0.351	-2.8	0	0	0.022	0.017	0	0	Bus11	-0.022	-0.017	45	80.00		

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)
 * Indicates a bus with a load mismatch of more than 0.1 MVA



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LOAD FLOW REPORT

Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	%PT	% Tap	
Bus1	20.000	20.000	0.0	3.614	3.169	0	0	0	0	Bus2	3.614	3.169	138	75.18		
Bus2	20.000	19.999	0.0	0	0	0	0	0	0	Bus1	-3.612	-3.168	138	75.20		
										Bus4	3.531	3.009	135	75.16		
										Bus3	0.081	0.067	3	76.97		
Bus3	0.380	0.380	-2.8	0	0	0.000	0.000	0	0	Bus2	-0.080	-0.060	160	80.00		
Bus4	20.000	19.623	-0.3	0	0	0	0	0	0	Bus2	-3.482	-3.024	138	75.28		
										Bus6	3.441	2.990	134	75.48		
										Bus5	0.041	0.034	1	76.84		
Bus5	0.380	0.352	-3.2	0	0	0.040	0.030	0	0	Bus4	-0.040	-0.030	81	80.00		
Bus6	20.000	19.248	-0.8	0	0	0	0	0	0	Bus4	-3.292	-2.914	134	75.85		
										Bus8	3.210	2.846	130	75.83		
										Bus7	0.081	0.068	3	76.70		
Bus7	0.380	0.345	-3.7	0	0	0.080	0.060	0	0	Bus6	-0.080	-0.060	167	80.00		
Bus8	20.000	19.145	-0.7	0	0	0	0	0	0	Bus6	-3.297	-2.926	130	75.93		
										Bus10	3.277	2.908	130	75.92		
										Bus9	0.020	0.017	0	76.66		
Bus9	0.380	0.343	-3.8	0	0	0.020	0.015	0	0	Bus8	-0.020	-0.015	42	80.00		
Bus10	20.000	18.060	-0.8	0	0	0	0	0	0	Bus8	-3.268	-2.798	130	75.99		
										Bus12	0.102	0.085	4	76.64		
										Bus16	3.085	2.843	122	75.95		
										Bus11	0.081	0.068	3	76.64		
Bus11	0.380	0.341	-3.9	0	0	0.080	0.060	0	0	Bus10	-0.080	-0.060	169	80.00		
Bus12	20.000	19.079	-0.8	0	0	0	0	0	0	Bus10	-0.102	-0.085	4	76.64		
										Bus14	0.020	0.017	0	76.64		
										Bus13	0.081	0.068	3	76.64		
Bus13	0.380	0.341	-3.9	0	0	0.080	0.060	0	0	Bus12	-0.080	-0.060	168	80.00		
Bus14	20.000	19.079	-0.8	0	0	0	0	0	0	Bus12	-0.020	-0.017	0	76.64		
										Bus15	0.020	0.017	0	76.64		
Bus15	0.380	0.341	-3.9	0	0	0.020	0.015	0	0	Bus14	-0.020	-0.015	42	80.00		
Bus16	20.000	19.048	-0.8	0	0	0	0	0	0	Bus10	-3.183	-2.637	122	75.98		
										Bus18	3.060	2.568	119	75.96		
										Bus17	0.081	0.068	3	76.63		
Bus17	0.380	0.341	-3.9	0	0	0.080	0.060	0	0	Bus16	-0.080	-0.060	169	80.00		
Bus18	20.000	18.970	-0.9	0	0	0	0	0	0	Bus16	-2.991	-2.554	119	76.04		
										Bus20	0.041	0.034	1	76.59		
										Bus22	2.868	2.452	114	76.02		
										Bus19	0.081	0.068	3	76.68		
Bus19	0.380	0.339	-4.0	0	0	0.080	0.060	0	0	Bus18	-0.080	-0.060	170	80.00		
Bus20	20.000	18.980	-0.9	0	0	0	0	0	0	Bus18	-0.041	-0.034	1	76.60		
										Bus21	0.041	0.034	1	76.60		
Bus21	0.380	0.339	-4.0	0	0	0.040	0.030	0	0	Bus20	-0.040	-0.030	85	80.00		
Bus22	20.000	18.954	-0.9	0	0	0	0	0	0	Bus18	-2.867	-2.448	114	76.02		
										Bus24	2.846	2.432	114	76.03		
										Bus23	0.020	0.017	0	76.59		
Bus23	0.380	0.339	-4.0	0	0	0.020	0.015	0	0	Bus22	-0.020	-0.015	42	80.00		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%FP	% Tap	
Bus24	20.000	18.922	-0.9	0	0	0	0	0	0	Bus22	-2.844	-2.428	114	76.05		
										Bus26	2.803	2.394	112	76.04		
										Bus25	0.041	0.034	1	76.58		
Bus25	0.380	0.338	-4.1	0	0	0.040	0.030	0	0	Bus24	-0.040	-0.030	85	80.00		
Bus26	20.000	18.925	-0.9	0	0	0	0	0	0	Bus24	-2.802	-2.393	112	76.05		
										Bus28	2.590	2.226	104	75.96		
										Bus27	0.205	0.167	8	77.28	-8.887	
Bus27	0.380	0.380	-3.4	0	0	0.200	0.120	0	0	Bus26	-0.200	-0.150	379	80.00		
Bus28	20.000	18.897	-0.9	0	0	0	0	0	0	Bus26	-2.597	-2.222	104	75.98		
										Bus30	0.081	0.068	3	76.56		
										Bus32	2.434	2.085	97	75.95		
										Bus29	0.081	0.068	3	76.57		
Bus29	0.380	0.337	-4.1	0	0	0.080	0.060	0	0	Bus28	-0.080	-0.060	171	80.00		
Bus30	20.000	18.896	-0.9	0	0	0	0	0	0	Bus28	-0.081	-0.068	3	76.57		
										Bus31	0.081	0.068	3	76.57		
Bus31	0.380	0.337	-4.1	0	0	0.080	0.060	0	0	Bus30	-0.080	-0.060	171	80.00		
Bus32	20.000	18.891	-0.9	0	0	0	0	0	0	Bus28	-2.433	-2.084	97	75.95		
										Bus34	0.081	0.068	3	76.56		
										Bus36	0.165	0.127	6	76.56		
										Bus40	2.058	1.765	82	75.84		
										Bus33	0.130	0.110	5	76.56		
Bus33	0.380	0.337	-4.1	0	0	0.128	0.096	0	0	Bus32	-0.128	-0.096	273	80.00		
Bus34	20.000	18.890	-0.9	0	0	0	0	0	0	Bus32	-0.081	-0.068	3	76.56		
										Bus35	0.081	0.068	3	76.56		
Bus35	0.380	0.337	-4.1	0	0	0.080	0.060	0	0	Bus34	-0.080	-0.060	171	80.00		
Bus36	20.000	18.889	-0.9	0	0	0	0	0	0	Bus32	-0.163	-0.137	6	76.56		
										Bus39	0.081	0.068	3	76.56		
										Bus37	0.081	0.068	3	76.56		
Bus37	0.380	0.337	-4.1	0	0	0.080	0.060	0	0	Bus36	-0.080	-0.060	171	80.00		
Bus38	20.000	18.888	-0.9	0	0	0	0	0	0	Bus36	-0.081	-0.068	3	76.56		
										Bus39	0.081	0.068	3	76.56		
Bus39	0.380	0.337	-4.1	0	0	0.080	0.060	0	0	Bus38	-0.080	-0.060	171	80.00		
Bus40	20.000	18.881	-1.0	0	0	0	0	0	0	Bus32	-2.056	-1.765	82	75.87		
										Bus42	2.015	1.731	81	75.86		
										Bus41	0.041	0.034	1	76.55		
Bus41	0.380	0.337	-4.1	0	0	0.040	0.030	0	0	Bus40	-0.040	-0.030	85	80.00		
Bus42	20.000	18.888	-1.0	0	0	0	0	0	0	Bus40	-2.012	-1.726	81	75.90		
										Bus49	1.871	1.691	79	75.89		
										Bus45	0.041	0.034	1	76.53		
Bus43	0.380	0.336	-4.2	0	0	0.040	0.030	0	0	Bus42	-0.040	-0.030	85	80.00		
Bus44	20.000	18.794	-0.9	0	0	0	0	0	0	Bus42	-1.969	-1.689	79	75.91		
										Bus51	1.928	1.654	78	75.90		
										Bus50	0.041	0.034	1	76.52		
Bus49	0.380	0.335	-4.2	0	0	0.040	0.030	0	0	Bus49	-0.040	-0.030	86	80.00		
Bus51	20.000	18.756	-1.1	0	0	0	0	0	0	Bus49	-1.925	-1.650	78	75.94		
										Bus55	1.885	1.616	76	75.92		
										Bus52	0.041	0.034	1	76.51		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR	
ID	kV	kV	Ang.	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	% PF	% Tap	
Bus2	0.380	0.325	-4.3	0	0	0.040	0.020	0	0	Bus51	-0.040	-0.020	88	80.00		
Bus5	20.000	18.678	-1.1	0	0	0	0	0	0	Bus51	-1.879	-1.607	76	76.00		
										Bus57	1.838	1.572	74	75.99		
										Bus56	0.041	0.024	1	76.48		
Bus56	0.380	0.333	-4.4	0	0	0.040	0.020	0	0	Bus55	-0.040	-0.020	88	80.00		
Bus57	20.000	18.651	-1.1	0	0	0	0	0	0	Bus55	-1.836	-1.568	74	76.02		
										Bus59	1.708	1.459	89	75.99		
										Bus58	0.130	0.110	5	76.48		
Bus58	0.380	0.332	-4.4	0	0	0.128	0.096	0	0	Bus57	-0.128	-0.096	277	80.00		
Bus59	20.000	18.624	-1.2	0	0	0	0	0	0	Bus57	-1.704	-1.456	89	76.01		
										Bus61	1.663	1.422	67	76.00		
										Bus60	0.041	0.024	1	76.45		
Bus60	0.380	0.332	-4.4	0	0	0.040	0.020	0	0	Bus59	-0.040	-0.020	88	80.00		
Bus61	20.000	18.617	-1.2	0	0	0	0	0	0	Bus59	-1.663	-1.421	67	76.01		
										Bus63	1.622	1.387	86	76.00		
										Bus62	0.041	0.024	1	76.45		
Bus62	0.380	0.332	-4.4	0	0	0.040	0.020	0	0	Bus61	-0.040	-0.020	87	80.00		
Bus63	20.000	18.608	-1.2	0	0	0	0	0	0	Bus61	-1.621	-1.386	86	76.01		
										Bus65	1.491	1.276	80	75.97		
										Bus64	0.130	0.110	5	76.45		
Bus64	0.380	0.332	-4.5	0	0	0.128	0.096	0	0	Bus63	-0.128	-0.096	278	80.00		
Bus65	20.000	18.475	-1.3	0	0	0	0	0	0	Bus63	-1.483	-1.264	80	76.11		
										Bus67	1.442	1.229	59	76.10		
										Bus66	0.041	0.024	1	76.39		
Bus66	0.380	0.329	-4.6	0	0	0.040	0.020	0	0	Bus65	-0.040	-0.020	87	80.00		
Bus67	20.000	18.399	-1.4	0	0	0	0	0	0	Bus65	-1.438	-1.223	59	76.18		
										Bus69	1.356	1.154	55	76.17		
										Bus68	0.002	0.009	3	76.36		
Bus68	0.380	0.327	-4.7	0	0	0.000	0.000	0	0	Bus67	-0.000	-0.000	176	80.00		
Bus69	20.000	18.379	-1.4	0	0	0	0	0	0	Bus67	-1.355	-1.152	55	76.19		
										Bus71	1.273	1.083	52	76.18		
										Bus70	0.002	0.009	3	76.35		
Bus70	0.380	0.327	-4.8	0	0	0.000	0.000	0	0	Bus69	-0.000	-0.000	176	80.00		
Bus71	20.000	18.356	-1.4	0	0	0	0	0	0	Bus69	-1.272	-1.081	52	76.20		
										Bus73	1.223	1.047	50	76.19		
										Bus72	0.001	0.025	1	76.34		
Bus72	0.380	0.326	-4.8	0	0	0.040	0.020	0	0	Bus71	-0.040	-0.020	88	80.00		
Bus73	20.000	18.282	-1.5	0	0	0	0	0	0	Bus71	-1.223	-1.041	50	76.27		
										Bus75	1.207	1.024	49	76.27		
										Bus74	0.020	0.017	0	76.30		
Bus74	0.380	0.325	-4.9	0	0	0.020	0.015	0	0	Bus73	-0.020	-0.015	44	80.00		
Bus75	20.000	18.265	-1.5	0	0	0	0	0	0	Bus73	-1.206	-1.022	49	76.29		
										Bus77	1.186	0.988	48	76.29		
										Bus76	0.041	0.025	1	76.30		
Bus76	0.380	0.325	-4.9	0	0	0.040	0.020	0	0	Bus75	-0.040	-0.020	88	80.00		
Bus77	20.000	18.257	-1.5	0	0	0	0	0	0	Bus75	-1.185	-0.987	48	76.30		
										Bus79	1.084	0.919	44	76.27		

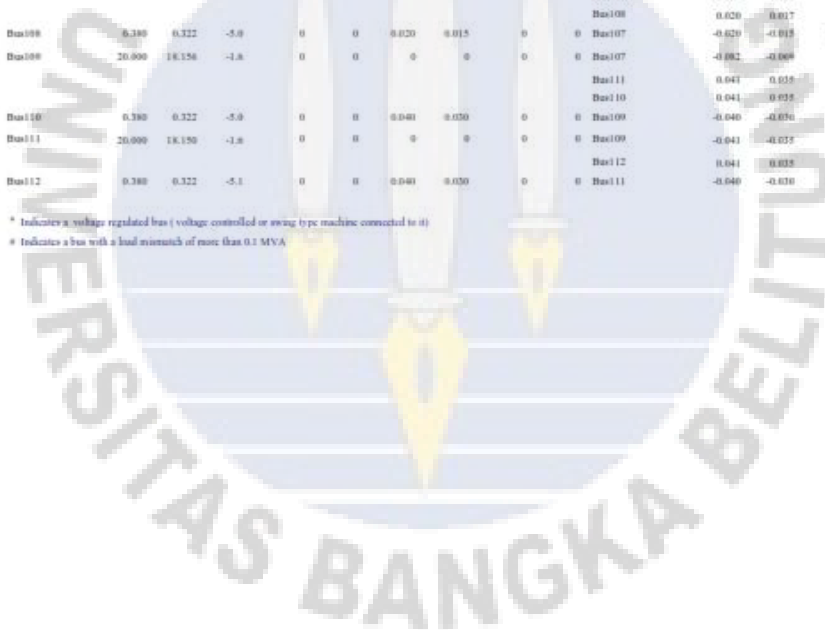
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Filename:	Tabshukmal	Config:	Normal
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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				XFMR
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	% PF	% Tap
Bus75	0.380	0.344	-4.8	0	0	0.000	0.000	0	0	Bus75	0.001	0.008	3	76.69	-5.000
Bus76	20.000	18.241	-1.3	0	0	0	0	0	0	Bus77	-0.080	-0.060	167	80.00	
Bus78	0.380	0.346	-4.2	0	0	0.000	0.000	0	0	Bus78	1.002	0.851	41	76.22	
Bus79	20.000	18.235	-1.3	0	0	0	0	0	0	Bus79	0.001	0.007	3	77.06	-10.007
Bus80	0.380	0.324	-4.9	0	0	0.040	0.030	0	0	Bus80	-0.080	-0.060	157	80.00	
Bus81	20.000	18.220	-1.3	0	0	0	0	0	0	Bus81	-1.002	-0.851	41	76.23	
Bus82	0.380	0.324	-5.0	0	0	0.040	0.030	0	0	Bus82	0.961	0.816	39	76.23	
Bus83	20.000	18.205	-1.8	0	0	0	0	0	0	Bus83	0.041	0.035	1	76.28	
Bus84	0.380	0.343	-4.8	0	0	0.000	0.000	0	0	Bus84	-0.040	-0.030	89	80.00	
Bus85	20.000	18.199	-1.8	0	0	0	0	0	0	Bus85	-0.960	-0.815	39	76.24	
Bus86	0.380	0.323	-5.0	0	0	0.000	0.000	0	0	Bus86	0.919	0.780	38	76.24	
Bus87	20.000	18.179	-1.8	0	0	0	0	0	0	Bus87	0.041	0.035	1	76.28	
Bus88	0.380	0.343	-4.8	0	0	0.000	0.000	0	0	Bus88	-0.040	-0.030	89	80.00	
Bus89	20.000	18.199	-1.8	0	0	0	0	0	0	Bus89	-0.919	-0.780	38	76.26	
Bus90	0.380	0.323	-5.0	0	0	0.000	0.000	0	0	Bus90	0.838	0.711	34	76.22	
Bus91	20.000	18.178	-1.8	0	0	0	0	0	0	Bus91	0.001	0.008	3	76.67	-5.000
Bus92	0.380	0.323	-5.0	0	0	0.040	0.030	0	0	Bus92	-0.000	-0.000	168	80.00	
Bus93	20.000	18.177	-1.8	0	0	0	0	0	0	Bus93	-0.837	-0.711	34	76.22	
Bus94	0.380	0.323	-5.0	0	0	0.000	0.000	0	0	Bus94	0.163	0.139	6	76.23	
Bus95	20.000	18.194	-1.8	0	0	0	0	0	0	Bus95	0.592	0.503	24	76.21	
Bus96	0.380	0.323	-5.0	0	0	0.040	0.030	0	0	Bus96	0.002	0.009	3	76.27	
Bus97	20.000	18.143	-1.8	0	0	0	0	0	0	Bus97	-0.000	-0.000	178	80.00	
Bus98	0.380	0.323	-5.0	0	0	0.000	0.000	0	0	Bus98	-0.163	-0.138	6	76.26	
Bus99	20.000	18.172	-1.8	0	0	0	0	0	0	Bus99	0.122	0.104	5	76.25	
Bus100	0.380	0.323	-5.0	0	0	0.040	0.030	0	0	Bus100	0.041	0.035	1	76.26	
Bus101	20.000	18.167	-1.8	0	0	0	0	0	0	Bus101	-0.040	-0.030	89	80.00	
										Bus102	-0.592	-0.503	24	76.22	
										Bus103	0.833	0.468	22	76.22	
										Bus104	0.041	0.035	1	76.26	
										Bus105	-0.040	-0.030	89	80.00	
										Bus106	-0.551	-0.468	22	76.23	
										Bus107	0.510	0.433	21	76.23	
										Bus108	0.041	0.035	1	76.26	
										Bus109	-0.040	-0.030	89	80.00	
										Bus110	-0.510	-0.433	21	76.24	
										Bus111	0.429	0.364	17	76.23	
										Bus112	0.002	0.009	3	76.25	
										Bus113	-0.000	-0.000	178	80.00	
										Bus114	-0.429	-0.364	17	76.24	

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR	
ID	kV	kV	Ang.	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	% PF	% Tap		
										Bus03	0.347	0.294	14	76.24			
										Bus02	0.082	0.069	3	76.25			
Bus02	0.380	0.322	-5.0	0	0	0.080	0.080	0	0	Bus01	-0.080	-0.060	179	80.00			
Bus03	20.000	18.180	-1.8	0	0	0	0	0	0	Bus04	-0.347	-0.294	14	76.24			
										Bus05	0.184	0.156	7	76.24			
										Bus04	0.163	0.138	6	76.25			
Bus04	0.380	0.322	-5.0	0	0	0.160	0.120	0	0	Bus03	-0.160	-0.120	158	80.00			
Bus05	20.000	18.158	-1.8	0	0	0	0	0	0	Bus05	-0.184	-0.156	7	76.24			
										Bus06	0.102	0.087	4	76.24			
Bus06	0.380	0.322	-5.0	0	0	0.080	0.080	0	0	Bus06	0.082	0.069	3	76.25			
Bus07	20.000	18.158	-1.8	0	0	0	0	0	0	Bus05	-0.102	-0.087	4	76.24			
										Bus07	0.082	0.069	3	76.24			
Bus08	0.380	0.322	-5.0	0	0	0.020	0.015	0	0	Bus08	0.020	0.017	0	76.25			
Bus09	20.000	18.156	-1.8	0	0	0	0	0	0	Bus07	-0.020	-0.015	44	80.00			
										Bus09	-0.082	-0.069	3	76.24			
Bus10	0.380	0.322	-5.0	0	0	0.040	0.020	0	0	Bus10	0.041	0.035	1	76.24			
Bus11	20.000	18.150	-1.8	0	0	0	0	0	0	Bus10	0.041	0.035	1	76.25			
										Bus09	-0.040	-0.030	89	80.00			
Bus12	0.380	0.322	-5.1	0	0	0.040	0.020	0	0	Bus09	-0.041	-0.035	1	76.24			
										Bus12	0.041	0.035	1	76.24			
										Bus11	-0.040	-0.030	89	80.00			

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)
 * Indicates a bus with a load mismatch of more than 0.1 MVA



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Engineer:		Revision:	Basic
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LOAD FLOW REPORT

Bus		Voltage			Generation		Motor Load		Static Load		Load Flow				NEMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	%FF	%Tap	
Bus1	20.000	20.000	0.0	1.891	1.543	0	0	0	0	Bus2	1.891	1.543	70	77.48		
Bus2	20.000	19.994	0.0	0	0	0	0	0	0	Bus1	-1.891	-1.543	70	77.48		
										Bus4	1.837	1.500	68	77.47		
										Bus3	0.054	0.043	1	78.23	-5.000	
Bus3	0.380	0.387	-1.7	0	0	0.024	0.040	0	0	Bus2	-0.054	-0.040	98	80.00		
Bus4	20.000	19.812	-0.2	0	0	0	0	0	0	Bus2	-1.824	-1.480	88	77.65		
										Bus6	1.806	1.466	67	77.94		
										Bus5	0.019	0.014	0	78.78	-5.000	
Bus5	0.380	0.388	-1.3	0	0	0.018	0.014	0	0	Bus4	-0.018	-0.014	14	80.00		
Bus6	20.000	19.624	-0.3	0	0	0	0	0	0	Bus4	-1.793	-1.447	67	77.83		
										Bus8	1.759	1.420	66	77.81		
										Bus7	0.024	0.027	1	78.83	-3.912	
Bus7	0.380	0.380	-1.5	0	0	0.024	0.025	0	0	Bus6	-0.024	-0.025	84	80.00		
Bus8	20.000	19.572	-0.4	0	0	0	0	0	0	Bus6	-1.750	-1.415	66	77.87		
										Bus10	1.732	1.412	66	77.86		
										Bus9	0.004	0.007	0	78.47	-5.000	
Bus9	0.380	0.388	-0.9	0	0	0.004	0.003	0	0	Bus8	-0.004	-0.003	7	80.00		
Bus10	20.000	18.540	-0.4	0	0	0	0	0	0	Bus8	-1.740	-1.408	66	77.80		
										Bus12	0.029	0.023	1	78.19		
										Bus16	1.688	1.344	63	77.88		
										Bus11	0.052	0.041	1	78.22	-5.000	
Bus11	0.380	0.379	-2.1	0	0	0.051	0.029	0	0	Bus10	-0.051	-0.038	97	80.00		
Bus12	20.000	19.539	-0.4	0	0	0	0	0	0	Bus10	-0.029	-0.023	1	78.19		
										Bus14	0.004	0.003	0	78.48		
										Bus13	0.026	0.020	0	78.14	-5.000	
Bus13	0.380	0.385	-1.2	0	0	0.026	0.018	0	0	Bus12	-0.026	-0.018	47	80.00		
Bus14	20.000	19.539	-0.4	0	0	0	0	0	0	Bus12	-0.004	-0.003	0	78.48		
										Bus15	0.004	0.003	0	78.48	-5.000	
Bus15	0.380	0.387	-0.8	0	0	0	0	0	0	Bus14	-0.004	-0.003	7	80.00		
Bus16	20.000	19.523	-0.4	0	0	0	0	0	0	Bus10	-1.667	-1.343	65	77.88		
										Bus18	1.642	1.324	62	77.88		
										Bus17	0.024	0.019	0	78.19	-5.000	
Bus17	0.380	0.385	-1.2	0	0	0.024	0.018	0	0	Bus16	-0.024	-0.018	45	80.00		
Bus18	20.000	19.482	-0.5	0	0	0	0	0	0	Bus16	-1.640	-1.320	62	77.80		
										Bus20	0.008	0.007	0	78.41		
										Bus22	1.569	1.263	59	77.90		
										Bus19	0.062	0.050	2	77.83	-5.000	
Bus19	0.380	0.375	-2.3	0	0	0.062	0.046	0	0	Bus18	-0.062	-0.046	118	80.00		
Bus20	20.000	19.482	-0.5	0	0	0	0	0	0	Bus18	-0.008	-0.007	0	78.41		
										Bus21	0.008	0.007	0	78.41	-5.000	
Bus21	0.380	0.386	-1.0	0	0	0.008	0.007	0	0	Bus20	-0.008	-0.007	16	80.00		
Bus22	20.000	18.475	-0.5	0	0	0	0	0	0	Bus18	-1.569	-1.262	59	77.91		
										Bus24	1.565	1.258	59	77.90		
										Bus23	0.004	0.003	0	78.51	-5.000	
Bus23	0.380	0.386	-1.0	0	0	0	0	0	0	Bus22	-0.004	-0.003	6	80.00		

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	Study Case: LP		

Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	% Tap		
Bus24	20.000	19.463	-0.3	0	0	0	0	0	0	Bus22	-1.364	-1.258	39	77.91			
										Bus26	1.545	1.243	38	77.91			
										Bus25	0.020	0.015	0	78.86	-5.000		
Bus25	0.380	0.380	-1.8	0	0	0.020	0.015	0	0	Bus24	-0.020	-0.015	17	80.00			
Bus26	20.000	19.459	-0.3	0	0	0	0	0	0	Bus24	-1.544	-1.243	38	77.91			
										Bus28	1.440	1.108	35	77.88			
										Bus27	0.095	0.074	3	78.70	-5.000		
Bus27	0.380	0.380	-1.7	0	0	0.094	0.071	0	0	Bus26	-0.094	-0.071	179	80.00			
Bus28	20.000	19.445	-0.3	0	0	0	0	0	0	Bus26	-1.448	-1.167	35	77.87			
										Bus30	0.058	0.047	2	77.97			
										Bus32	1.330	1.071	30	77.87			
										Bus29	0.061	0.049	2	77.89	-5.000		
Bus29	0.380	0.374	-2.3	0	0	0.060	0.045	0	0	Bus28	-0.060	-0.045	115	80.00			
Bus30	20.000	19.444	-0.3	0	0	0	0	0	0	Bus28	-0.058	-0.047	2	77.98			
										Bus31	0.039	0.047	2	77.98	-5.000		
Bus31	0.380	0.375	-2.4	0	0	0.058	0.043	0	0	Bus30	-0.058	-0.043	110	80.00			
Bus32	20.000	19.442	-0.3	0	0	0	0	0	0	Bus28	-1.329	-1.071	30	77.87			
										Bus34	0.051	0.040	1	78.24			
										Bus36	0.064	0.056	2	78.47			
										Bus40	1.070	0.861	40	77.82			
										Bus33	0.145	0.119	5	77.12	-10.000		
Bus33	0.380	0.390	-3.2	0	0	0.142	0.107	0	0	Bus32	-0.142	-0.107	263	80.00			
Bus34	20.000	19.441	-0.3	0	0	0	0	0	0	Bus32	-0.051	-0.040	1	78.24			
										Bus35	0.051	0.040	1	78.24	-5.000		
Bus35	0.380	0.377	-2.1	0	0	0.050	0.038	0	0	Bus34	-0.050	-0.038	36	80.00			
Bus36	20.000	19.441	-0.3	0	0	0	0	0	0	Bus32	-0.064	-0.050	2	78.47			
										Bus39	0.012	0.008	0	79.60			
										Bus37	0.052	0.041	1	78.21	-5.000		
Bus37	0.380	0.377	-2.2	0	0	0.051	0.038	0	0	Bus36	-0.051	-0.038	86	80.00			
Bus38	20.000	19.441	-0.3	0	0	0	0	0	0	Bus36	-0.012	-0.008	0	79.60			
										Bus39	0.012	0.009	0	79.60	-5.000		
Bus39	0.380	0.386	-0.9	0	0	0.012	0.009	0	0	Bus38	-0.012	-0.009	22	80.00			
Bus40	20.000	19.427	-0.3	0	0	0	0	0	0	Bus32	-1.070	-0.860	40	77.83			
										Bus42	1.042	0.838	39	77.83			
										Bus41	0.027	0.022	1	78.09	-5.000		
Bus41	0.380	0.376	-2.3	0	0	0.027	0.020	0	0	Bus40	-0.027	-0.020	52	80.00			
Bus42	20.000	19.408	-0.8	0	0	0	0	0	0	Bus40	-1.041	-0.837	39	77.83			
										Bus49	1.010	0.811	38	77.96			
										Bus45	0.032	0.025	1	77.79	-5.000		
Bus43	0.380	0.377	-2.6	0	0	0.031	0.023	0	0	Bus42	-0.031	-0.023	60	80.00			
Bus49	20.000	19.395	-0.8	0	0	0	0	0	0	Bus42	-1.009	-0.811	38	77.97			
										Bus51	1.001	0.805	38	77.96			
										Bus50	0.008	0.006	0	79.46	-5.000		
Bus50	0.380	0.384	-1.1	0	0	0.008	0.006	0	0	Bus49	-0.008	-0.006	15	80.00			
Bus51	20.000	19.378	-0.8	0	0	0	0	0	0	Bus49	-1.001	-0.803	38	77.98			
										Bus55	0.887	0.703	27	77.96			
										Bus52	0.014	0.011	0	79.04	-5.000		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	% PF	% Tap		
Bus2	0.380	0.381	-1.3	0	0	0.014	0.010	0	0	Bus51	-0.014	-0.010	26	80.00			
Bus5	20.000	19.238	-8.8	0	0	0	0	0	0	Bus51	-0.085	-0.790	37	78.00			
										Bus57	0.964	0.774	36	77.99			
										Bus56	0.021	0.017	0	78.33	-5.000		
Bus56	0.380	0.377	-2.0	0	0	0.021	0.016	0	0	Bus55	-0.021	-0.016	39	80.00			
Bus57	20.000	19.225	-8.8	0	0	0	0	0	0	Bus55	-0.064	-0.773	36	78.00			
										Bus59	0.863	0.692	33	78.03			
										Bus58	0.100	0.081	3	77.78	-5.000		
Bus58	0.380	0.371	-2.7	0	0	0.099	0.074	0	0	Bus57	-0.099	-0.074	102	80.00			
Bus59	20.000	19.312	-8.6	0	0	0	0	0	0	Bus57	-0.863	-0.691	33	78.04			
										Bus61	0.836	0.670	32	78.04			
										Bus60	0.027	0.024	1	78.13	-5.000		
Bus60	0.380	0.374	-2.4	0	0	0.026	0.020	0	0	Bus59	-0.026	-0.020	51	80.00			
Bus61	20.000	19.399	-8.6	0	0	0	0	0	0	Bus59	-0.836	-0.670	32	78.04			
										Bus63	0.826	0.662	31	78.03			
										Bus62	0.016	0.000	0	79.29	-5.000		
Bus62	0.380	0.381	-1.3	0	0	0.010	0.008	0	0	Bus61	-0.010	-0.008	19	80.00			
Bus63	20.000	19.305	-8.7	0	0	0	0	0	0	Bus61	-0.826	-0.662	31	78.03			
										Bus65	0.822	0.659	31	78.02			
										Bus64	0.064	0.003	0	79.92	-5.000		
Bus64	0.380	0.386	-8.7	0	0	0	0	0	0	Bus63	-0.064	-0.003	6	80.00			
Bus65	20.000	19.236	-8.7	0	0	0	0	0	0	Bus63	-0.820	-0.656	31	78.10			
										Bus67	0.814	0.651	31	78.00			
										Bus66	0.008	0.005	0	79.29	-5.000		
Bus66	0.380	0.382	-1.1	0	0	0.006	0.005	0	0	Bus65	-0.008	-0.005	11	80.00			
Bus67	20.000	19.187	-8.8	0	0	0	0	0	0	Bus65	-0.812	-0.649	31	78.13			
										Bus69	0.763	0.610	29	78.12			
										Bus68	0.030	0.040	1	78.24	-5.000		
Bus68	0.380	0.372	-2.4	0	0	0.049	0.037	0	0	Bus67	-0.049	-0.037	69	80.00			
Bus69	20.000	19.186	-8.8	0	0	0	0	0	0	Bus67	-0.762	-0.609	29	78.13			
										Bus71	0.704	0.562	27	78.13			
										Bus70	0.009	0.047	2	78.12	-10.000		
Bus70	0.380	0.382	-2.3	0	0	0.056	0.044	0	0	Bus69	-0.056	-0.044	107	80.00			
Bus71	20.000	19.175	-8.8	0	0	0	0	0	0	Bus69	-0.703	-0.561	27	78.15			
										Bus73	0.691	0.552	26	78.13			
										Bus72	0.012	0.010	0	78.14	-5.000		
Bus72	0.380	0.378	-1.8	0	0	0.012	0.009	0	0	Bus71	-0.012	-0.009	21	80.00			
Bus73	20.000	19.127	-8.8	0	0	0	0	0	0	Bus71	-0.690	-0.550	26	78.17			
										Bus75	0.680	0.548	26	78.18			
										Bus74	0.003	0.003	0	79.32	-5.000		
Bus74	0.380	0.389	-9.3	0	0	0	0	0	0	Bus73	-0.003	-0.003	8	80.00			
Bus75	20.000	19.127	-8.8	0	0	0	0	0	0	Bus73	-0.680	-0.547	26	78.17			
										Bus77	0.662	0.528	25	78.18			
										Bus76	0.025	0.019	0	78.43	-10.000		
Bus76	0.380	0.391	-2.3	0	0	0.024	0.018	0	0	Bus75	-0.024	-0.018	44	80.00			
Bus77	20.000	19.123	-8.8	0	0	0	0	0	0	Bus75	-0.662	-0.528	25	78.17			
										Bus79	0.611	0.489	23	78.15			

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	% PF	% Tap	
Bus76	0.380	0.382	-2.3	0	0	0.050	0.038	0	0	Bus76	0.051	0.040	1	78.28	-10.000	
Bus79	20.000	19.115	-8.8	0	0	0	0	0	0	Bus77	-0.050	-0.038	62	80.00		
Bus80	0.380	0.380	-2.2	0	0	0.041	0.031	0	0	Bus77	-0.611	-0.487	25	78.18		
Bus81	20.000	19.112	-8.8	0	0	0	0	0	0	Bus81	0.509	0.455	22	78.13		
Bus82	0.380	0.390	-2.7	0	0	0.030	0.022	0	0	Bus80	0.642	0.033	1	78.28	-8.000	
Bus83	20.000	19.104	-8.9	0	0	0	0	0	0	Bus79	-0.941	-0.031	78	80.00		
Bus84	0.380	0.379	-1.3	0	0	0.007	0.006	0	0	Bus79	-0.569	-0.455	22	78.13		
Bus85	20.000	19.096	-8.9	0	0	0	0	0	0	Bus83	0.530	0.430	20	78.13		
Bus86	0.380	0.393	-2.2	0	0	0.045	0.033	0	0	Bus82	0.030	0.024	1	78.05	-10.000	
Bus87	20.000	19.081	-8.9	0	0	0	0	0	0	Bus81	-0.020	-0.022	55	80.00		
Bus88	0.380	0.382	-2.3	0	0	0.047	0.035	0	0	Bus81	-0.339	-0.430	20	78.14		
Bus89	20.000	19.068	-8.9	0	0	0	0	0	0	Bus85	0.531	0.425	20	78.12		
Bus90	0.380	0.381	-2.1	0	0	0.029	0.019	0	0	Bus84	0.007	0.006	0	79.48	-5.000	
Bus91	20.000	19.057	-8.9	0	0	0	0	0	0	Bus83	-0.007	-0.006	14	80.00		
Bus92	0.380	0.376	-1.7	0	0	0.026	0.019	0	0	Bus85	-0.531	-0.424	20	78.13		
Bus93	20.000	19.043	-8.9	0	0	0	0	0	0	Bus87	0.486	0.380	18	78.09		
Bus94	0.380	0.377	-2.0	0	0	0.017	0.013	0	0	Bus86	0.045	0.035	1	78.57	-10.000	
Bus95	20.000	19.030	-8.9	0	0	0	0	0	0	Bus85	-0.045	-0.033	81	80.00		
Bus96	0.380	0.390	-2.6	0	0	0.029	0.021	0	0	Bus85	-0.486	-0.380	18	78.10		
Bus97	20.000	19.013	-8.8	0	0	0	0	0	0	Bus89	0.044	0.034	1	78.98		
Bus98	0.380	0.383	-2.1	0	0	0.022	0.017	0	0	Bus95	0.305	0.317	15	77.95		
Bus99	20.000	19.076	-8.9	0	0	0	0	0	0	Bus88	0.047	0.037	1	78.49	-10.000	
Bus100	0.380	0.381	-3.8	0	0	0.092	0.069	0	0	Bus87	-0.047	-0.039	85	80.00		
Bus101	20.000	19.072	-8.9	0	0	0	0	0	0	Bus87	-0.044	-0.034	1	78.99		
										Bus91	0.043	0.034	1	78.96		
										Bus90	0.001	0.001	0	79.92	-5.000	
										Bus89	-0.001	-0.001	2	80.00		
										Bus89	-0.041	-0.034	1	78.96		
										Bus92	0.017	0.014	0	78.76		
										Bus92	0.026	0.020	0	79.10	-5.000	
										Bus91	-0.026	-0.019	49	80.00		
										Bus91	-0.017	-0.014	0	78.76		
										Bus94	0.017	0.014	0	78.76	-5.000	
										Bus93	-0.017	-0.013	33	80.00		
										Bus87	-0.705	-0.317	15	77.95		
										Bus97	0.386	0.294	14	77.94		
										Bus96	0.029	0.023	1	78.14	-10.000	
										Bus95	-0.029	-0.021	32	80.00		
										Bus95	-0.386	-0.294	14	77.95		
										Bus99	0.344	0.277	13	77.91		
										Bus98	0.022	0.018	0	78.57	-10.000	
										Bus97	-0.022	-0.017	40	80.00		
										Bus97	-0.344	-0.276	13	77.91		
										Bus101	0.250	0.199	9	78.30		
										Bus100	0.094	0.079	3	76.99	-10.000	
										Bus99	-0.092	-0.069	174	80.00		
										Bus99	-0.250	-0.199	9	78.30		

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Bus		Voltage			Generation		Motor Load		Static Load		Load Flow					XFMR	
ID	kV	kV	Ang	MW	Mvar	MW	Mvar	MW	Mvar	ID	MW	Mvar	Ang	% PF	% Tap		
										Bus03	0.220	0.176	8	78.21			
										Bus02	0.030	0.023	1	78.96	-5.000		
Bus02	0.380	0.374	-1.8	0	0	0.029	0.022	0	0	Bus01	-0.029	-0.022	56	80.00			
Bus03	20.000	19.984	-0.9	0	0	0	0	0	0	Bus01	-0.220	-0.176	8	78.22			
										Bus05	0.108	0.086	4	78.25			
										Bus04	0.112	0.090	4	78.19	-10.000		
Bus04	0.380	0.390	-2.8	0	0	0.111	0.083	0	0	Bus03	-0.111	-0.083	205	80.00			
Bus05	20.000	19.968	-0.9	0	0	0	0	0	0	Bus03	-0.108	-0.086	4	78.25			
										Bus07	0.045	0.036	1	78.64			
										Bus06	0.063	0.050	2	77.96	-10.000		
Bus06	0.380	0.368	-2.8	0	0	0.062	0.047	0	0	Bus05	-0.062	-0.047	115	80.00			
Bus07	20.000	19.968	-0.9	0	0	0	0	0	0	Bus05	-0.045	-0.036	1	78.64			
										Bus09	0.042	0.033	1	78.37			
										Bus08	0.063	0.052	0	79.55	-5.000		
Bus08	0.380	0.378	-1.3	0	0	0	0	0	0	Bus07	-0.063	-0.052	0	80.00			
Bus09	20.000	19.968	-0.9	0	0	0	0	0	0	Bus07	-0.042	-0.033	1	78.38			
										Bus11	0.022	0.018	0	78.56			
										Bus10	0.020	0.015	0	78.40	-5.000		
Bus10	0.380	0.372	-2.2	0	0	0.020	0.015	0	0	Bus09	-0.020	-0.015	37	80.00			
Bus11	20.000	19.965	-0.9	0	0	0	0	0	0	Bus09	-0.022	-0.018	0	78.56			
										Bus12	0.022	0.018	0	78.56	-10.000		
Bus12	0.380	0.392	-2.2	0	0	0.022	0.017	0	0	Bus11	-0.022	-0.017	41	80.00			

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)
 * Indicates a bus with a load mismatch of more than 0.1 MVA

