Data for Modified Integrated IEEE-39 System and IEEE-33 System

Lizhou Jiang
(Email: jlz1996@stu.xjtu.edu.cn)

Data for IEEE-39 Transmission System

I. Bus data

No.	Power demand (MW)	No.	Power demand (MW)	No.	Power demand (MW)
1	97.6	14	0	27	281
2	0	15	320	28	206
3	322	16	329	29	283.5
4	0	17	0	30	0
5	0	18	158	31	9.2
6	0	19	0	32	0
7	233.8	20	0	33	0
8	0	21	274	34	0
9	6.5	22	0	35	0
10	0	23	247.5	36	0
11	0	24	0	37	0
12	8.53	25	224	38	0
13	0	26	139	39	0

II. Generator data

No.	Bus	P_{max}(MW)	P_{min}(MW)
1	30	250	50
2	33	600	120
3	34	500	100
4	35	650	130
5	36	560	112
6	37	540	108

III. Line data

No.	From bus	To bus	X (Ω)	P_{max}(MW)
1	1	2	0.0411	600
2	1	39	0.025	1000
3	2	3	0.0151	500
4	2	25	0.0086	500
5	2	30	0.0181	900
6	3	4	0.0213	500
7	3	18	0.0133	500
8	4	5	0.0128	600

9	4	14	0.0129	500
10	5	6	0.0026	1200
11	5	8	0.0112	900
12	6	7	0.0092	900
13	6	11	0.0082	480
14	6	31	0.025	1800
15	7	8	0.0046	900
16	8	9	0.0363	900
17	9	39	0.025	900
18	10	11	0.0043	600
19	10	13	0.0043	600
20	10	32	0.02	900
21	12	11	0.0435	500
22	12	13	0.0435	500
23	13	14	0.0101	600
24	14	15	0.0217	600
25	15	16	0.0094	600
26	16	17	0.0089	600
27	16	19	0.0195	600
28	16	21	0.0135	600
29	16	24	0.0059	600
30	17	18	0.0082	600
31	17	27	0.0173	600
32	19	20	0.0138	900
33	19	33	0.0142	900
34	20	34	0.018	900
35	21	22	0.014	900
36	22	23	0.0096	600
37	22	35	0.0143	900
38	23	24	0.035	600
39	23	36	0.0272	900
40	25	26	0.0323	600
41	25	37	0.0232	900
42	26	27	0.0147	600
43	26	28	0.0474	600
44	26	29	0.0625	600
45	28	29	0.0151	600
46	29	38	0.0156	1200

Data for IEEE-33 Distribution System

I. Bus data

No.	Active power demand (kW)	Reactive power demand (kVar)	Vmax (p.u.)	Vmin (p.u.)
1	0	0	1.1	0.9
2	100	60	1.1	0.9
3	90	40	1.1	0.9
4	120	80	1.1	0.9
5	60	30	1.1	0.9
6	60	20	1.1	0.9
7	200	100	1.1	0.9
8	200	100	1.1	0.9
9	60	20	1.1	0.9
10	60	20	1.1	0.9
11	45	30	1.1	0.9
12	60	35	1.1	0.9
13	60	35	1.1	0.9
14	120	80	1.1	0.9
15	60	10	1.1	0.9
16	60	20	1.1	0.9
17	60	20	1.1	0.9
18	90	40	1.1	0.9
19	90	40	1.1	0.9
20	90	40	1.1	0.9
21	90	40	1.1	0.9
22	90	40	1.1	0.9
23	90	50	1.1	0.9
24	420	200	1.1	0.9
25	420	200	1.1	0.9
26	60	25	1.1	0.9
27	60	25	1.1	0.9
28	60	20	1.1	0.9
29	120	70	1.1	0.9
30	200	200	1.1	0.9
31	150	70	1.1	0.9
32	210	100	1.1	0.9
33	60	40	1.1	0.9

II. Substation data

No.	Bus in distribution system	Bus in transmission system
1	1	9

III. Distributed generator data

No.	Bus	P_{max}(kW)	P_{min}(kW)	Q_{max}(kVar)	P_{min}(kVar)
1	12	500	150	400	0
2	24	400	50	400	0
3	33	500	150	400	0

4	6	400	50	400	0

IV. Line data

No.	From bus	To bus	R (Ω)	X (Ω)	P_{max}(MW)	Q_{max}(MVar)
1	1	2	0.0922	0.047	4	4
2	2	3	0.493	0.2511	4	4
3	3	4	0.366	0.1864	4	4
4	4	5	0.3811	0.1941	4	4
5	5	6	0.819	0.707	4	4
6	6	7	0.1872	0.6188	4	4
7	7	8	0.7114	0.2351	4	4
8	8	9	1.03	0.74	4	4
9	9	10	1.044	0.74	4	4
10	10	11	0.1966	0.065	4	4
11	11	12	0.3744	0.1238	4	4
12	12	13	1.468	1.155	4	4
13	13	14	0.5416	0.7129	4	4
14	14	15	0.591	0.526	4	4
15	15	16	0.7463	0.545	4	4
16	16	17	1.289	1.721	4	4
17	17	18	0.732	0.574	4	4
18	2	19	0.164	0.1565	4	4
19	19	20	1.5042	1.3554	4	4
20	20	21	0.4095	0.4784	4	4
21	21	22	0.7089	0.9373	4	4
22	3	23	0.4512	0.3083	4	4
23	23	24	0.898	0.7091	4	4
24	24	25	0.896	0.7011	4	4
25	6	26	0.203	0.1034	4	4
26	26	27	0.2842	0.1447	4	4
27	27	28	1.059	0.9337	4	4
28	28	29	0.8042	0.7006	4	4
29	29	30	0.5075	0.2585	4	4
30	30	31	0.9744	0.963	4	4
31	31	32	0.3105	0.3619	4	4
32	32	33	0.341	0.5302	4	4
33	21	8	2	2	4	4
34	9	14	2	2	4	4
35	12	22	2	2	4	4
36	18	33	0.5	0.5	4	4
37	25	29	0.5	0.5	4	4

Topology for Transmission-Distribution System