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APPENDIX

APPENDIX A

Table A.1 Bus data of Southern Thailand transmission network

Bus	Type	Pd	Qd	Gs	Bs	Area	Vm	Va	baseKV	Zone	Vmax	Vmin	HVDC
1	3	305.9	72.1	0	0	1	1.02	-7.9	345	1	1.1	0.9	0
2	2	77.9	18.7	0	0	1	1.03	0	345	1	1.1	0.9	0
3	2	8.7	3.4	0	0	1	1.03	0	345	1	1.1	0.9	0
4	2	52.9	26.5	0	0	1	1.03	0	345	1	1.1	0.9	0
5	2	0	0	0	0	1	1.01	0	345	1	1.1	0.9	0
6	1	0	0	0	0	1	1.01	0	345	1	1.1	0.9	1
7	1	26.6	13.7	0	4.1	1	1	0	345	1	1.1	0.9	0
8	1	55.7	13	0	6	1	1	0	345	1	1.1	0.9	0
9	1	23.8	9.2	0	0	1	1	0	345	1	1.1	0.9	0
10	2	169.6	89.8	0	0	1	1	0	345	1	1.1	0.9	0
11	1	51.5	4.3	0	16	1	1	0	345	1	1.1	0.9	0
12	1	40.8	17.2	0	0	1	1	0	345	1	1.1	0.9	0
13	1	45.1	19.5	0	21.7	1	1	0	345	1	1.1	0.9	0
14	1	139	75.8	0	86.5	1	1	0	345	1	1.1	0.9	0
15	1	52	25.2	0	11.8	1	1	0	345	1	1.1	0.9	0
16	1	36.8	17.9	0	4.4	1	1	0	345	1	1.1	0.9	0
17	1	119.9	52.9	0	0	1	1	0	345	1	1.1	0.9	0
18	1	101	8	0	23.2	1	1	0	345	1	1.1	0.9	0
19	1	123.2	46.6	0	0	1	1	0	345	1	1.1	0.9	0
20	1	41	14.4	0	0	1	1	0	345	1	1.1	0.9	0
21	1	88.3	44.8	0	37.2	1	1	0	345	1	1.1	0.9	0
22	1	298.7	108.1	0	0	1	1	0	345	1	1.1	0.9	0
23	1	52.8	10.6	0	0	1	1	0	345	1	1.1	0.9	0
24	1	56.6	30.9	0	0	1	1	0	345	1	1.1	0.9	0
25	1	59.3	25.7	0	0	1	1	0	345	1	1.1	0.9	0
26	1	56.1	8.7	0	0	1	1	0	345	1	1.1	0.9	0
27	1	29.6	8.3	0	0	1	1	0	345	1	1.1	0.9	0
28	1	103	6.7	0	9.1	1	1	0	345	1	1.1	0.9	0

Table A.2 Generator data of the Southern Thailand transmission network

Bus	Pg	Qg	Qmax	Qmin	Vg	MBase	Sta	Pmax	Pmin
1	0	0	5000	-500	1.02	100	1	1640	10
2	800	0	5000	-100	1.03	100	1	900	10
3	240	0	5000	-100	1.03	100	1	500	10
4	300	0	5000	-100	1.03	100	1	500	10
5	60.2	0	5000	-500	1.01	100	1	100	10

Table A.3 HVDC data of the Southern Thailand transmission network

Bus	Interface	Idc	Alfa	Gamma	Tap_min	Tap_max	Edi
6	2	2.57	0.2618	0.3491	0.95	1.00	0.75

Table A.4 Branch data of the Southern Thailand transmission network

Branch	fbus	Tbus	R	X	B	rateA	rateB	rateC	Ratio	angle	sta
1	1	18	0.00551	0.04335	0.3268	860	860	860	0	0	1
2	1	15	0.00832	0.055455	0.057	646.8	646.8	646.8	0	0	1
3	18	16	0.02913	0.08564	0.0111	250	250	250	0	0	1
4	18	27	0.00431	0.033915	0.2556	858.8	858.8	858.8	0	0	1
5	18	7	0.02588	0.07609	0.0099	119.5	119.5	119.5	0	0	1
6	15	16	0.03245	0.09634	0.012	117.5	117.5	117.5	0	0	1
7	27	28	0.003098	0.018385	0.21952	858.8	858.8	858.8	0	0	1
8	27	7	0.06343	0.18649	0.0243	119.5	119.5	119.5	0	0	1
9	28	8	0.027365	0.08046	0.042	239	259.4	107.8	0	0	1
10	28	10	0.014355	0.11293	0.8512	858.8	953.6	575.2	0	0	1
11	8	9	0.05283	0.15532	0.0202	119.5	129.7	1.3	0	0	1
12	8	10	0.05147	0.15132	0.0197	119.5	129.7	13.4	0	0	1
13	9	10	0.00136	0.00401	0.0005	119.5	129.7	1.3	0	0	1
14	10	11	0.21605	0.37616	0.0394	82.1	88.6	114.1	0	0	1
15	10	3	0.00256	0.020145	0.1518	858.8	953.6	102.6	0	0	1
16	10	17	0.00304	0.029425	0.5704	1718	1907.4	244	0	0	1
17	10	2	0.003815	0.03003	0.2264	858.8	953.6	153	0	0	1
18	11	12	0.08537	0.14551	0.0158	82.1	88.6	44.9	0	0	1
19	12	13	0.03853	0.11449	0.0584	239	259.4	151.8	0	0	1
20	12	14	0.01894	0.12654	0.0709	250	250	250	0	0	1
21	12	3	0.015401	0.005493	0.1216	561.2	611.2	304	0	0	1
22	12	4	0.18486	0.31872	0.034	82.1	88.6	97.5	0	0	1
23	13	14	0.01816	0.05338	0.0069	250	250	250	0	0	1
24	4	17	0.00389	0.02813	0.0256	250	250	250	0	0	1
25	4	21	0.16073	0.27696	0.0295	82.1	88.6	84.7	0	0	1
26	17	19	0.01009	0.07307	0.0406	429.4	476.8	102.2	0	0	1
27	17	21	0.05018	0.14754	0.0192	119.5	129.7	49.4	0	0	1
28	17	6	0.005085	0.052945	0.8942	1717.8	1907.4	410.2	0	0	1
29	2	19	0.00487	0.03831	0.2888	858	953.6	195.2	0	0	1
30	19	20	0.00447	0.03518	0.2652	858	953.6	179.2	0	0	1
31	20	21	0.12065	0.20573	0.0224	82.1	88.6	63.5	0	0	1
32	20	22	0.004395	0.03459	0.2608	858	953.6	176.2	0	0	1
33	20	23	0.15526	0.26493	0.0288	82.1	88.6	81.8	0	0	1
34	22	23	0.005117	0.012718	0.0064	215.9	233.9	16.7	0	0	1
35	22	24	0.04821	0.14174	0.0738	239	259.4	190	0	0	1
36	22	6	0.00075	0.007785	0.1316	1718	1907.4	60.4	0	0	1
37	24	25	0.03994	0.11866	0.0151	119.5	129.7	39.4	0	0	1
38	25	26	0.08739	0.18828	0.0227	96.4	104.2	60.8	0	0	1
39	25	5	0.000395	0.002645	0.00272	250	250	250	0	0	1
40	26	5	0.055	0.18	0.056	250	250	250	0	0	1
41	5	6	0.003148	0.030467	0.59066	250	250	250	0	0	1

BIOGRAPHY

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