

ตารางที่ 8.16 ผลการทดสอบการจัดกำลังการผลิตในลักษณะสเตติกของระบบไฟฟ้า IEEE 118 Bus จำนวน 100 ครั้ง

Unit	MZDPAs		AOGAs (With ESAs)				AONGAs (With ESAs)			
	MW	Cost (Baht/h)	MW (Best)	Cost (Baht/h) (Best)	MW (Worst)	Cost (Baht/h) (Worst)	MW (Best)	Cost (Baht/h) (Best)	MW (Worst)	Cost (Baht/h) (Worst)
G1 (B10)	700.00	722156.94	698.75	721667.63	664.18	708119.60	699.93	722128.13	699.93	722128.13
G2 (B12)	700.00	727154.94	677.37	726336.25	698.24	727111.90	699.71	727147.94	697.66	727097.06
G3 (B25)	250.00	758853.56	250.04	758906.38	265.04	779549.80	250.00	758853.56	250.00	758853.56
G4 (B26)	500.00	812461.19	490.58	807523.38	456.20	789484.80	450.00	786226.19	450.00	786226.19
G5 (B46)	300.00	762251.38	306.84	768708.50	307.70	769521.10	300.00	762251.38	300.00	762251.38
G6 (B49)	200.17	716712.50	227.81	736783.88	201.60	717754.80	200.00	716592.00	200.00	716592.00
G7 (B54)	306.67	664001.94	307.23	664335.94	338.33	682998.10	300.00	660000.00	300.00	660000.00
G8 (B59)	300.00	780000.00	301.12	782021.50	300.83	781494.10	300.00	780000.00	300.00	780000.00
G9 (B61)	200.00	720000.00	200.20	720351.56	207.32	733183.60	200.00	720000.00	200.00	720000.00
G10 (B65)	382.35	687723.94	432.02	722501.44	433.96	723855.40	430.26	721270.63	451.36	736040.50
G11 (B66)	700.00	722156.94	694.02	719815.38	684.06	715935.20	699.92	722124.25	699.92	722124.25
G12 (B69)	700.00	727154.94	699.93	727153.19	695.61	727042.50	699.93	727153.19	699.93	727153.19
G13 (B80)	250.00	758853.56	250.00	758853.56	250.00	758853.60	250.00	758853.56	250.00	758853.56
G14 (B89)	365.49	741678.25	325.49	720503.75	358.27	737862.30	381.66	750221.94	362.62	740159.56
G15 (B100)	300.00	762251.38	300.00	762251.38	300.00	762251.40	300.00	762251.38	300.00	762251.38
G16 (B103)	200.00	716592.00	200.01	716598.00	200.06	716633.50	200.00	716592.00	200.00	716592.00
G17 (B111)	301.31	660785.13	323.23	673938.75	331.61	678967.10	331.16	678697.31	330.32	678192.31
Total	6655.99	12440788.56	6684.63	12488250.44	6693.01	12510619.00	6692.562	12470363	6691.72	12474515.06
CPU Time (sec.)	0.45053		9.23563		6.54996		13.55652		37.1246	

ตารางที่ 8.18 ผลการทดสอบการจัดกำลังการผลิตในลักษณะสแตติกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง

Unit	MZDPAs		AOGAs (With ESAs)				AONGAs (With ESAs)			
	MW	Cost (Baht/h)	MW (Best)	Cost (Baht/h) (Best)	MW (Worst)	Cost (Baht/h) (Worst)	MW (Best)	Cost (Baht/h) (Best)	MW (Worst)	Cost (Baht/h) (Worst)
KN-T1	69.38		70.00		70.00		70.00		70.00	
RPB-H1	78.95		79.00		79.00		79.00		79.00	
RPB-H2	78.95		79.00		79.00		79.00		79.00	
RPB-H3	78.95		79.00		79.00		79.00		79.00	
MM-T8	150.00	69615.50	150.00	69615.50	150.00	69615.50	150.00	69619.67	150.00	69615.50
MM-T9	150.00	69615.50	150.00	69615.50	150.00	69615.50	150.00	69615.50	150.00	69615.50
MM-T4	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61
MM-T5	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61
MM-T6	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61
MM-T7	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61	90.00	89432.61
SK-H4	111.97		112.00		112.00		112.00		112.00	
SK-H3	110.86		111.00		111.00		111.00		111.00	
SK-H2	101.94		102.00		102.00		102.00		102.00	
BB-H8	151.87		152.00		152.00		152.00		152.00	
BB-H7	114.96		115.00		115.00		115.00		115.00	
BB-H6	75.86		76.00		76.00		76.00		76.00	
BB-H4	75.86		76.00		76.00		76.00		76.00	
BB-H2	75.86		76.00		76.00		76.00		76.00	
NPO-C1	180.00	61059.68	180.00	61059.68	180.00	61059.68	180.00	61059.68	180.00	61059.68
IPT-C1	699.99		700.00		700.00		700.00		700.00	
BPK-C1	315.00	113139.75	315.00	113139.75	315.00	113139.75	315.00	113139.75	315.04	113153.31
BPK-T2	699.17	119421.35	568.00	98122.48	568.00	98122.48	568.00	98122.48	568.13	98143.52

ตารางที่ 8.18 ผลการทดสอบการจัดกำลังการผลิตในลักษณะสแตติกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

SB-C1	284.00	89058.61	284.00	89058.61	284.00	89058.61	284.00	89058.61	284.00	89058.61
SB-T1	140.00	32403.61	140.00	32403.61	190.93	39169.16	193.32	39489.86	178.28	37476.53
SB-T2	140.00	32403.61	140.00	32403.61	140.00	32403.61	217.76	42785.85	247.67	46860.48
SB-T3	140.00	35209.03	186.66	41282.56	314.66	58658.99	232.46	47379.62	219.30	45613.97
KHL-H3	87.96		88.00		88.00		88.00		88.00	
KHL-H2	87.96		88.00		88.00		88.00		88.00	
KHL-H1	87.96		88.00		88.00		88.00		88.00	
SNR-H1	119.92		120.00		120.00		120.00		120.00	
SNR-H2	119.92		120.00		120.00		120.00		120.00	
SNR-H3	119.92		120.00		120.00		120.00		120.00	
SNR-H4	179.99		180.00		180.00		180.00		180.00	
TN-H1	18.75		20.00		20.00		20.00		20.00	
TN-H2	18.75		20.00		20.00		20.00		20.00	
RB-T1	699.99		700.00		700.00		700.00		700.00	
RB-T2	699.99		700.00		700.00		700.00		700.00	
THB-H1	104.96		105.00		105.00		105.00		105.00	
THB-H2	104.96		105.00		105.00		105.00		105.00	
GCC-T1	89.93		90.00		90.00		90.00		90.00	
HH-H1	62.96		63.00		63.00		63.00		63.00	
HH-H2	62.96		63.00		63.00		63.00		63.00	
AEP-T1	89.93		90.00		90.00		90.00		90.00	
TPS-T1	24.49		25.00		25.00		25.00		25.00	
TTP-T1	8.75		10.00		10.00		10.00		10.00	
NPC-T1	31.78		32.00		32.00		32.00		32.00	
IP-T1	54.74		55.00		55.00		55.00		55.00	

ตารางที่ 8.18 ผลการทดสอบการจัดกำลังการผลิตในลักษณะสแต็คของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

IP-T2	54.74		55.00		55.00		55.00		55.00	
BCC-T1	89.93		90.00		90.00		90.00		90.00	
MTP-T1	59.62		60.00		60.00		60.00		60.00	
MTP-T2	59.62		60.00		60.00		60.00		60.00	
TCC-T1	89.93		90.00		90.00		90.00		90.00	
TCC-T2	89.93		90.00		90.00		90.00		90.00	
C0C0-T1	89.93		90.00		90.00		90.00		90.00	
C0C0-T2	89.93		90.00		90.00		90.00		90.00	
NPS-T1	89.93		90.00		90.00		90.00		90.00	
NPS-T2	89.93		90.00		90.00		90.00		90.00	
NPO-C2	180.00	61059.68	180.00	61059.68	180.00	61059.68	180.00	61059.68	180.00	61059.68
WN-C3	353.41	52046.07	429.19	61373.36	250.00	39053.94	250.00	39053.94	250.00	39053.94
KN-T2	69.38		70.00		70.00		70.00		70.00	
RY-C1	291.94		292.00		292.00		292.00		292.00	
RY-C4	291.94		292.00		292.00		292.00		292.00	
BB-H5	75.86		76.00		76.00		76.00		76.00	
BB-H3	75.86		76.00		76.00		76.00		76.00	
BB-H1	75.86		76.00		76.00		76.00		76.00	
BLCF-C1	672.92		673.00		673.00		673.00		673.00	
BLCF-C2	672.92		673.00		673.00		673.00		673.00	
EPEC-C1	349.84		350.00		350.00		350.00		350.00	
GULF-C1	349.84		350.00		350.00		350.00		350.00	
GULF-C2	349.84		349.75		348.12		349.99		348.03	
Total	11873.21	1092762.83	11874.60	1086864.77	11872.71	1088687.35	11872.53	1088115.08	11872.45	1088441.17
CPU Time	49.210762		56.7475586		42.7546387		111.132278		72.182373	

*** หมายเหตุ หน่วยผลิตไฟฟ้าพลังน้ำและหน่วยผลิตไฟฟ้าของบริษัทเอกชนถูกกำหนดให้เดินเครื่องที่กำลังการผลิตสูงสุด

ตารางที่ 8.20 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AOGAs)

Trial	Period 1		Period 2		Period 3		Period 4		Period 5		Period 6		Prod. cost (MBaht)	Iteration	Comp. time (sec.)
	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)			
1	418.42	404.56	431.96	386.49	426.35	389.18	445.43	373.77	429.79	395.94	434.46	395.94	0.802117	179	0.5488
2	412.09	411.29	443.83	373.90	422.48	393.39	429.61	390.54	426.63	399.30	433.50	397.00	0.802217	178	0.5451
3	415.25	407.93	419.66	399.66	441.20	373.26	476.63	340.80	454.22	370.01	434.80	395.47	0.802642	159	0.4888
4	413.14	410.17	421.86	397.32	457.37	356.11	421.61	399.24	434.72	390.89	435.25	394.87	0.802292	170	0.5447
5	419.56	403.34	424.05	394.93	417.65	398.42	424.78	395.84	443.07	381.72	432.79	397.79	0.8019	196	0.6041
6	417.89	405.12	453.76	363.31	439.62	375.17	423.98	396.47	436.74	388.61	449.23	380.11	0.802392	159	0.4990
7	413.14	410.17	425.90	393.00	464.05	349.06	426.47	394.02	430.70	395.23	442.93	386.64	0.802433	184	0.5661
8	419.91	402.97	455.96	360.96	416.42	399.96	435.50	384.17	434.80	390.52	447.38	382.23	0.802242	166	0.5066
9	414.20	409.05	419.75	399.57	423.89	391.72	433.39	386.68	450.10	374.27	443.08	386.77	0.802258	181	0.5648
10	410.42	413.07	421.68	397.53	431.71	383.39	423.37	397.36	432.34	393.25	449.14	380.25	0.802275	202	0.6467
11	408.22	415.42	447.08	370.47	435.58	379.43	422.14	398.49	438.50	386.71	439.91	390.06	0.802517	152	0.4694
12	417.89	405.12	451.30	365.92	442.96	371.60	429.70	390.39	427.51	398.50	437.54	392.54	0.802283	165	0.5046
13	417.71	405.31	453.76	363.31	425.56	390.17	444.64	374.46	435.33	390.02	447.91	381.61	0.802425	164	0.5009
14	418.59	404.37	430.91	387.61	417.12	399.03	444.11	375.18	443.24	381.53	437.10	393.19	0.80215	166	0.5180
15	419.82	403.06	441.10	376.74	430.48	384.83	424.25	396.28	430.41	395.31	442.99	386.82	0.802092	270	0.8387
16	418.95	404.00	441.98	375.81	435.05	379.96	460.99	357.20	426.20	399.85	432.18	398.31	0.802317	189	0.5792
17	412.79	410.55	419.92	399.39	451.48	362.34	429.08	391.27	434.80	390.76	441.32	388.44	0.802342	164	0.5128
18	419.82	403.06	456.66	360.22	417.21	399.12	436.29	383.33	427.16	398.70	439.74	390.38	0.80215	195	0.5979
19	416.84	406.24	430.91	387.63	454.65	359.05	435.32	384.54	442.36	382.71	457.75	370.94	0.80255	167	0.5195
20	419.65	403.25	437.68	380.39	421.60	394.29	421.61	399.12	445.44	379.22	465.05	363.42	0.802258	216	0.6709
21	419.82	403.06	444.53	373.10	416.50	399.79	435.85	383.88	437.97	387.15	450.55	378.86	0.802208	171	0.5221
22	419.91	402.97	437.41	380.67	431.88	383.30	450.88	367.95	428.83	397.01	436.66	393.55	0.802208	237	0.7390
23	419.82	403.06	452.44	364.69	419.32	396.83	438.40	381.11	437.88	387.26	438.86	391.30	0.802217	160	0.4888
24	419.82	403.06	449.98	367.30	436.19	378.80	421.26	399.41	444.12	380.72	443.34	386.40	0.802275	175	0.5484
25	419.82	403.06	451.74	365.44	425.56	390.16	446.75	372.24	435.60	389.74	441.58	388.35	0.802317	173	0.5347
26	411.04	412.42	432.84	385.61	421.16	394.72	448.77	370.22	433.31	392.15	443.78	386.04	0.802417	173	0.5438

ตารางที่ 8.20 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AOGAs) (ต่อ)

27	417.36	405.68	454.20	362.84	427.40	388.20	434.88	384.84	428.56	397.26	435.52	394.81	0.802242	164	0.5047
28	418.77	404.18	458.68	358.08	452.98	361.00	449.38	369.39	429.00	396.97	435.43	394.71	0.802533	158	0.4965
29	419.82	403.06	455.61	361.34	427.23	388.40	446.31	372.68	436.91	388.34	449.49	379.91	0.802425	198	0.6059
30	417.89	405.12	442.77	374.98	431.80	383.43	428.29	391.95	427.42	398.52	458.19	370.63	0.802283	169	0.5270
31	418.86	404.09	423.88	395.12	430.48	384.71	423.54	397.16	426.28	399.73	460.21	368.49	0.802083	281	0.8656
32	417.01	406.05	452.97	364.15	452.89	361.05	428.29	391.88	430.15	395.75	444.04	385.53	0.80245	169	0.5166
33	419.74	403.16	419.31	400.00	453.68	360.00	427.94	392.50	427.25	398.86	439.82	390.02	0.802083	163	0.4985
34	419.30	403.62	451.83	365.35	448.23	365.99	423.37	397.14	433.05	392.62	443.52	386.13	0.802325	177	0.5641
35	414.99	408.21	436.53	381.64	417.47	398.70	426.88	393.50	432.52	392.97	434.11	396.38	0.802075	164	0.5024
36	417.45	405.59	421.94	397.20	428.02	387.33	449.03	370.01	431.38	394.26	434.38	396.02	0.802125	182	0.5689
37	419.82	403.06	455.87	361.06	426.26	389.43	445.34	373.70	433.40	392.09	445.98	383.66	0.802358	196	0.6004
38	418.24	404.74	421.06	398.13	448.23	365.80	460.72	357.62	439.84	385.36	434.75	395.47	0.802392	154	0.4717
39	418.59	404.37	421.77	397.38	423.10	392.58	447.36	371.79	432.61	392.91	443.69	386.12	0.802117	167	0.5159
40	417.71	405.31	430.73	387.81	435.14	379.79	445.08	374.16	431.46	394.22	430.77	399.82	0.802175	177	0.5433
41	419.82	403.06	455.34	361.61	417.65	398.64	426.97	393.27	426.89	398.98	438.86	391.31	0.802067	176	0.5517
42	416.31	406.80	430.82	387.72	451.31	362.59	423.46	397.20	427.60	398.46	449.93	379.27	0.802292	168	0.5270
43	419.82	403.06	420.10	399.15	459.75	353.58	430.93	389.30	430.23	395.70	447.03	382.30	0.802225	190	0.5857
44	419.82	403.06	448.75	368.61	434.61	380.47	452.37	366.28	441.84	383.14	438.33	391.75	0.802425	169	0.5275
45	419.12	403.81	431.70	386.77	467.04	345.93	436.08	383.73	464.65	359.08	437.49	392.41	0.8026	161	0.4945
46	419.82	403.06	452.44	364.69	424.24	391.57	443.32	375.87	433.49	391.98	446.06	383.58	0.802308	169	0.5321
47	412.79	410.55	426.43	392.44	418.26	397.78	426.27	394.23	426.54	399.36	432.53	398.07	0.802008	212	0.6535
48	419.47	403.44	429.68	388.92	427.49	387.94	424.07	396.55	429.09	396.70	441.58	388.34	0.801975	188	0.5828
49	419.30	403.62	454.38	362.64	448.06	366.20	432.95	386.90	427.51	398.54	441.41	388.38	0.802358	158	0.4829
50	419.82	403.06	455.78	361.15	449.90	364.24	420.73	399.93	434.10	391.50	446.68	382.75	0.802367	163	0.5108
51	419.82	403.06	455.78	361.15	416.86	399.49	435.94	383.71	435.42	389.87	447.91	381.67	0.802258	160	0.4888
52	419.65	403.25	429.77	388.83	423.71	391.98	445.25	373.98	457.22	366.71	433.23	397.27	0.802242	180	0.5649
53	412.79	410.55	431.00	387.56	470.47	342.30	430.02	390.19	431.09	394.86	435.05	394.99	0.8025	177	0.5473
54	417.71	405.31	427.83	390.90	454.12	359.59	421.52	399.29	439.90	385.34	462.94	365.44	0.802417	166	0.5187

ตารางที่ 8.20 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AOGAs) (ต่อ)

55	419.47	403.44	435.30	382.92	418.00	398.12	457.73	360.69	461.96	361.63	432.60	398.00	0.802367	166	0.5092
56	413.85	409.42	421.06	398.16	425.91	389.57	455.01	363.67	440.43	384.58	442.90	386.94	0.802375	160	0.4980
57	419.82	403.06	455.96	360.96	448.85	365.37	428.55	391.58	427.86	398.16	440.44	389.40	0.802325	197	0.6044
58	419.82	403.06	458.07	358.73	425.64	390.10	455.98	362.40	432.78	392.74	432.88	397.64	0.802358	163	0.5095
59	418.07	404.93	454.55	362.47	443.75	370.78	441.74	377.54	431.46	394.28	448.17	381.20	0.8025	156	0.4777
60	413.14	410.17	431.08	387.47	418.61	397.44	424.60	395.98	426.89	398.99	450.99	378.38	0.802158	168	0.5247
61	419.82	403.06	455.78	361.15	427.40	388.21	446.48	372.49	437.09	388.16	448.26	381.22	0.802417	189	0.5803
62	414.20	409.05	430.47	388.11	444.72	369.59	436.55	383.23	430.32	395.50	435.08	395.15	0.802308	166	0.5179
63	412.44	410.92	431.08	387.47	422.92	392.83	432.25	387.82	440.43	384.56	444.57	385.18	0.802317	162	0.4983
64	419.82	403.06	441.19	376.65	424.59	391.12	436.64	383.06	432.96	392.55	439.82	390.23	0.802133	162	0.5054
65	407.61	416.07	428.71	390.04	425.64	389.90	435.85	383.99	426.46	399.51	434.20	396.23	0.802308	179	0.5694
66	419.82	403.06	432.14	386.29	429.60	385.71	456.77	361.73	473.48	349.51	432.52	397.99	0.802492	168	0.5138
67	408.40	415.23	424.93	394.07	418.53	397.49	449.56	369.43	448.87	375.55	431.47	399.19	0.80245	184	0.5618
68	419.74	403.16	422.82	396.24	440.67	373.85	455.63	363.01	451.77	372.61	430.60	399.97	0.802325	177	0.5483
69	419.82	403.06	456.66	360.22	430.21	385.21	425.04	395.32	426.63	399.35	439.56	390.47	0.802158	188	0.5898
70	419.82	403.06	455.61	361.34	417.56	398.73	436.64	382.96	435.95	389.31	434.46	396.01	0.802167	191	0.5846
71	411.91	411.48	420.98	398.27	416.59	399.53	428.55	391.83	426.72	399.16	435.34	395.07	0.802025	169	0.5286
72	419.82	403.06	441.46	376.37	425.21	390.46	444.29	374.92	443.59	381.21	433.85	396.61	0.802225	200	0.6225
73	419.82	403.06	456.66	360.22	433.91	381.28	448.77	370.06	445.09	379.67	433.58	396.82	0.802442	180	0.5523
74	419.82	403.06	440.40	377.49	478.29	334.10	438.52	381.07	428.68	397.49	441.26	388.32	0.802517	174	0.5419
75	419.82	403.06	455.96	360.96	416.50	399.87	435.59	384.08	426.19	399.73	438.77	391.42	0.802117	187	0.5716
76	396.27	428.17	420.45	398.95	419.93	395.95	426.36	394.18	447.99	376.49	438.24	391.95	0.80265	152	0.4760
77	419.82	403.06	426.25	392.58	452.36	361.45	421.17	399.68	452.12	372.31	453.01	376.00	0.80235	191	0.5868
78	419.47	403.44	435.21	383.02	417.91	398.22	453.34	365.35	426.02	399.92	442.81	387.09	0.802142	173	0.5408
79	411.39	412.04	444.53	373.15	447.35	366.88	425.39	395.04	432.17	393.55	431.47	398.98	0.802417	174	0.5440
80	417.19	405.87	427.30	391.47	419.40	396.56	424.34	396.29	450.98	373.31	438.51	391.68	0.8021	164	0.5007
81	419.56	403.34	428.45	390.23	423.71	391.97	462.48	355.70	445.39	379.29	454.10	375.04	0.802425	176	0.5421
82	417.36	405.68	446.82	370.68	440.94	373.72	420.91	399.81	427.42	398.58	434.55	395.74	0.802167	190	0.5916

ตารางที่ 8.20 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AOGAs) (ต่อ)

83	419.30	403.62	454.73	362.27	425.82	389.89	444.90	374.18	444.21	380.56	434.29	396.13	0.802358	179	0.5504
84	419.82	403.06	455.87	361.06	426.96	388.68	443.23	375.94	442.54	382.34	455.12	373.93	0.802483	158	0.4950
85	418.77	404.18	437.24	380.87	416.68	399.55	436.90	382.81	430.59	395.03	441.85	388.13	0.802075	184	0.5634
86	411.12	412.32	419.57	399.78	421.43	394.35	430.75	389.50	453.53	370.61	441.76	388.19	0.802325	168	0.5247
87	419.21	403.72	430.82	387.70	421.78	394.05	451.41	367.43	438.67	386.43	430.95	399.73	0.802142	172	0.5262
88	419.82	403.06	456.48	360.40	424.06	391.78	440.33	379.02	431.20	394.42	431.12	399.53	0.802192	180	0.5619
89	418.07	404.93	445.67	371.89	420.55	395.47	441.04	378.35	432.87	392.61	470.15	358.03	0.802442	151	0.4621
90	419.12	403.81	436.71	381.43	416.77	399.45	439.10	380.47	466.71	356.59	454.61	374.54	0.802433	160	0.4992
91	418.24	404.74	435.65	382.56	452.01	361.88	425.30	395.19	449.57	375.02	482.63	344.62	0.802692	165	0.5047
92	419.47	403.44	432.75	385.64	431.36	383.84	446.22	372.93	429.71	396.07	439.47	390.56	0.802175	181	0.5690
93	418.42	404.56	439.08	378.90	427.75	387.72	429.61	390.57	460.12	363.65	432.24	398.31	0.802267	164	0.5014
94	419.82	403.06	441.19	376.65	435.84	379.11	429.17	391.03	428.48	397.42	441.05	388.84	0.802133	174	0.5399
95	419.91	402.97	458.15	358.63	418.61	397.62	437.96	381.54	426.02	399.93	438.42	391.78	0.802158	228	0.7106
96	419.65	403.25	431.17	387.33	420.55	395.37	426.45	394.01	446.14	378.46	430.86	399.83	0.801992	173	0.5299
97	418.42	404.56	447.43	370.02	417.56	398.68	455.10	363.40	437.62	387.53	461.80	366.90	0.8025	170	0.5297
98	419.30	403.62	429.50	389.11	419.93	396.01	426.45	394.02	426.98	398.90	457.75	371.18	0.802042	152	0.4709
99	417.28	405.77	440.84	377.04	417.12	399.10	424.51	396.00	427.77	398.04	443.16	386.72	0.80205	166	0.5284
100	418.86	404.09	445.23	372.35	416.33	399.98	433.65	386.22	426.10	399.82	446.15	383.54	0.802108	167	0.5136
B	419.56	403.34	424.05	394.93	417.65	398.42	424.78	395.84	443.07	381.72	432.79	397.79	0.8019	196	0.6041
A													0.80229	176.65	0.54726
W	418.24	404.74	435.65	382.56	452.01	361.88	425.30	395.19	449.57	375.02	482.63	344.62	0.802692	165	0.5047

*หมายเหตุ B แทนค่าที่ดีที่สุดที่ได้จากการทดสอบ, A แทนค่าเฉลี่ยจากการทดสอบ, และ W แทนค่าที่แย่ที่สุดที่ได้จากการทดสอบ

ตารางที่ 8.21 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดแนมิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AONGAs)

Trial	Period 1		Period 2		Period 3		Period 4		Period 5		Period 6		Prod. cost (MBaht)	Iteration	Comp. time (sec.)
	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)	G6 (B1)	G7 (B2)			
1	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	279	1.35886
2	419.91	402.97	451.65	365.53	433.38	381.81	436.11	383.55	433.49	392.04	441.23	388.67	0.80228	201	0.99812
3	419.74	403.16	432.23	386.20	466.87	346.12	429.45	390.79	437.28	388.22	444.59	384.85	0.80239	241	1.17462
4	419.82	403.06	450.68	366.56	425.91	389.77	426.62	393.68	426.63	399.32	439.21	390.88	0.80209	272	1.33840
5	419.82	403.06	425.37	393.52	420.28	395.61	445.08	374.19	432.34	393.18	459.51	369.31	0.80218	267	1.30028
6	419.12	403.81	447.78	369.64	437.77	377.10	465.56	352.32	426.69	399.34	434.17	396.17	0.80243	185	0.93145
7	419.91	402.97	450.77	366.46	432.32	382.92	433.04	386.83	433.05	392.51	445.63	383.99	0.80227	251	1.21077
8	419.91	402.97	455.69	361.24	424.33	391.50	427.41	392.80	428.56	397.24	439.74	390.33	0.80213	179	0.89585
9	417.45	405.59	433.19	385.18	455.09	358.60	424.51	396.06	453.35	371.02	446.59	382.80	0.80247	173	0.84579
10	419.91	402.97	446.55	370.95	428.11	387.40	428.73	391.46	429.27	396.52	441.76	388.14	0.80213	215	1.04106
11	412.53	410.83	432.49	385.97	422.39	393.40	426.09	394.37	461.61	362.03	441.91	388.02	0.80241	151	0.74410
12	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	270	1.30792
13	419.82	403.06	441.02	376.84	438.92	375.83	430.31	389.81	430.76	394.99	451.34	377.87	0.80226	159	0.79400
14	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	174	0.84550
15	418.77	404.18	420.01	399.25	442.70	371.68	422.49	398.32	454.49	369.72	435.25	394.98	0.80216	161	0.79245
16	419.91	402.97	431.96	386.48	455.26	358.40	441.47	377.98	459.33	364.67	442.90	386.73	0.80253	154	0.74416
17	419.91	402.97	447.70	369.73	425.56	390.13	426.18	394.17	426.10	399.88	438.59	391.54	0.80205	218	1.07819
18	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	222	1.08757
19	419.91	402.97	438.82	379.17	424.24	391.48	458.26	360.11	437.79	387.39	438.07	392.11	0.80229	186	0.90311
20	419.91	402.97	450.33	366.93	431.45	383.86	429.43	390.68	429.36	396.45	445.89	383.72	0.80221	175	0.86432
21	419.91	402.97	449.10	368.24	428.98	386.48	427.94	392.28	426.19	399.81	437.01	393.20	0.80208	203	0.98468
22	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	174	0.86003
23	419.91	402.97	438.55	379.45	419.05	397.02	421.17	399.59	429.88	395.80	467.60	360.74	0.80214	167	0.81572
24	413.23	410.08	419.66	399.67	422.74	392.94	436.38	383.50	462.67	360.92	431.09	399.57	0.80231	152	0.73853
25	418.24	404.74	424.40	394.56	421.16	394.66	432.60	387.49	441.22	383.71	440.53	389.51	0.80207	155	0.76032
26	419.91	402.97	430.47	388.07	438.21	376.51	446.48	372.66	427.95	398.00	436.40	393.79	0.80216	162	0.78585

ตารางที่ 8.21 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AONGAs) (ต่อ)

27	411.47	411.95	435.92	382.32	431.97	383.20	445.34	373.84	446.14	378.54	434.38	395.99	0.80250	151	0.74553
28	419.91	402.97	450.68	366.56	432.15	383.11	432.51	387.40	432.43	393.16	443.43	386.34	0.80224	256	1.25367
29	418.07	404.93	454.55	362.47	437.95	376.95	432.16	387.74	429.44	396.40	432.09	398.39	0.80226	249	1.21536
30	419.82	403.06	459.74	356.96	432.15	383.17	453.87	364.63	426.28	399.74	466.19	362.14	0.80259	326	1.58899
31	419.91	402.97	455.87	361.05	421.69	394.32	428.20	391.95	428.04	397.79	451.87	377.43	0.80221	157	0.78316
32	414.02	409.24	423.00	396.09	430.57	384.61	421.35	399.52	431.29	394.37	444.57	385.13	0.80213	161	0.78673
33	412.79	410.55	437.24	380.91	433.91	381.15	438.05	381.59	467.50	355.86	456.25	372.68	0.80275	157	0.76089
34	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	433.49	392.04	440.44	389.52	0.80223	258	1.25772
35	419.91	402.97	447.70	369.73	425.56	390.13	426.18	394.17	426.10	399.88	438.59	391.54	0.80205	187	0.91391
36	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	286	1.41593
37	413.50	409.80	426.87	391.97	416.77	399.38	446.75	372.41	431.11	394.47	437.19	393.10	0.80219	170	0.82610
38	419.91	402.97	447.78	369.64	425.64	390.03	426.27	394.07	426.19	399.79	438.68	391.44	0.80205	158	0.77971
39	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	344	1.68145
40	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	318	1.53938
41	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	262	1.30040
42	419.82	403.06	450.77	366.46	432.41	382.83	433.21	386.65	433.31	392.23	445.98	383.62	0.80228	170	0.83123
43	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	197	0.95656
44	417.28	405.77	430.03	388.56	419.14	396.86	436.64	383.14	431.29	394.29	446.77	382.87	0.80213	152	0.74583
45	419.91	402.97	448.49	368.89	441.11	373.54	438.57	380.95	434.63	390.88	435.87	394.33	0.80230	172	0.83240
46	419.82	403.06	449.01	368.33	428.90	386.57	427.85	392.38	426.10	399.91	436.92	393.30	0.80208	241	1.17525
47	419.91	402.97	447.70	369.73	425.47	390.22	426.09	394.26	426.02	399.98	438.59	391.54	0.80205	159	0.77048
48	419.91	402.97	440.05	377.86	435.93	379.01	422.31	398.36	432.34	393.28	441.67	388.18	0.80211	174	0.85530
49	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	232	1.14282
50	419.82	403.06	456.66	360.22	436.72	378.28	432.69	387.17	430.85	394.89	442.99	386.77	0.80231	259	1.26536
51	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	202	0.98552
52	419.82	403.06	446.29	371.23	428.02	387.49	428.82	391.36	428.92	396.89	431.39	399.22	0.80205	297	1.45428
53	419.82	403.06	442.42	375.34	432.85	382.31	424.25	396.27	442.10	382.85	448.35	381.09	0.80223	438	2.13483
54	419.91	402.97	447.70	369.73	425.56	390.13	426.18	394.17	426.10	399.88	432.09	398.48	0.80201	219	1.06047

ตารางที่ 8.21 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AONGAs) (ต่อ)

55	419.82	403.06	450.68	366.56	432.24	383.02	432.95	386.93	427.33	398.61	439.91	390.08	0.80219	180	0.89010
56	419.82	403.06	455.61	361.34	436.98	377.99	441.04	378.28	433.05	392.54	437.80	392.30	0.80234	180	0.99229
57	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	212	1.02838
58	418.77	404.18	423.53	395.50	423.62	392.03	451.58	367.29	441.04	383.91	450.28	379.09	0.80227	157	0.76357
59	419.82	403.06	449.98	367.30	430.83	384.51	430.75	389.27	429.97	395.78	441.76	388.12	0.80219	192	0.93658
60	417.80	405.21	425.46	393.44	440.94	373.58	426.01	394.52	442.01	383.00	431.12	399.40	0.80212	156	0.75592
61	419.82	403.06	450.77	366.46	432.41	382.83	433.04	386.83	427.33	398.61	439.82	390.17	0.80219	375	1.84917
62	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	240	1.16458
63	419.91	402.97	447.70	369.73	425.47	390.22	426.09	394.26	426.02	399.98	435.96	394.35	0.80203	159	0.78145
64	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	428.65	397.20	441.14	388.77	0.80221	216	1.04839
65	419.82	403.06	450.95	366.28	433.47	381.71	433.92	385.89	433.84	391.67	440.79	389.14	0.80226	402	1.98919
66	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	197	0.95372
67	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	300	1.46305
68	419.91	402.97	447.70	369.73	425.56	390.13	425.30	395.11	434.98	390.40	441.05	388.91	0.80213	188	0.92712
69	419.21	403.72	433.81	384.52	426.44	389.09	459.67	358.65	426.89	399.04	440.88	389.09	0.80224	171	0.82700
70	419.91	402.97	448.93	368.42	427.93	387.60	429.79	390.31	430.94	394.73	444.75	384.96	0.80218	272	1.34987
71	419.12	403.81	429.15	389.49	465.20	347.87	425.33	395.22	456.10	368.16	446.70	382.61	0.80250	151	0.73034
72	419.82	403.06	453.50	363.57	437.86	377.04	429.61	390.47	427.51	398.46	437.80	392.29	0.80221	336	1.63806
73	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	220	1.08738
74	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	265	1.30260
75	417.98	405.03	452.18	364.98	457.99	355.64	424.95	395.45	429.09	396.91	435.34	394.77	0.80237	151	0.74255
76	419.82	403.06	449.72	367.58	430.21	385.17	430.84	389.18	430.76	394.93	443.25	386.54	0.80220	187	0.90267
77	419.91	402.97	456.75	360.12	425.82	389.91	428.29	391.85	429.62	396.13	433.41	397.07	0.80213	185	0.90984
78	413.58	409.70	439.43	378.56	436.89	377.98	432.86	387.10	444.47	380.35	437.80	392.30	0.80243	152	0.74786
79	419.82	403.06	450.68	366.56	432.24	383.02	432.86	387.02	432.78	392.79	445.27	384.37	0.80227	195	0.96653
80	419.91	402.97	448.93	368.42	426.52	389.10	428.38	391.81	429.62	396.13	443.43	386.38	0.80214	174	0.85757
81	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	432.87	392.69	445.36	384.27	0.80227	243	1.18124
82	419.47	403.44	451.91	365.25	420.02	396.08	424.69	395.73	454.49	369.58	445.71	383.99	0.80230	155	0.75127

ตารางที่ 8.21 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 30 Bus จำนวน 100 ครั้ง (AONGAs) (ต่อ)

83	419.12	403.81	425.11	393.80	445.16	369.09	435.94	383.93	427.42	398.61	454.50	374.46	0.80225	200	0.98283
84	419.82	403.06	449.98	367.30	429.78	385.64	429.79	390.31	429.09	396.72	440.97	388.98	0.80217	317	1.54394
85	419.82	403.06	423.88	395.11	430.74	384.43	431.46	388.71	431.38	394.28	443.87	385.88	0.80203	224	1.10320
86	412.79	410.55	441.98	375.86	433.91	381.18	426.45	393.93	435.42	389.98	456.44	372.48	0.80247	157	0.76440
87	418.07	404.93	428.18	390.53	457.11	356.42	485.07	331.85	444.52	380.44	451.47	377.60	0.80286	158	0.77452
88	407.87	415.79	447.34	370.19	417.91	398.30	428.91	391.26	441.40	383.50	434.81	395.63	0.80244	165	0.80148
89	419.82	403.06	450.07	367.21	430.92	384.42	430.58	389.46	429.62	396.16	435.69	394.59	0.80214	329	1.60370
90	419.91	402.97	439.79	378.14	447.71	366.48	440.07	379.42	449.04	375.55	434.55	395.69	0.80238	195	0.96563
91	419.91	402.97	450.77	366.46	432.32	382.92	432.95	386.93	427.25	398.71	439.74	390.27	0.80218	212	1.03392
92	419.47	403.44	457.71	359.10	429.86	385.60	448.95	369.86	438.41	386.77	432.62	397.89	0.80238	171	0.84040
93	419.82	403.06	441.54	376.27	425.21	390.46	427.94	392.34	429.97	395.75	444.57	385.17	0.80209	186	0.90279
94	419.82	403.06	450.16	367.12	431.18	384.14	431.81	388.15	431.73	393.91	444.22	385.50	0.80223	227	1.12679
95	416.13	406.99	444.44	373.21	456.05	357.64	424.42	396.07	436.04	389.48	433.32	396.94	0.80238	151	0.73103
96	417.45	405.59	452.97	364.15	447.71	366.56	429.70	390.38	431.82	393.93	441.05	388.75	0.80240	153	0.75095
97	414.20	409.05	445.06	372.57	423.80	391.99	431.37	388.65	436.39	388.88	459.60	369.19	0.80244	156	0.76040
98	419.91	402.97	452.97	364.13	436.72	378.25	424.07	396.38	426.19	399.87	440.88	389.02	0.80218	191	0.92681
99	418.59	404.37	447.08	370.39	456.41	357.29	428.38	391.83	463.98	359.73	430.70	399.74	0.80254	151	0.73954
100	419.91	402.97	431.00	387.51	421.95	393.86	439.01	380.61	429.71	396.00	442.20	387.72	0.80205	163	0.78736
B	419.91	402.97	447.70	369.73	425.56	390.13	426.18	394.17	426.10	399.88	432.09	398.48	0.80201	219	1.06047
A													0.80225	210.15	1.02939
W	418.07	404.93	428.18	390.53	457.11	356.42	485.07	331.85	444.52	380.44	451.47	377.60	0.80286	158	0.77452

***หมายเหตุ B แทนค่าที่ดีที่สุดที่ได้จากการทดสอบ, A แทนค่าเฉลี่ยจากการทดสอบ, และ W แทนค่าที่แย่ที่สุดที่ได้จากการทดสอบ

ตารางที่ 8.23 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 118 Bus จำนวน 100 ครั้ง

Period	Unit	AOGAs (With ESAs)						AONGAs (With ESAs)					
		MW (Best)	Cost (Baht) (Best)	MW (Average)	Cost (Baht) (Average)	MW (Worst)	Cost (Baht) (Worst)	MW (Best)	Cost (Baht) (Best)	MW (Average)	Cost (Baht) (Average)	MW (Worst)	Cost (Baht) (Worst)
1	G1 (B10)	689.67	59843.18			625.00	57635.06	693.26	59959.78			699.93	60177.45
	G2 (B12)	699.93	60596.10			625.00	60065.79	689.01	60569.83			699.93	60596.10
	G3 (B25)	250.00	63237.80			250.00	63237.80	252.03	63467.04			250.00	63237.80
	G4 (B26)	499.80	67696.37			450.00	65518.85	499.95	67702.92			488.04	67182.83
	G5 (B46)	300.00	63520.95			300.00	63520.95	300.00	63520.95			300.00	63520.95
	G6 (B49)	200.00	59716.00			200.00	59716.00	208.95	60257.47			201.41	59801.31
	G7 (B54)	300.00	55000.00			300.00	55000.00	318.21	55910.50			304.39	55219.50
	G8 (B59)	300.00	65000.00			300.00	65000.00	300.00	65000.00			302.54	65381.00
	G9 (B61)	200.00	60000.00			200.00	60000.00	204.20	60630.00			205.62	60843.00
	G10 (B65)	430.00	60090.50			431.93	60203.11	439.93	60669.92			464.45	62100.66
	G11 (B66)	677.50	59447.96			700.00	60179.74	699.92	60177.12			693.94	59981.91
	G12 (B69)	699.93	60596.10			700.00	60596.24	699.93	60596.10			699.93	60596.10
	G13 (B80)	250.00	63237.80			290.00	67959.80	250.00	63237.80			250.00	63237.80
	G14 (B89)	389.91	62881.49			390.00	62885.45	305.98	59179.66			301.23	58969.53
	G15 (B100)	300.00	63520.95			340.00	66682.79	300.00	63520.95			300.00	63520.95
	G16 (B103)	201.21	59789.20			240.00	62136.00	200.00	59716.00			200.00	59716.00
	G17 (B111)	300.11	55005.50			336.66	56833.00	327.98	56399.00			331.31	56565.50
2	G1 (B10)	658.50	58819.52			550.00	55063.25	686.99	59756.22			699.93	60177.45
	G2 (B12)	675.88	60521.39			550.00	59137.00	694.96	60585.38			699.93	60596.10
	G3 (B25)	250.00	63237.80			250.00	63237.80	250.74	63321.23			264.73	64926.43
	G4 (B26)	449.80	65510.09			400.00	63325.10	485.78	67084.09			499.82	67697.24
	G5 (B46)	300.00	63520.95			300.00	63520.95	300.00	63520.95			301.76	63659.41
	G6 (B49)	200.00	59716.00			200.00	59716.00	218.16	60814.68			206.55	60112.28
	G7 (B54)	300.00	55000.00			300.00	55000.00	346.96	57348.00			300.00	55000.00
	G8 (B59)	300.00	65000.00			300.00	65000.00	300.00	65000.00			311.29	66693.50
	G9 (B61)	200.00	60000.00			200.00	60000.00	201.53	60229.50			200.16	60024.00
	G10 (B65)	380.00	57173.00			381.93	57285.61	389.93	57752.42			414.45	59183.16
	G11 (B66)	656.97	58767.81			687.77	59781.53	699.93	60177.45			670.47	59217.89

ตารางที่ 8.23 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า IEEE 118 Bus จำนวน 100 ครั้ง (ต่อ)

2	G12 (B69)	699.93	60596.10			700.00	60596.24	658.87	60420.36			667.89	60479.94
	G13 (B80)	252.03	63467.04			330.00	73113.80	250.00	63237.80			250.00	63237.80
	G14 (B89)	429.82	64634.35			430.00	64642.25	255.98	56964.31			251.23	56753.46
	G15 (B100)	339.96	66679.61			380.00	69878.87	300.00	63520.95			300.00	63520.95
	G16 (B103)	200.00	59716.00			280.00	64556.00	200.00	59716.00			200.00	59716.00
	G17 (B111)	300.99	55049.50			342.71	57135.50	352.47	57623.50			357.97	57898.50
3	G1 (B10)	699.89	60176.14			475.00	52877.45	700.00	60179.74			700.00	60179.74
	G2 (B12)	699.90	60596.04			503.74	58256.33	700.00	60596.24			700.00	60596.24
	G3 (B25)	251.25	63378.82			263.28	64757.60	274.13	66034.65			304.73	69807.51
	G4 (B26)	399.80	63316.31			354.66	61329.32	455.53	65761.02			500.00	67705.10
	G5 (B46)	300.00	63520.95			304.18	63849.88	310.16	64321.03			341.76	66822.67
	G6 (B49)	200.00	59716.00			224.26	61183.73	204.09	59963.44			236.31	61912.76
	G7 (B54)	349.95	57497.50			326.51	56325.50	348.77	57438.50			300.00	55000.00
	G8 (B59)	300.00	65000.00			344.87	71730.50	300.00	65000.00			310.17	66525.50
	G9 (B61)	200.00	60000.00			215.67	62350.50	200.70	60105.00			200.93	60139.50
	G10 (B65)	330.00	54255.50			345.64	55168.09	339.93	54834.92			364.45	56265.66
	G11 (B66)	689.51	59837.98			687.65	59777.64	699.93	60177.45			595.47	56506.68
	G12 (B69)	699.93	60596.10			686.67	60562.74	672.22	60503.65			667.36	60476.83
	G13 (B80)	250.00	63237.80			283.52	67165.51	250.00	63237.80			250.00	63237.80
	G14 (B89)	385.71	62696.74			440.26	65092.09	250.00	56698.85			250.00	56698.85
	G15 (B100)	300.00	63520.95			420.00	73113.03	300.00	63520.95			300.00	63520.95
	G16 (B103)	200.00	59716.00			320.00	66976.00	200.00	59716.00			200.00	59716.00
	G17 (B111)	330.24	56512.00			349.27	57463.50	382.12	59106.00			355.49	57774.50
Total			3110163.88		3131253.33		3156139.89		3114783.10		3122416.67		3122428.75
Iteration		463		291.69		151		223		672		206	
CPU Time (sec.)		183.01514		153.09649		94.77637		118.3501		357.05371		109.37744	

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง

Period	Unit	AOGAs (With ESAs)						AONGAs (With ESAs)					
		MW (Best)	Cost (Baht) (Best)	MW (Average)	Cost (Baht) (Average)	MW (Worst)	Cost (Baht) (Worst)	MW (Best)	Cost (Baht) (Best)	MW (Average)	Cost (Baht) (Average)	MW (Worst)	Cost (Baht) (Worst)
1	KN-T1	70.00				70.00		70.00				70.00	
	RPB-H1	79.00				79.00		79.00				79.00	
	RPB-H2	79.00				79.00		79.00				79.00	
	RPB-H3	79.00				79.00		79.00				79.00	
	MM-T8	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T9	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T4	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T5	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T6	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T7	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	SK-H4	112.00				112.00		112.00				112.00	
	SK-H3	111.00				111.00		111.00					
	SK-H2	102.00				102.00		102.00					
	BB-H8	152.00				152.00		152.00					
	BB-H7	115.00				115.00		115.00					
	BB-H6	76.00				76.00		76.00					
	BB-H4	76.00				76.00		76.00					
	BB-H2	76.00				76.00		76.00					
	NPO-C1	180.00	5088.31			180.00	5088.31	180.00	5088.31			180.00	5088.31
	IPT-C1	700.00				700.00		700.00				700.00	
	BPK-C1	315.00	9428.31			315.00	9428.31	315.00	9428.31			315.00	9428.31
	BPK-T2	568.00	8176.87			568.00	8176.87	568.00	8176.87			568.00	8176.87
	SB-C1	284.00	7421.55			284.00	7421.55	284.00	7421.55			284.00	7421.55
	SB-T1	140.00	2700.30			140.00	2700.30	140.00	2700.30			140.00	2700.30

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

1	SB-T2	140.00	2700.30			140.00	2700.30	140.00	2700.30			140.00	2700.30
	SB-T3	140.00	2934.09			140.00	2934.09	140.00	2934.09			140.00	2934.09
	KHL-H3	88.00				88.00		88.00				88.00	
	KHL-H2	88.00				88.00		88.00				88.00	
	KHL-H1	88.00				88.00		88.00				88.00	
	SNR-H1	120.00				120.00		120.00				120.00	
	SNR-H2	120.00				120.00		120.00				120.00	
	SNR-H3	120.00				120.00		120.00				120.00	
	SNR-H4	180.00				180.00		180.00				180.00	
	TN-H1	20.00				20.00		20.00				20.00	
	TN-H2	20.00				20.00		20.00				20.00	
	RB-T1	700.00				700.00		700.00				700.00	
	RB-T2	700.00				700.00		700.00				700.00	
	THB-H1	105.00				105.00		105.00				105.00	
	THB-H2	105.00				105.00		105.00				105.00	
	GCC-T1	90.00				90.00		90.00				90.00	
	HH-H1	63.00				63.00		63.00				63.00	
	HH-H2	63.00				63.00		63.00				63.00	
	AEP-T1	90.00				90.00		90.00				90.00	
	TPS-T1	25.00				25.00		25.00				25.00	
	TTP-T1	10.00				10.00		10.00				10.00	
	NPC-T1	32.00				32.00		32.00				32.00	
	IP-T1	55.00				55.00		55.00				55.00	
	IP-T2	55.00				55.00		55.00				55.00	
	BCC-T1	90.00				90.00		90.00				90.00	
	MTP-T1	60.00				60.00		60.00				60.00	
	MTP-T2	60.00				60.00		60.00				60.00	
	TCC-T1	90.00				90.00		90.00				90.00	

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

1	TCC-T2	90.00				90.00		90.00				90.00	
	C0C0-T1	90.00				90.00		90.00				90.00	
	C0C0-T2	90.00				90.00		90.00				90.00	
	NPS-T1	90.00				90.00		90.00				90.00	
	NPS-T2	90.00				90.00		90.00				90.00	
	NPO-C2	180.00	5088.31			180.00	5088.31	180.00	5088.31			180.00	5088.31
	WN-C3	422.02	5041.49			424.22	5063.89	422.19	5043.22			421.96	5040.88
	KN-T2	70.00				70.00		70.00				70.00	
	RY-C1	292.00				292.00		292.00				292.00	
	RY-C4	292.00				292.00		292.00				292.00	
	BB-H5	76.00				76.00		76.00				76.00	
	BB-H3	76.00				76.00		76.00				76.00	
	BB-H1	76.00				76.00		76.00				76.00	
	BLCP-C1	673.00				673.00		673.00				673.00	
	BLCP-C2	673.00				673.00		673.00				673.00	
	EPEC-C1	350.00				350.00		350.00				350.00	
	GULF-C1	350.00				350.00		350.00				350.00	
	GULF-C2	331.72				329.42		331.54				331.79	
2	KN-T1	70.00				70.00		70.00				70.00	
	RPB-H1	79.00				79.00		79.00				79.00	
	RPB-H2	79.00				79.00		79.00				79.00	
	RPB-H3	79.00				79.00		79.00				79.00	
	MM-T8	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T9	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T4	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T5	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T6	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T7	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

2	SK-H4	112.00				112.00		112.00				112.00	
	SK-H3	111.00				111.00		111.00				111.00	
	SK-H2	102.00				102.00		102.00				102.00	
	BB-H8	152.00				152.00		152.00				152.00	
	BB-H7	115.00				115.00		115.00				115.00	
	BB-H6	76.00				76.00		76.00				76.00	
	BB-H4	76.00				76.00		76.00				76.00	
	BB-H2	76.00				76.00		76.00				76.00	
	NPO-C1	180.00	5088.31			180.00	5088.31	180.00	5088.31			180.00	5088.31
	IPT-C1	700.00				700.00		700.00				700.00	
	BPK-C1	315.00	9428.31			315.00	9428.31	315.00	9428.31			315.00	9428.31
	BPK-T2	443.00	6496.19			443.00	6496.19	443.00	6496.19			443.00	6496.19
	SB-C1	284.00	7421.55			284.00	7421.55	284.00	7421.55			284.00	7421.55
	SB-T1	140.00	2700.30			140.00	2700.30	140.00	2700.30			140.00	2700.30
	SB-T2	140.00	2700.30			140.00	2700.30	140.00	2700.30			140.00	2700.30
	SB-T3	140.00	2934.09			140.00	2934.09	140.00	2934.09			140.00	2934.09
	KHL-H3	88.00				88.00		88.00				88.00	
	KHL-H2	88.00				88.00		88.00				88.00	
	KHL-H1	88.00				88.00		88.00				88.00	
	SNR-H1	120.00				120.00		120.00				120.00	
	SNR-H2	120.00				120.00		120.00				120.00	
	SNR-H3	120.00				120.00		120.00				120.00	
	SNR-H4	180.00				180.00		180.00				180.00	
	TN-H1	20.00				20.00		20.00				20.00	
	TN-H2	20.00				20.00		20.00				20.00	
	RB-T1	700.00				700.00		700.00				700.00	
	RB-T2	700.00				700.00		700.00				700.00	
	THB-H1	105.00				105.00		105.00				105.00	

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

2	THB-H2	105.00				105.00		105.00				105.00	
	GCC-T1	90.00				90.00		90.00				90.00	
	HH-H1	63.00				63.00		63.00				63.00	
	HH-H2	63.00				63.00		63.00				63.00	
	AEP-T1	90.00				90.00		90.00				90.00	
	TPS-T1	25.00				25.00		25.00				25.00	
	TTP-T1	10.00				10.00		10.00				10.00	
	NPC-T1	32.00				32.00		32.00				32.00	
	IP-T1	55.00				55.00		55.00				55.00	
	IP-T2	55.00				55.00		55.00				55.00	
	BCC-T1	90.00				90.00		90.00				90.00	
	MTP-T1	60.00				60.00		60.00				60.00	
	MTP-T2	60.00				60.00		60.00				60.00	
	TCC-T1	90.00				90.00		90.00				90.00	
	TCC-T2	90.00				90.00		90.00				90.00	
	C0C0-T1	90.00				90.00		90.00				90.00	
	C0C0-T2	90.00				90.00		90.00				90.00	
	NPS-T1	90.00				90.00		90.00				90.00	
	NPS-T2	90.00				90.00		90.00				90.00	
	NPO-C2	180.00	5088.31			180.00	5088.31	180.00	5088.31			180.00	5088.31
	WN-C3	576.35	6584.79			587.48	6693.90	587.16	6690.76			587.26	6691.74
	KN-T2	70.00				70.00		70.00				70.00	
	RY-C1	292.00				292.00		292.00				292.00	
	RY-C4	292.00				292.00		292.00				292.00	
	BB-H5	76.00				76.00		76.00				76.00	
	BB-H3	76.00				76.00		76.00				76.00	
	BB-H1	76.00				76.00		76.00				76.00	
	BLCP-C1	673.00				673.00		673.00				673.00	

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

2	BLCP-C2	673.00				673.00		673.00				673.00	
	EPEC-C1	350.00				350.00		350.00				350.00	
	GULF-C1	350.00				350.00		350.00				350.00	
	GULF-C2	342.34				330.72		331.07				330.95	
3	KN-T1	70.00				70.00		70.00				70.00	
	RPB-H1	79.00				79.00		79.00				79.00	
	RPB-H2	79.00				79.00		79.00				79.00	
	RPB-H3	79.00				79.00		79.00				79.00	
	MM-T8	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T9	150.00	5801.29			150.00	5801.29	150.00	5801.29			150.00	5801.29
	MM-T4	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T5	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T6	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	MM-T7	90.00	7452.72			90.00	7452.72	90.00	7452.72			90.00	7452.72
	SK-H4	112.00				112.00		112.00				112.00	
	SK-H3	111.00				111.00		111.00				111.00	
	SK-H2	102.00				102.00		102.00				102.00	
	BB-H8	152.00				152.00		152.00				152.00	
	BB-H7	115.00				115.00		115.00				115.00	
	BB-H6	76.00				76.00		76.00				76.00	
	BB-H4	76.00				76.00		76.00				76.00	
	BB-H2	76.00				76.00		76.00				76.00	
	NPO-C1	180.00	5088.31			180.00	5088.31	180.00	5088.31			180.00	5088.31
	IPT-C1	700.00				700.00		700.00				700.00	
	BPK-C1	315.00	9428.31			315.00	9428.31	315.00	9428.31			315.00	9428.31
	BPK-T2	503.14	7303.50			520.11	7531.74	540.71	7809.05			517.25	7493.26
	SB-C1	315.97	8114.92			315.97	8114.92	315.97	8114.92			315.97	8114.92
	SB-T1	314.83	4681.16			314.83	4681.16	314.83	4681.16			314.83	4681.16

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

3	SB-T2	314.83	4681.16			314.83	4681.16	314.83	4681.16			314.83	4681.16
	SB-T3	314.83	4890.23			314.83	4890.23	314.83	4890.23			314.83	4890.23
	KHL-H3	88.00				88.00		88.00				88.00	
	KHL-H2	88.00				88.00		88.00				88.00	
	KHL-H1	88.00				88.00		88.00				88.00	
	SNR-H1	120.00				120.00		120.00				120.00	
	SNR-H2	120.00				120.00		120.00				120.00	
	SNR-H3	120.00				120.00		120.00				120.00	
	SNR-H4	180.00				180.00		180.00				180.00	
	TN-H1	20.00				20.00		20.00				20.00	
	TN-H2	20.00				20.00		20.00				20.00	
	RB-T1	700.00				700.00		700.00				700.00	
	RB-T2	700.00				700.00		700.00				700.00	
	THB-H1	105.00				105.00		105.00				105.00	
	THB-H2	105.00				105.00		105.00				105.00	
	GCC-T1	90.00				90.00		90.00				90.00	
	HH-H1	63.00				63.00		63.00				63.00	
	HH-H2	63.00				63.00		63.00				63.00	
	AEP-T1	90.00				90.00		90.00				90.00	
	TPS-T1	25.00				25.00		25.00				25.00	
	TTP-T1	10.00				10.00		10.00				10.00	
	NPC-T1	32.00				32.00		32.00				32.00	
	IP-T1	55.00				55.00		55.00				55.00	
	IP-T2	55.00				55.00		55.00				55.00	
	BCC-T1	90.00				90.00		90.00				90.00	
	MTP-T1	60.00				60.00		60.00				60.00	
	MTP-T2	60.00				60.00		60.00				60.00	
	TCC-T1	90.00				90.00		90.00				90.00	

ตารางที่ 8.25 ผลการทดสอบการจัดกำลังการผลิตในลักษณะไดนามิกของระบบไฟฟ้า THA 424 Bus จำนวน 100 ครั้ง (ต่อ)

3	TCC-T2	90.00				90.00		90.00				90.00	
	C0C0-T1	90.00				90.00		90.00				90.00	
	C0C0-T2	90.00				90.00		90.00				90.00	
	NPS-T1	90.00				90.00		90.00				90.00	
	NPS-T2	90.00				90.00		90.00				90.00	
	NPO-C2	219.96	5968.69			219.96	5968.69	195.63	5431.49			219.96	5968.69
	WN-C3	699.69	7777.44			699.70	7777.53	699.70	7777.53			699.70	7777.53
	KN-T2	70.00				70.00		70.00				70.00	
	RY-C1	292.00				292.00		292.00				292.00	
	RY-C4	292.00				292.00		292.00				292.00	
	BB-H5	76.00				76.00		76.00				76.00	
	BB-H3	76.00				76.00		76.00				76.00	
	BB-H1	76.00				76.00		76.00				76.00	
	BLCP-C1	673.00				673.00		673.00				673.00	
	BLCP-C2	673.00				673.00		673.00				673.00	
	EPEC-C1	350.00				350.00		350.00				350.00	
	GULF-C1	350.00				350.00		350.00				350.00	
	GULF-C2	328.42				310.15		313.72				313.24	
Total			279195.74		279396.33		279555.59		279271.91		279407.77		279491.95
Iteration		173		178.33		114		248		171.381		146	
CPU Time (sec.)		421.55957		438.9583		281.58136		1253.71875		865.5355		736.069336	