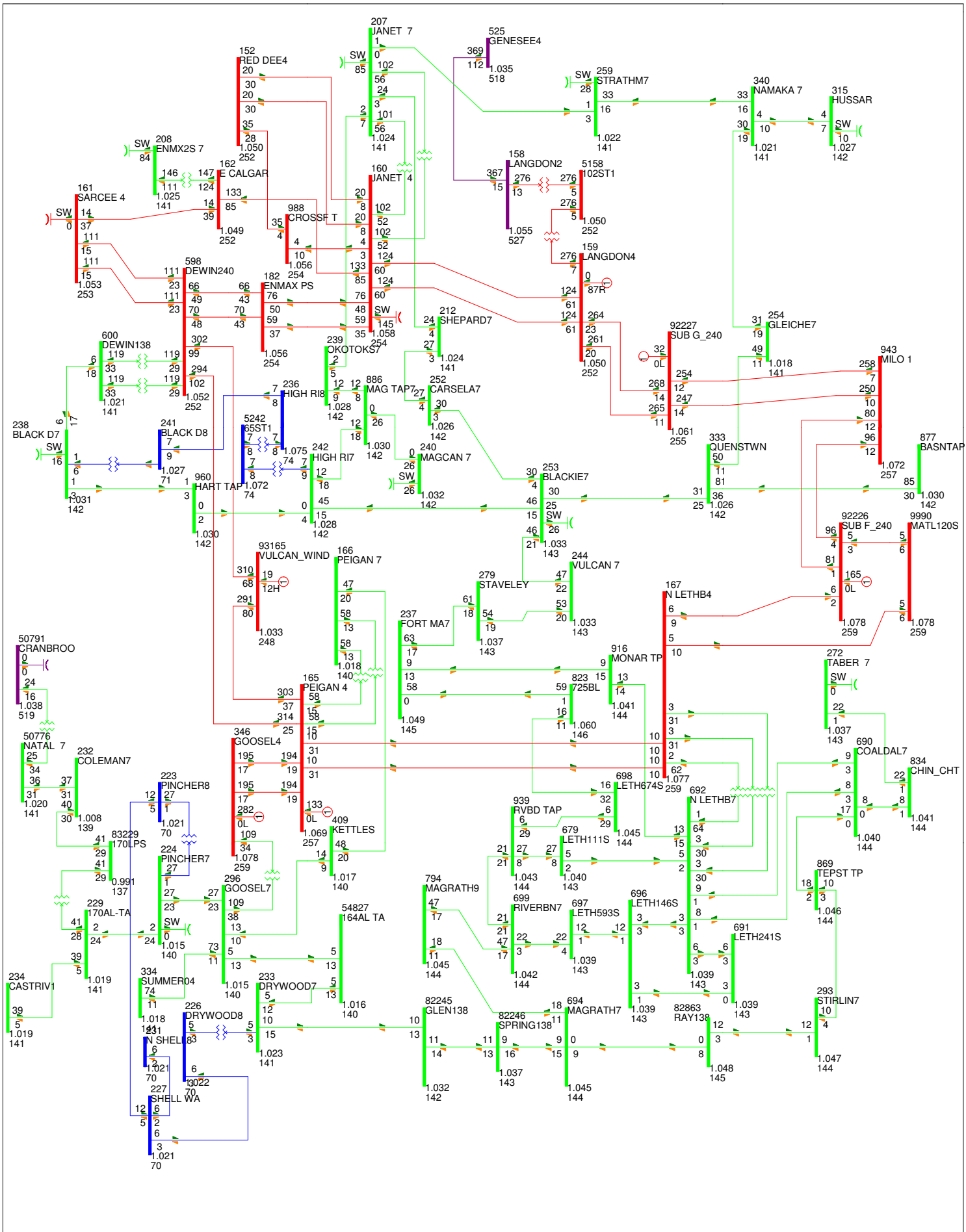


**APPENDIX D ALTERNATIVES STEADY STATE TECHNICAL
ANALYSIS**

Table D-1: Summary of 2013 Power flow analysis

Figure No.	Scenario	Description	Overloaded Element	Percent Overload	Other System Performance Concerns
	2013 Summer Light				
Fig 2013-SL- 1		Generation Dispatch			
Fig 2013-SL- 2/3	Alternative 1A	Normal condition	None	N/A	None
Fig 2013-SL- 4/5	Alternative 1B	Normal condition	None	N/A	None
Fig 2013-SL- 6/7	Alternative 1C	Normal condition	None	N/A	None
Fig 2013-SL- 8/9	Alternative 2	Normal condition	None	N/A	None
Fig 2013-SL- 10/11	Alternative 3	Normal condition	None	N/A	None
Fig 2013-SL- 12/13	Alternative 4	Normal condition	None	N/A	None
	2013 Summer Peak				
Fig 2013-SP- 1		Generation Dispatch			None
Fig 2013-SP- 2/3	Alternative 1A	Normal condition	None	N/A	None
		912L from Nevis 766S to Red Deer 63S	853L W.Brooks 28S to Queenstown 504S	108%	None
Fig 2013-SP- 4/5	Alternative 1B	Normal condition	None	N/A	None
		912L from Nevis 766S to Red Deer 63S	853L W.Brooks 28S to Queenstown 504S	108%	None
Fig 2013-SP- 6/7	Alternative 1C	Normal condition	None	N/A	None
		912L from Nevis 766S to Red Deer 63S	853L W.Brooks 28S to Queenstown 504S	108%	None
Fig 2013-SP- 8/9	Alternative 2	Normal condition	None	N/A	None

Figure No.	Scenario	Description	Overloaded Element	Percent Overload	Other System Performance Concerns
		912L from Nevis 766S to Red Deer 63S	853L W.Brooks 28S to Queenstown 504S	113%	None
Fig 2013-SP- 10/11	Alternative 3	Normal condition	None	N/A	None
Fig 2013-SP- 12/13	Alternative 4	Normal condition	None	N/A	None



2013 SUMMER LIGHT CASE

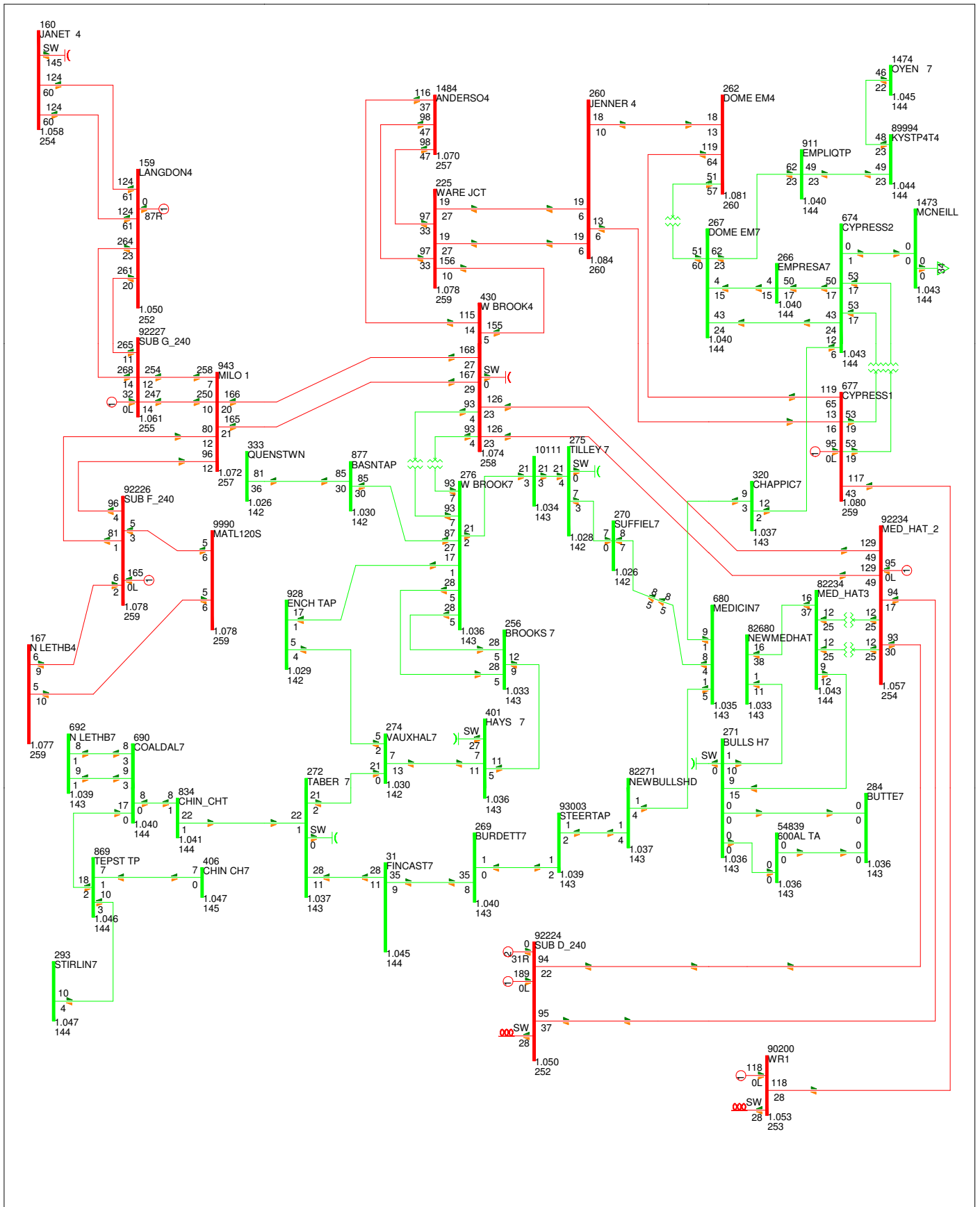
2013 South West System SAT, DEC 13 2008 14:32

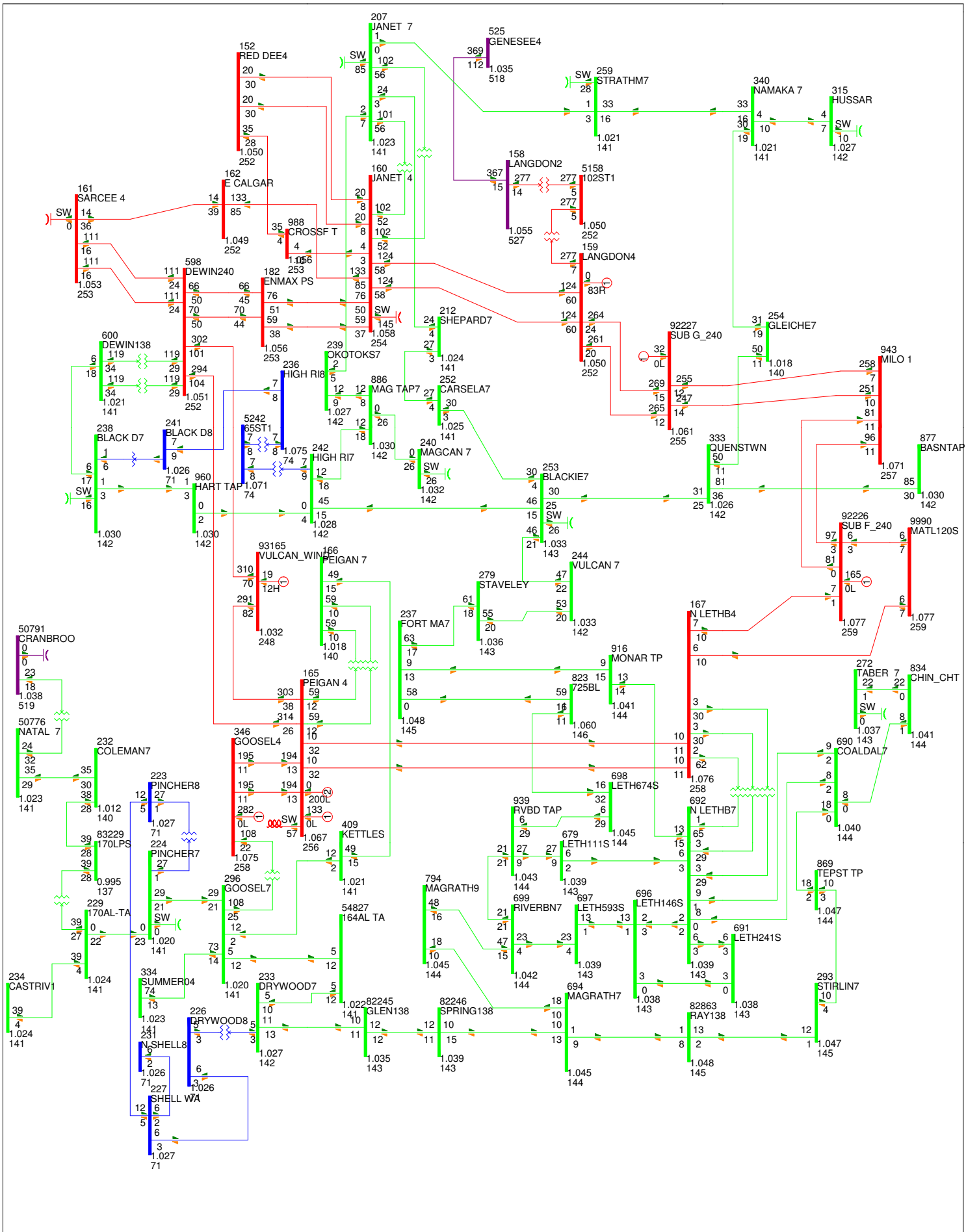
ALTERNATIVE 1A

Fig 2013-SL-2

Bus: VOLTAGE (V) (MVA)
 Branch: MW/MVA
 Element: MW/MVA
 Flow: MW/MVA
 Loss: MW/MVA
 PV: MW/MVA
 Loss: MW/MVA
 Loss: MW/MVA
 Loss: MW/MVA
 Loss: MW/MVA

BC Export: 702 MW





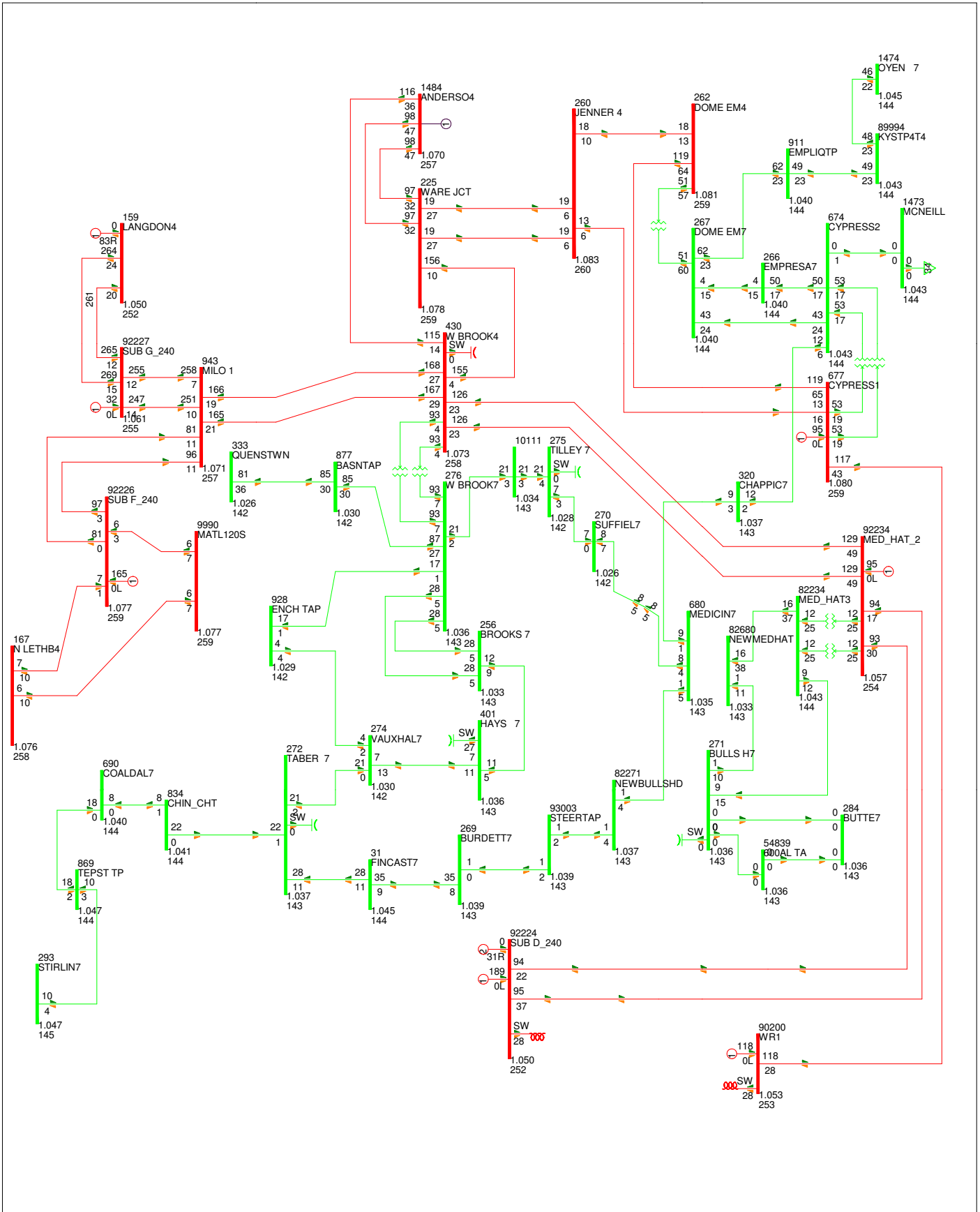
2013 SUMMER LIGHT CASE

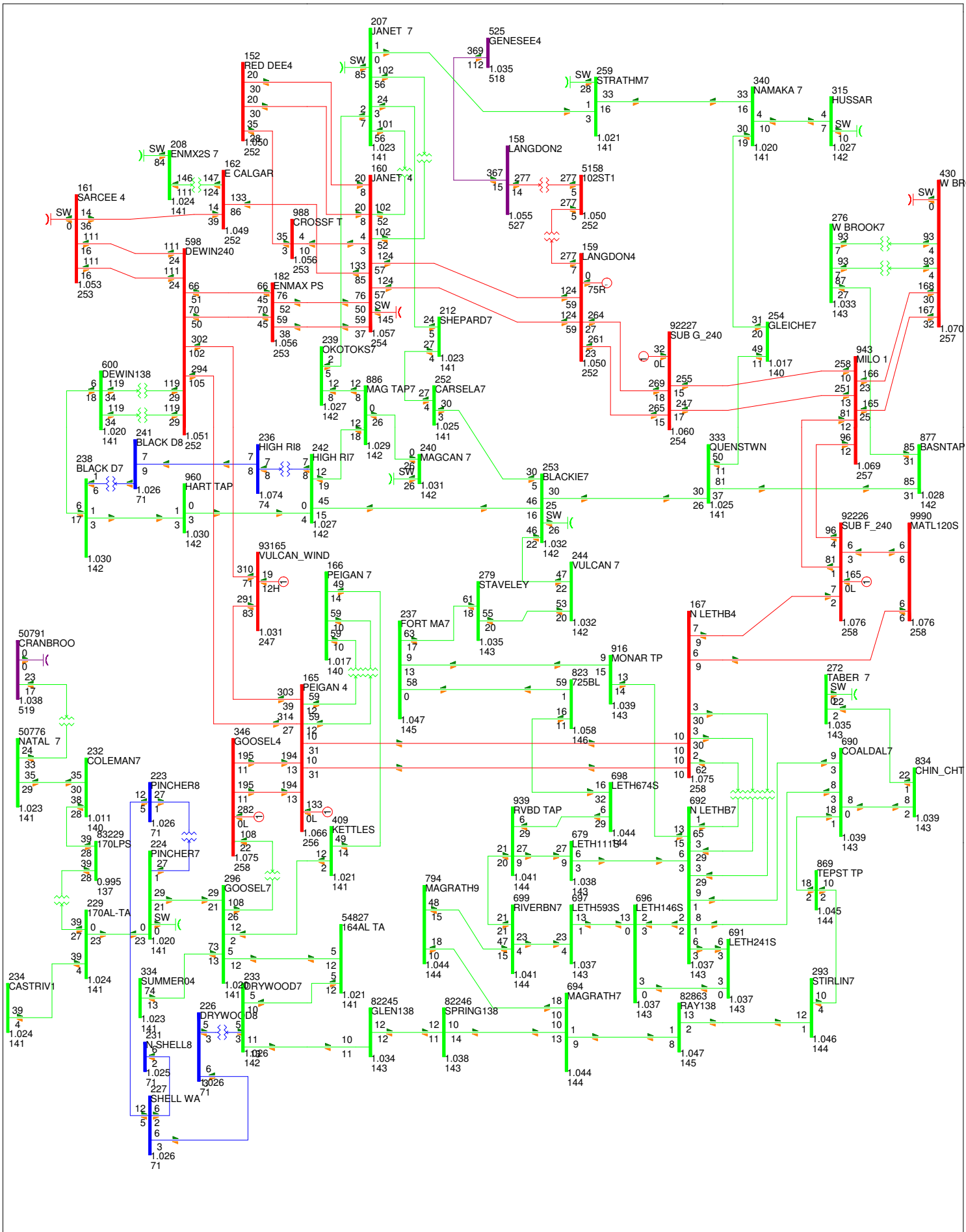
2013 South West System SAT, DEC 13 2008 14:32

ALTERNATIVE 1B

Fig 2013-SL-4

Bus: VOLTAGE (V) (P) (M)
 Branch: MW (W) (M)
 Element: MW (W) (M)
 # 0=0.000 #1=0.000 #2=0.000 #3=0.000 #4=0.000 #5=0.000





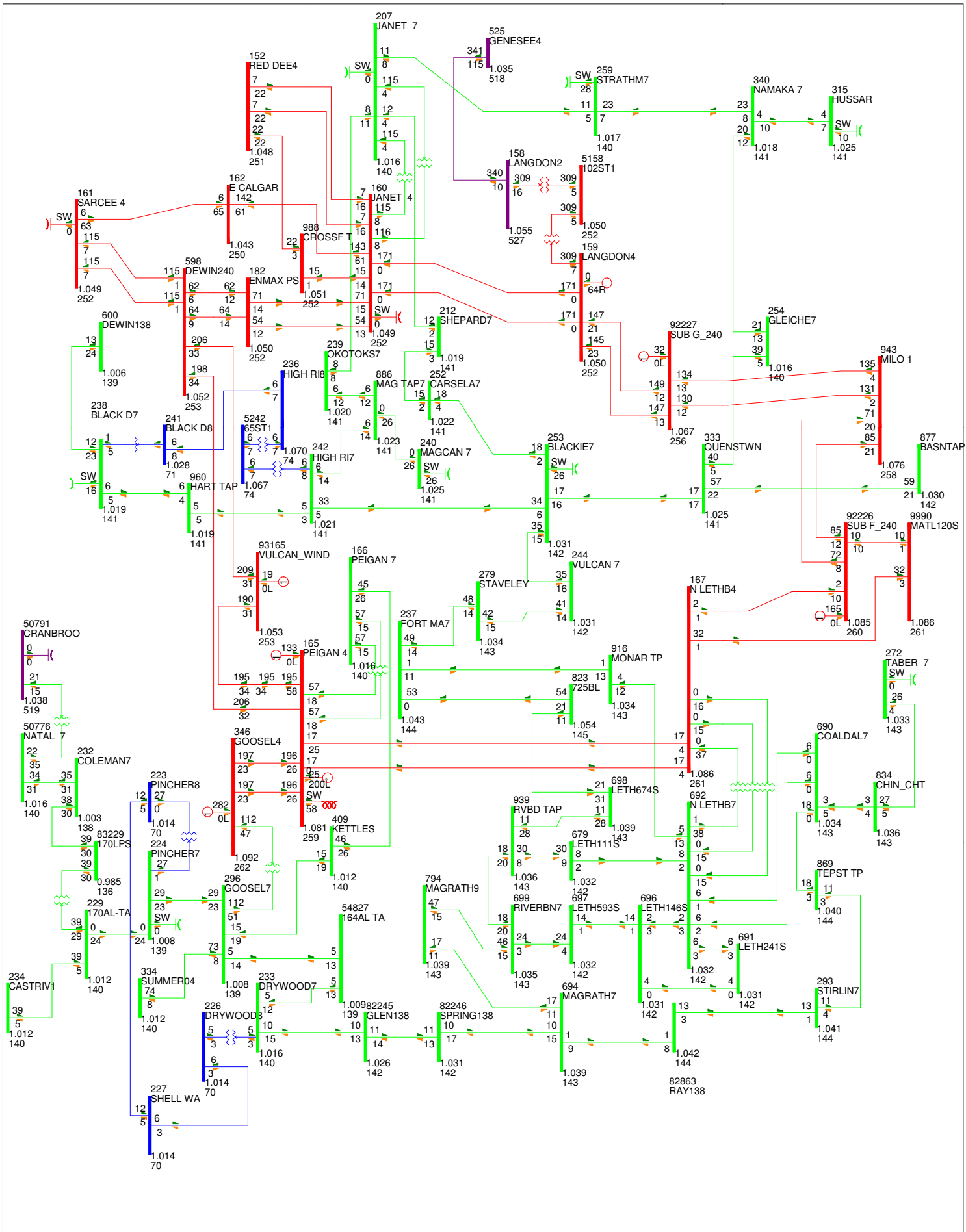
2013 SUMMER LIGHT CASE

2013 South West System SAT, DEC 13 2008 14:32

ALTERNATIVE 1C

Fig 2013-SL-6

Bus: VOLTAGE (V/MVA)
 Branch: MW/MVAR
 Element: MW/MVAR
 Flow: MW/MVA
 Flow: MW/MVA



2013 SUMMER LIGHT CASE

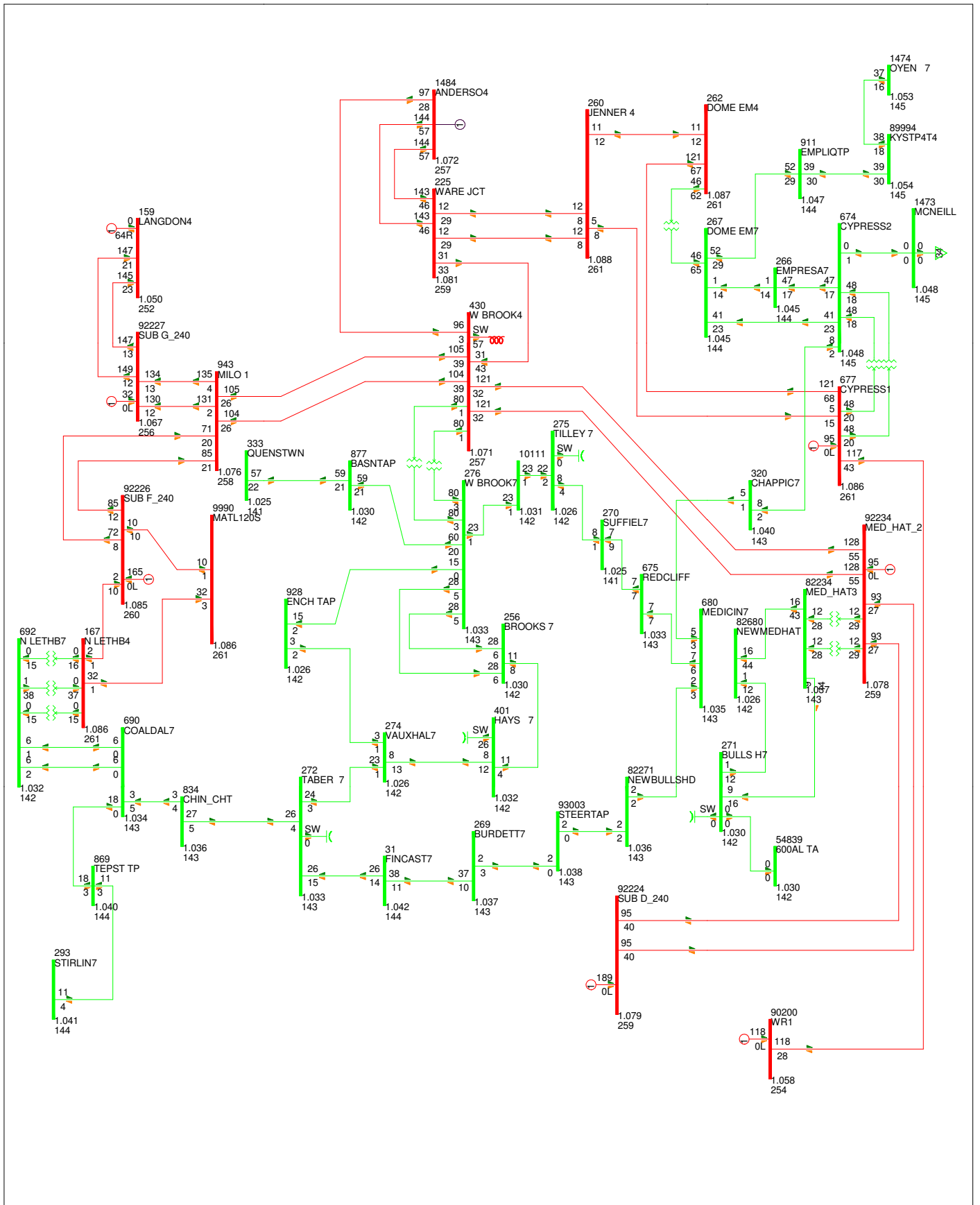
2013 South West System SAT, DEC 13 2008 14:32

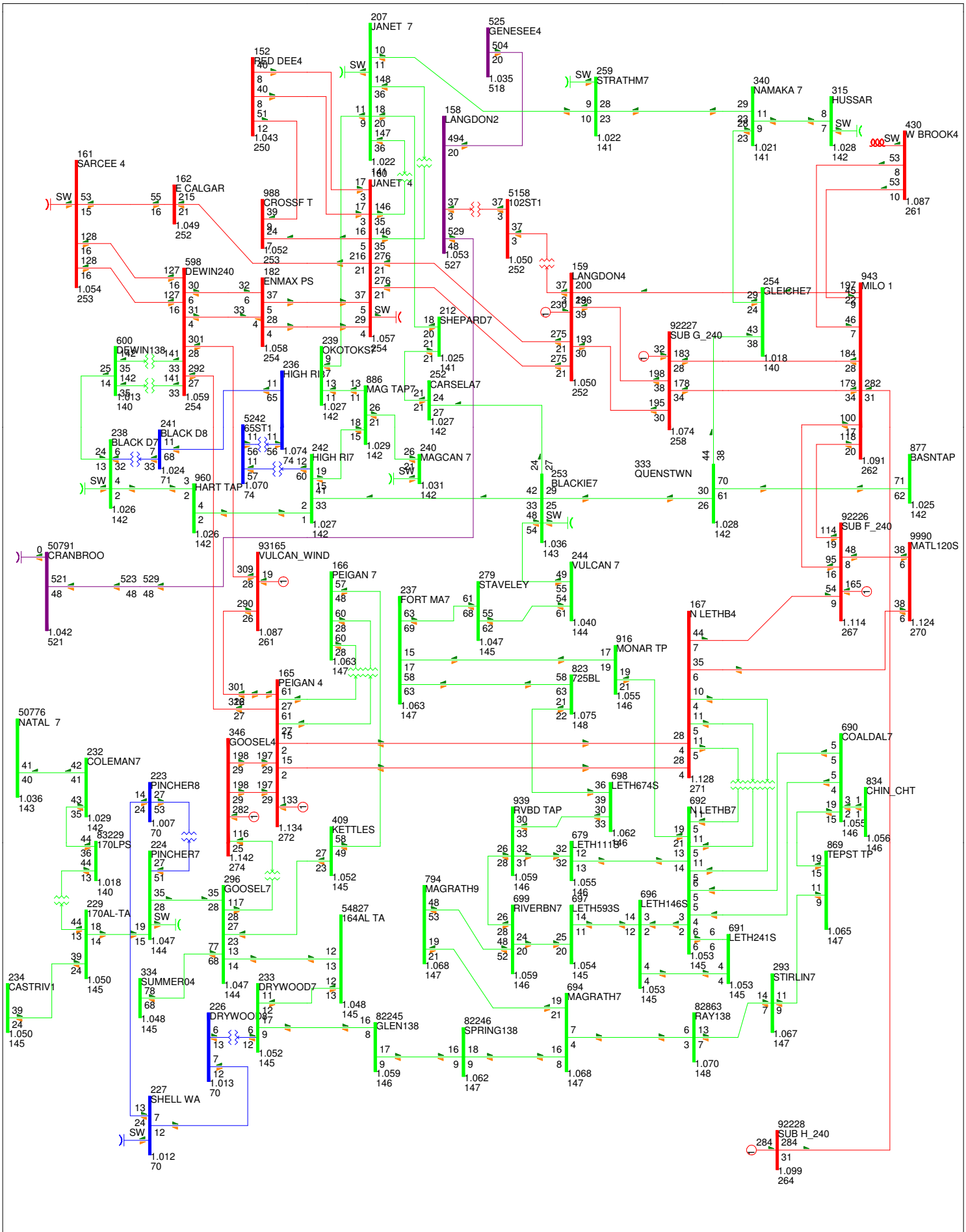
ALTERNATIVE 2

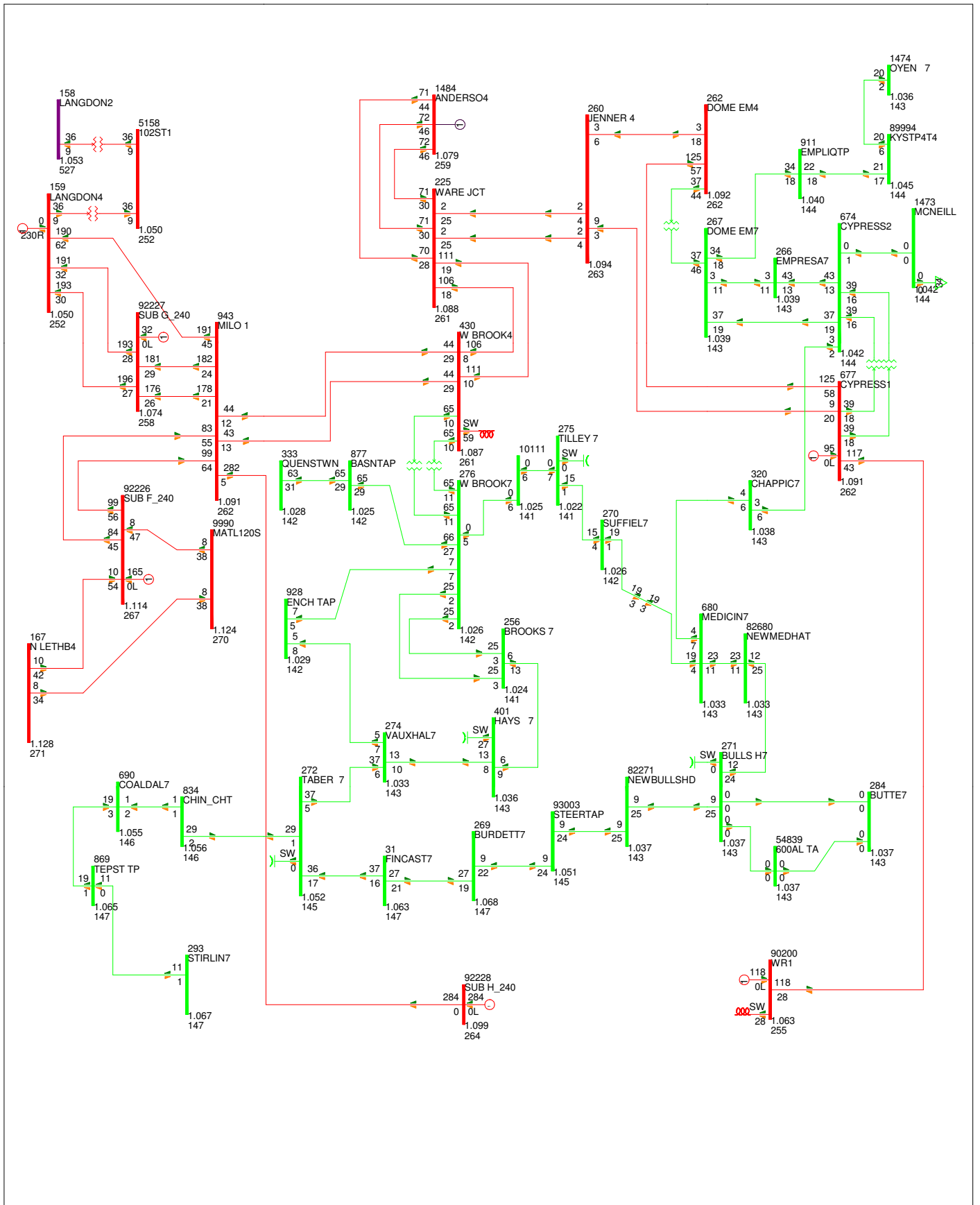
Fig 2013-SL-8

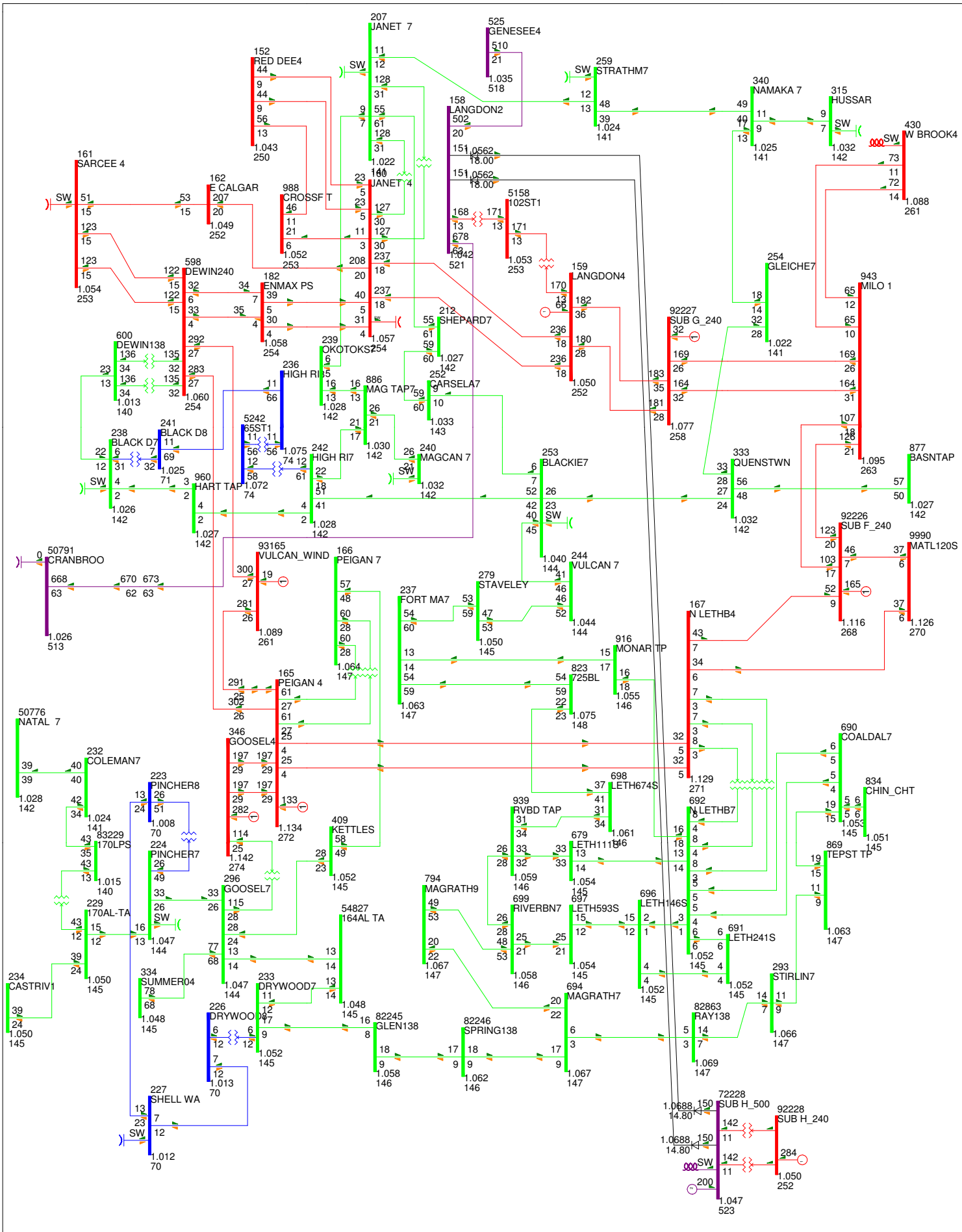
Bus: VOLTAGE (V) (P) (M)
 Branch: MW (W) (M)
 Equipment: MW (W) (M)
 P/W: MW (W) (M) <--> 49,000 <--> 130,000 <--> 240,000 <--> 500,000 <--> 600,000 <--> 600,000

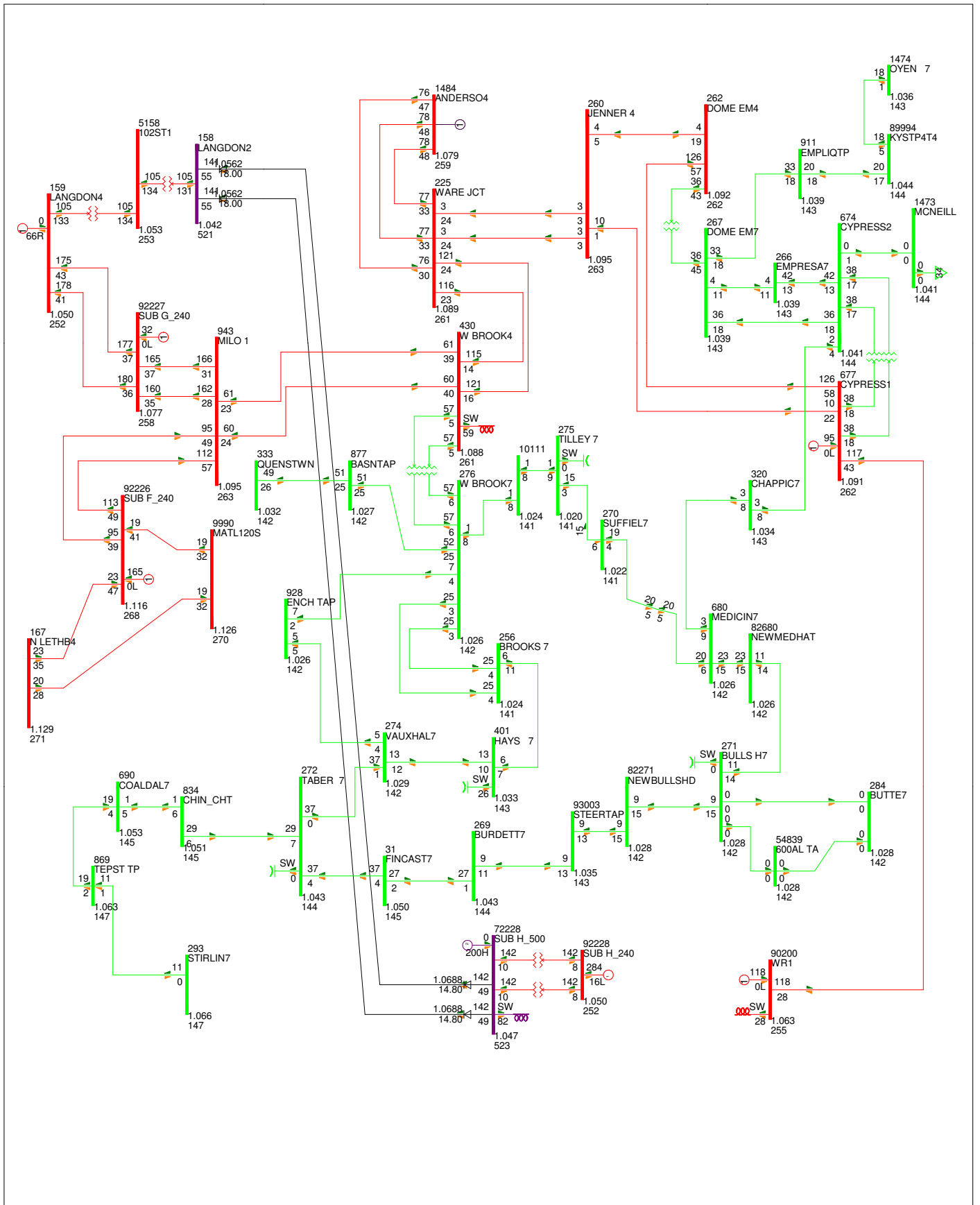
BC Export: 705 MW











GENERATION DISPATCH REPORT

GROSS COAL GEN. 6241.0 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 492.5 MW

GROSS FUTURE WIND GEN. IN SOUTH 1128.0 MW

FORT MCMURRAY GEN.

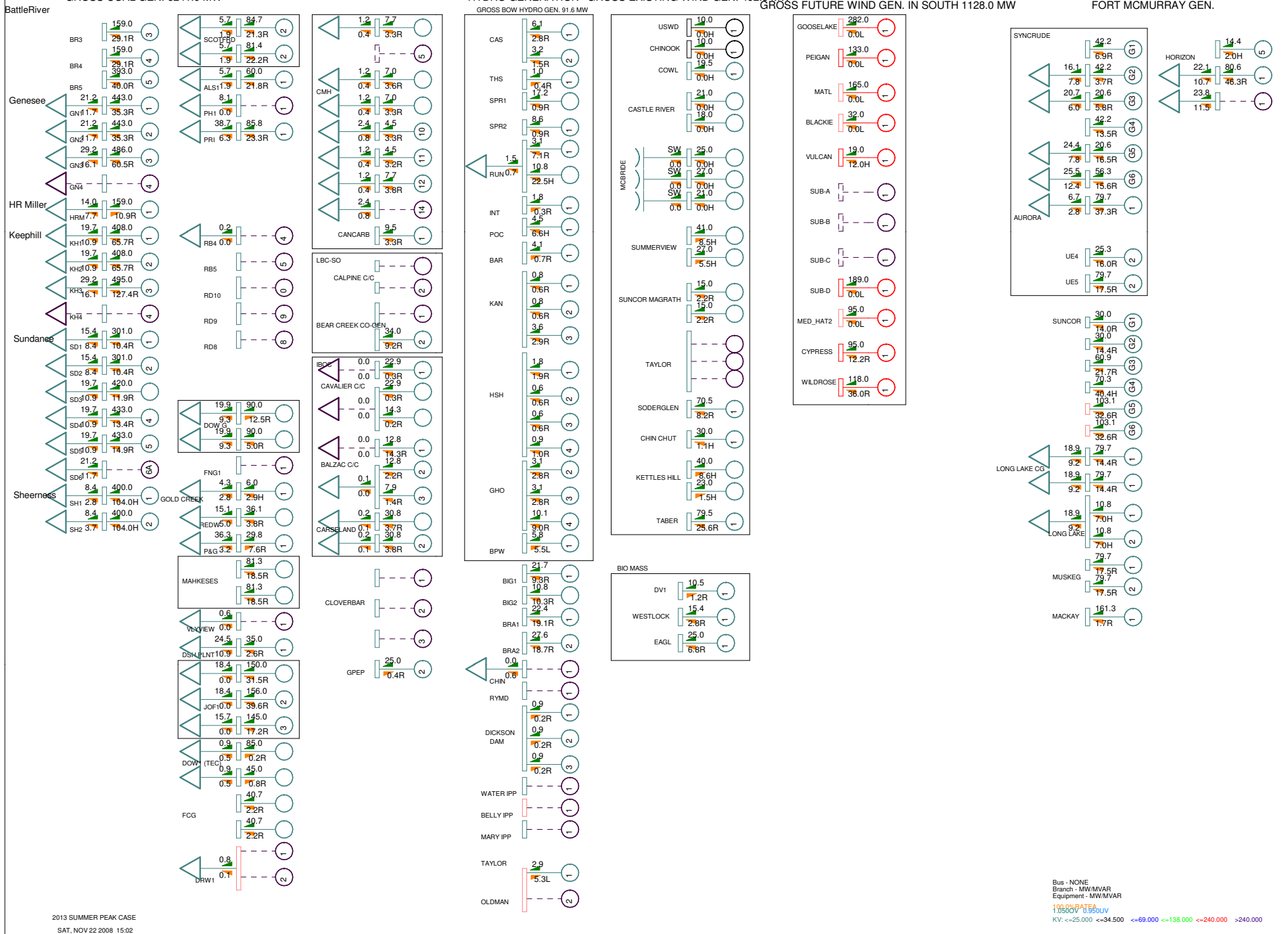
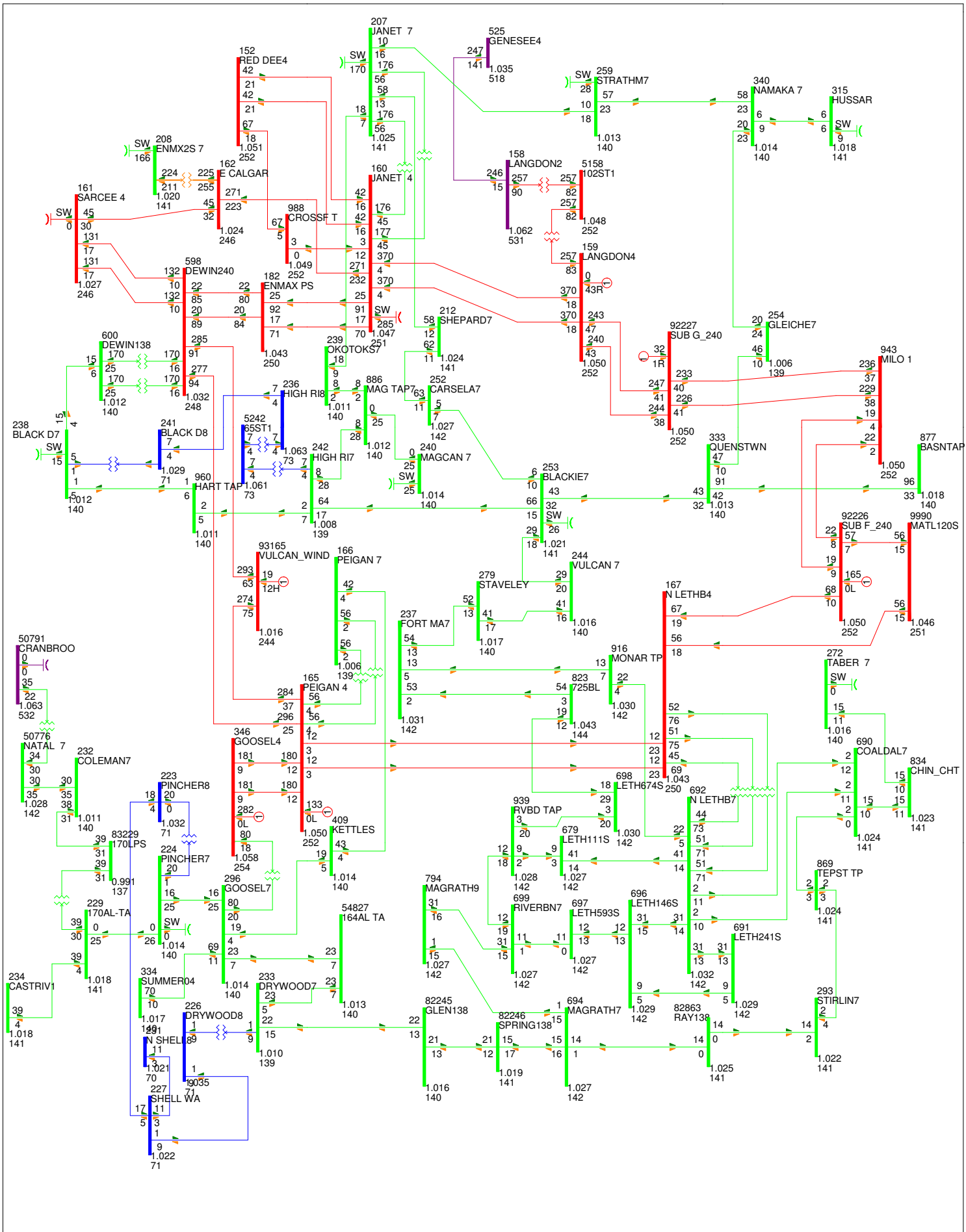


Fig 2013-SP-1



2013 SUMMER PEAK CASE

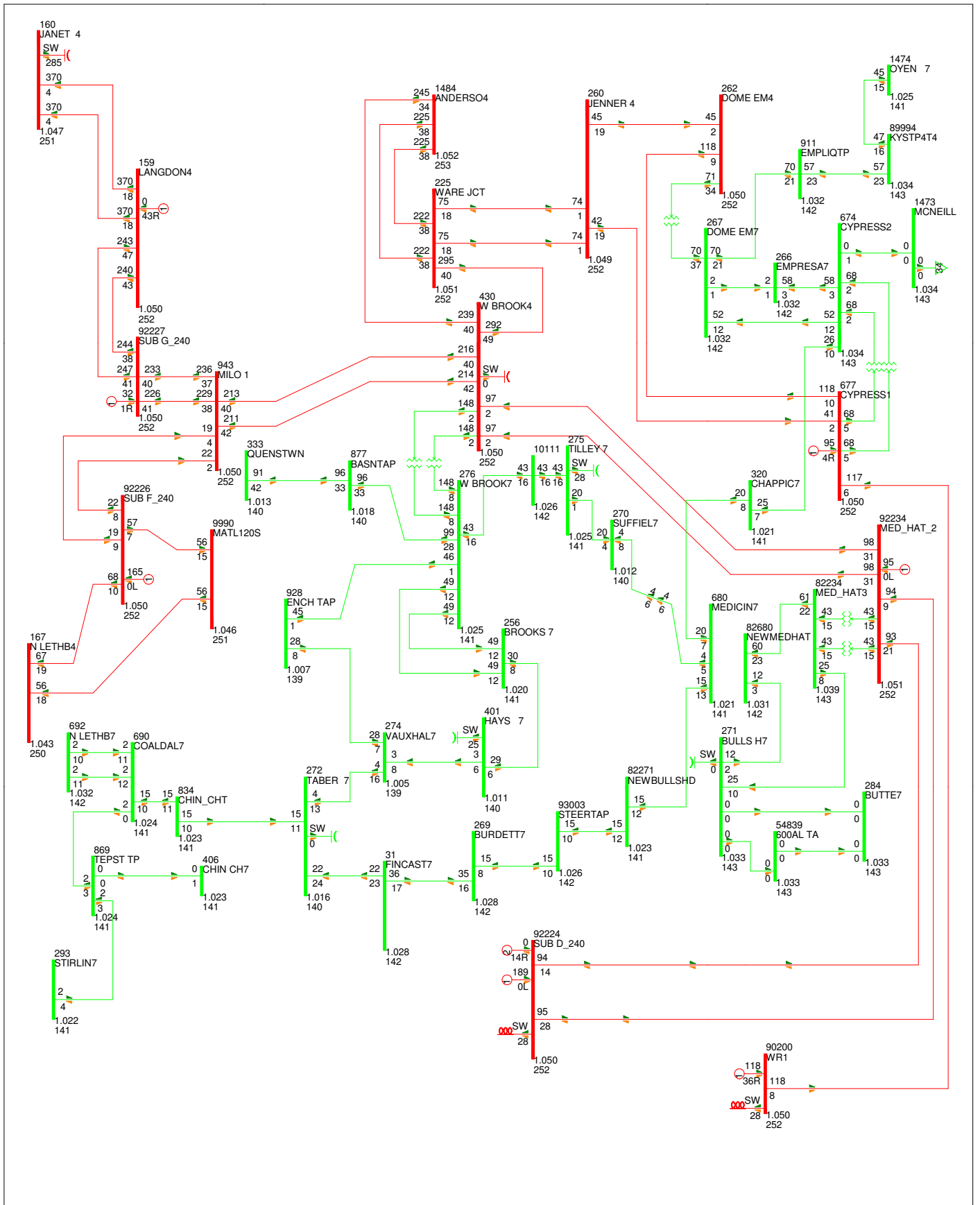
2013 South West System SAT, DEC 13 2008 14:51

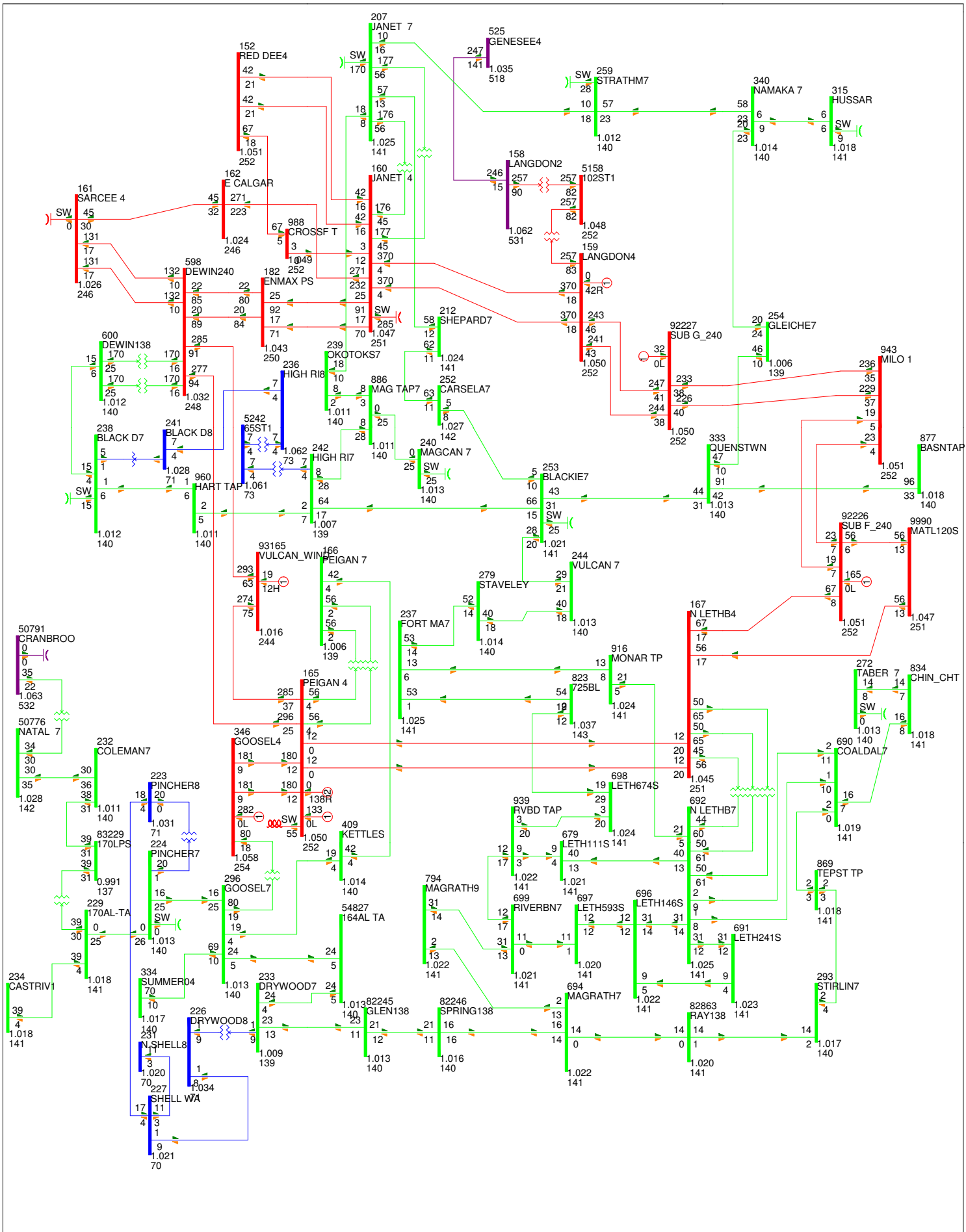
ALTERNATIVE 1A

Fig 2013-SP-2

Bus: VOLTAGE (V/MVA)
 Branch: MW/MVA
 Equipment: MW/MVA
 100-200000
 100-200000 -100.000 -200.000 -300.000 -400.000 -500.000

BC Export: -3 MW





2013 SUMMER PEAK CASE

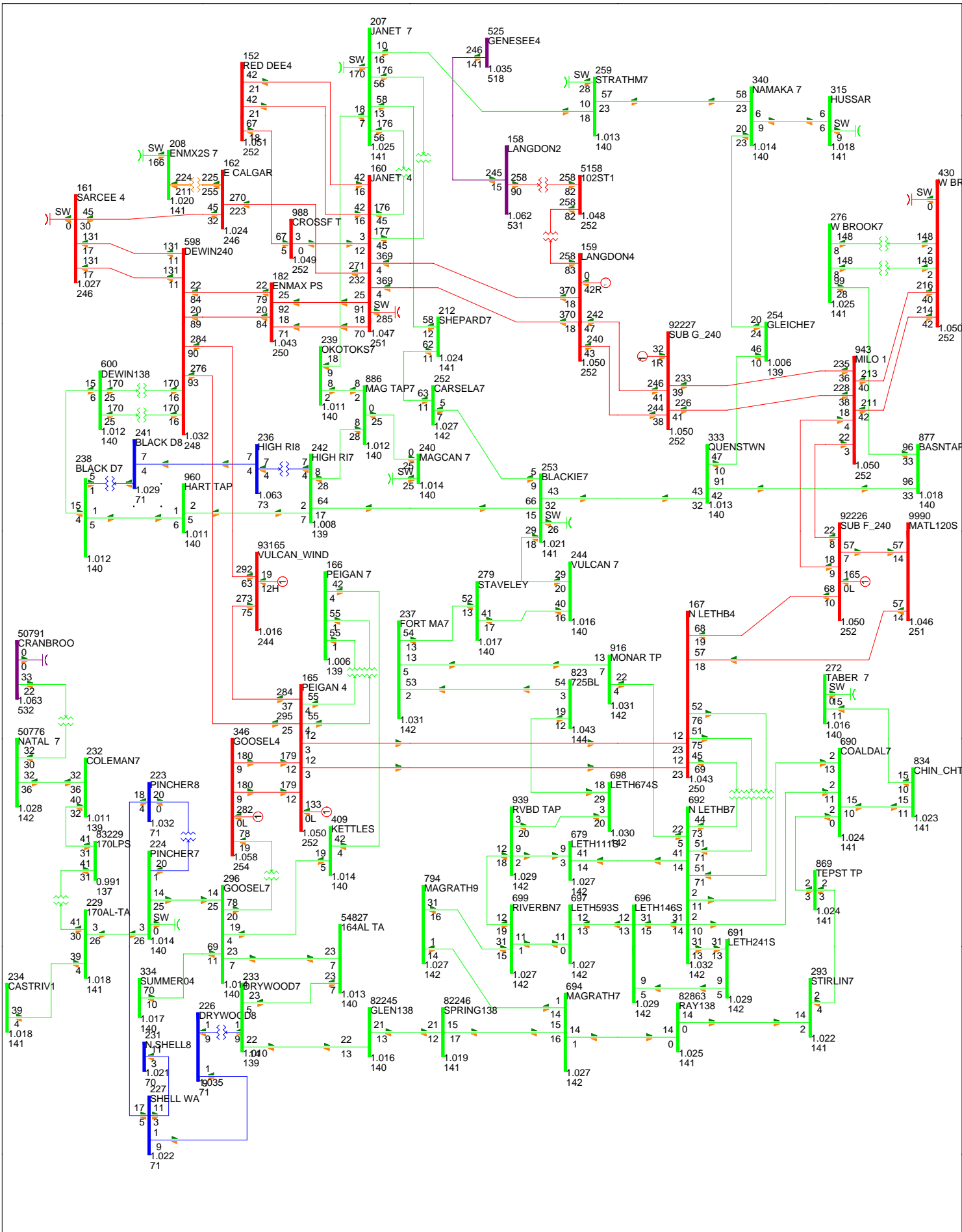
2013 South West System SAT, DEC 13 2008 14:51

ALTERNATIVE 1B

Fig 2013-SP-4

Bus: VOLTAGE (V/MVA)
Branch: MW/MVAR
Equipment: MW/MVAR
Flow: MW/MVA
Flow: MW/MVA
Flow: MW/MVA
Flow: MW/MVA
Flow: MW/MVA

BC Export: -3 MW



2013 SUMMER PEAK CASE

2013 South West System SAT, DEC 13 2008 14:54

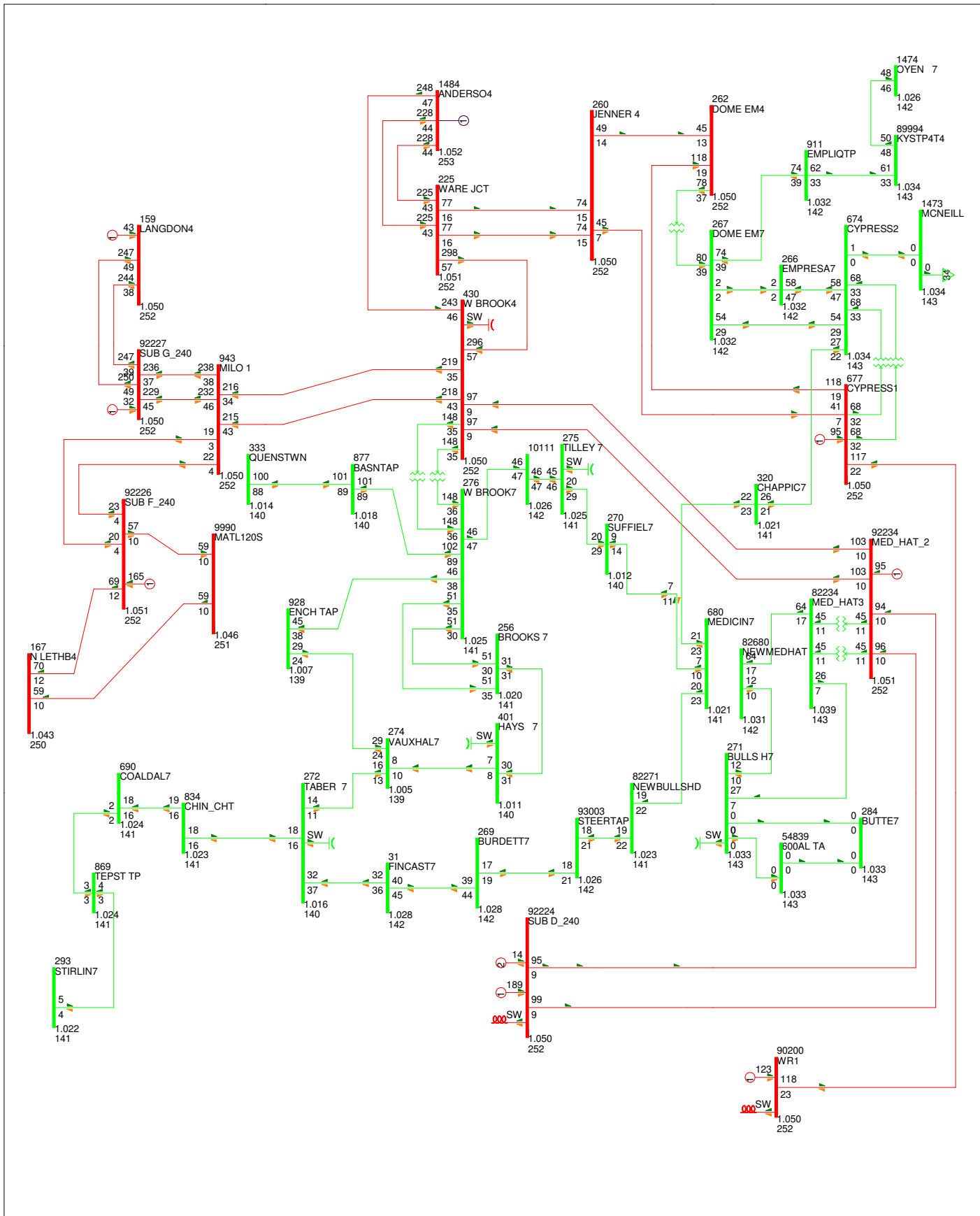
ALTERNATIVE 1C

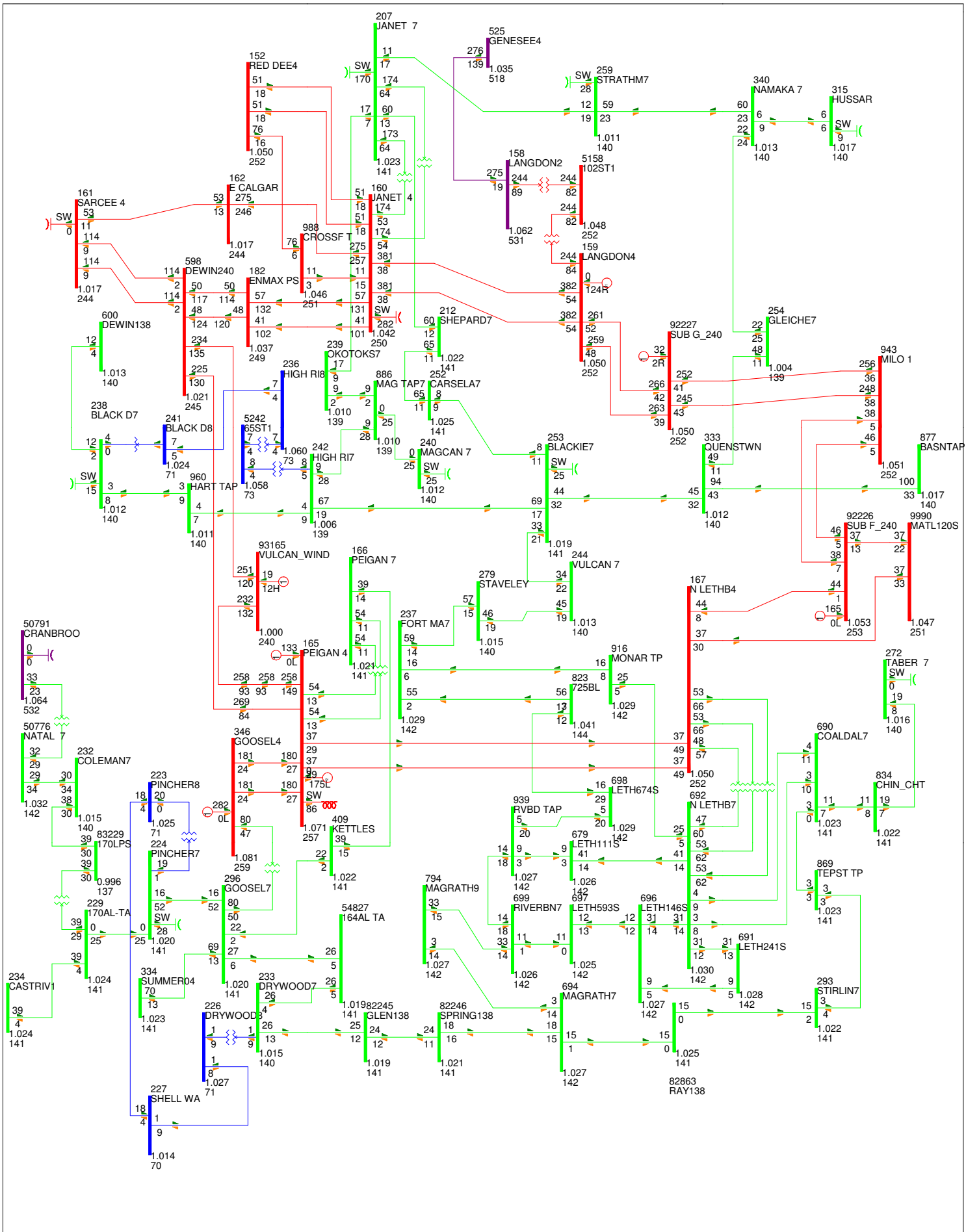
Fig 2013-SP-6

Bus - VOLTAGE (KV) / PVI
 Branch - MW / MVAR
 Equipment - MW / MVAR

0.0000000000000000 0.0000000000000000
 0.0000000000000000 0.0000000000000000

BC Export: -2 MW





2013 SUMMER PEAK CASE

2013 South West System SAT, DEC 13 2008 14:51

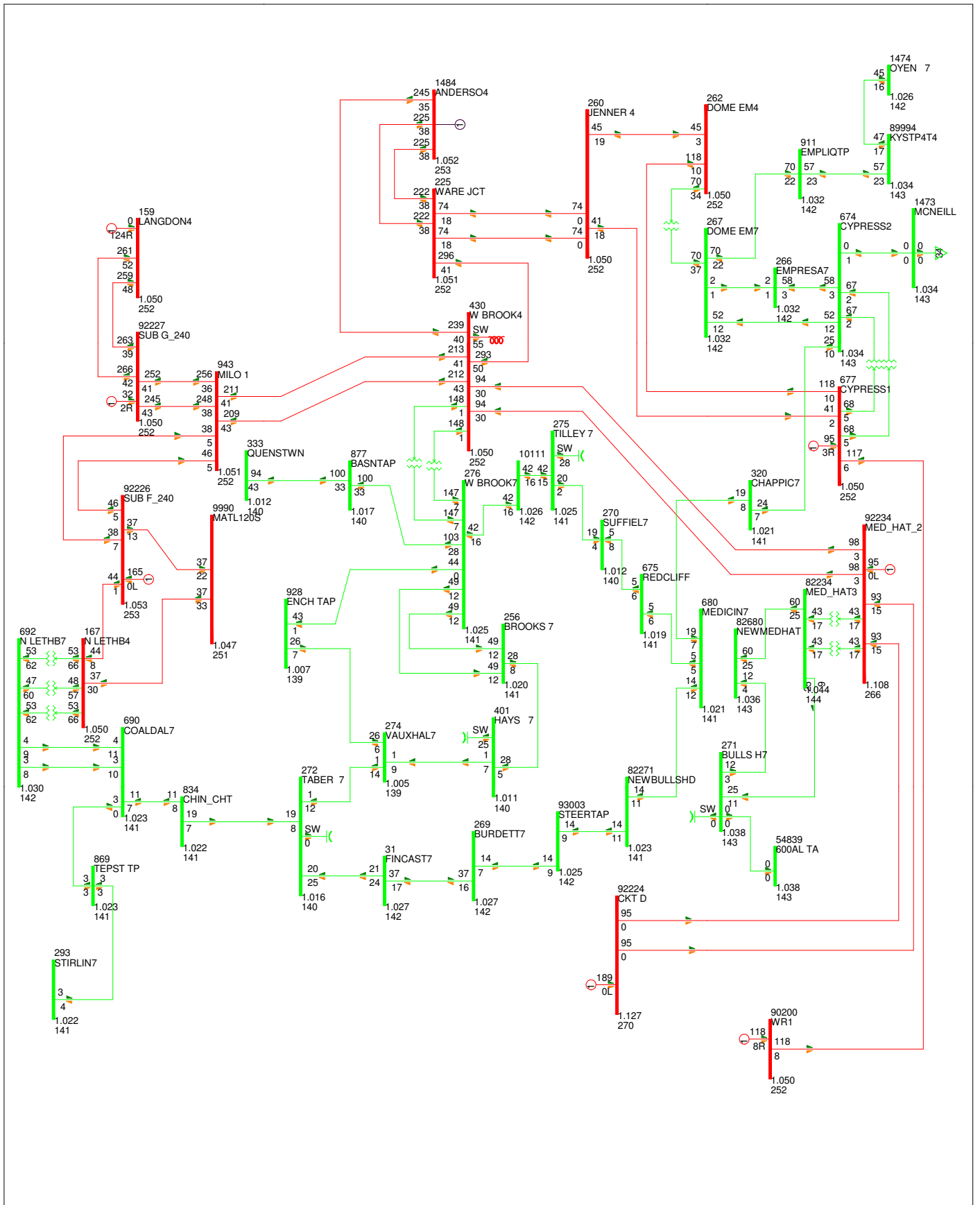
ALTERNATIVE 2

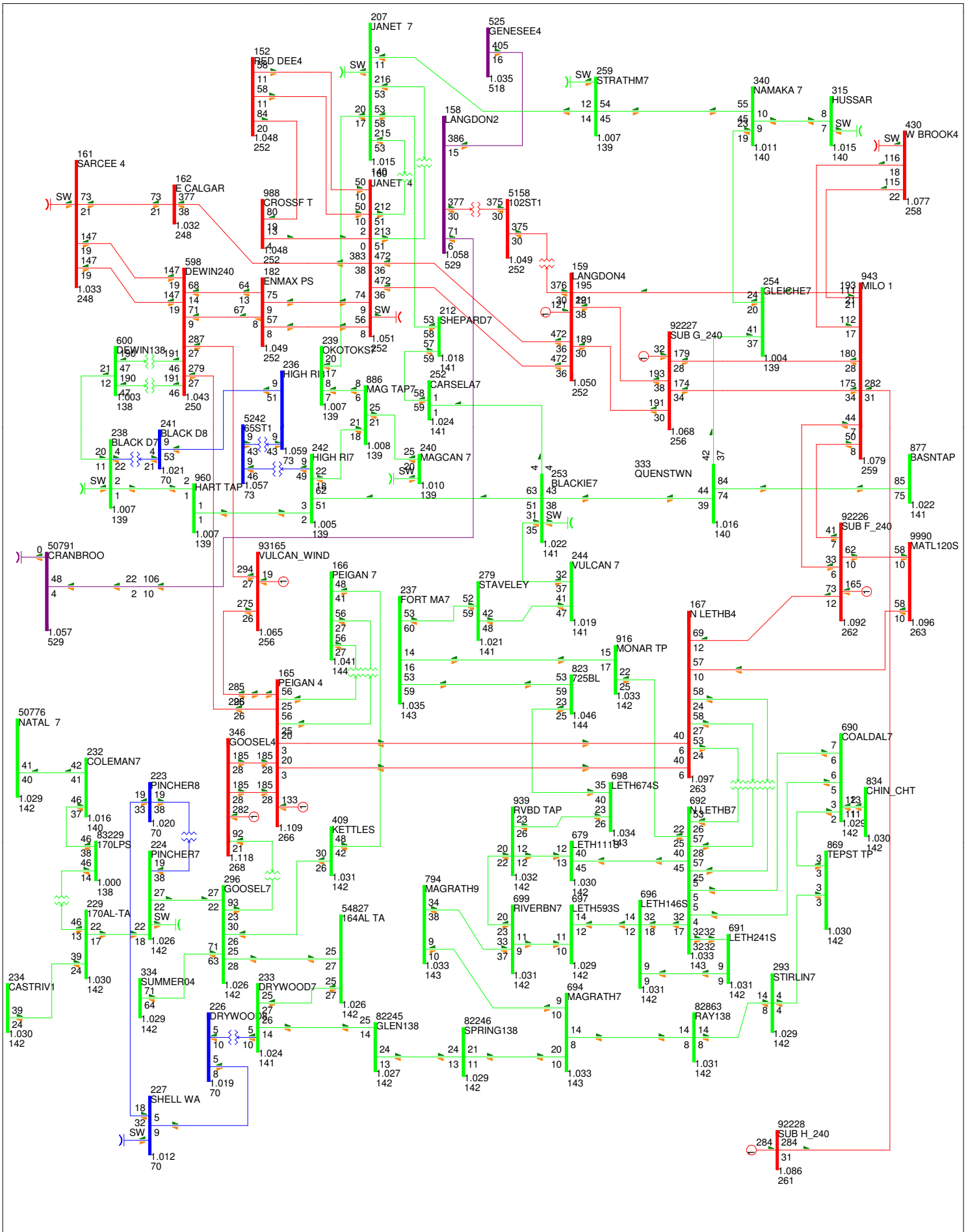
Fig 2013-SP-8

Bus: VOLTAGE (V/MVA)
Branch: MW/MVA
Equipment: MW/MVA

0.0-2000.0
0.0-1000.0-400.000-100.000-400.000-400.000

BC Export: 41 MW





2013 SUMMER PEAK CASE

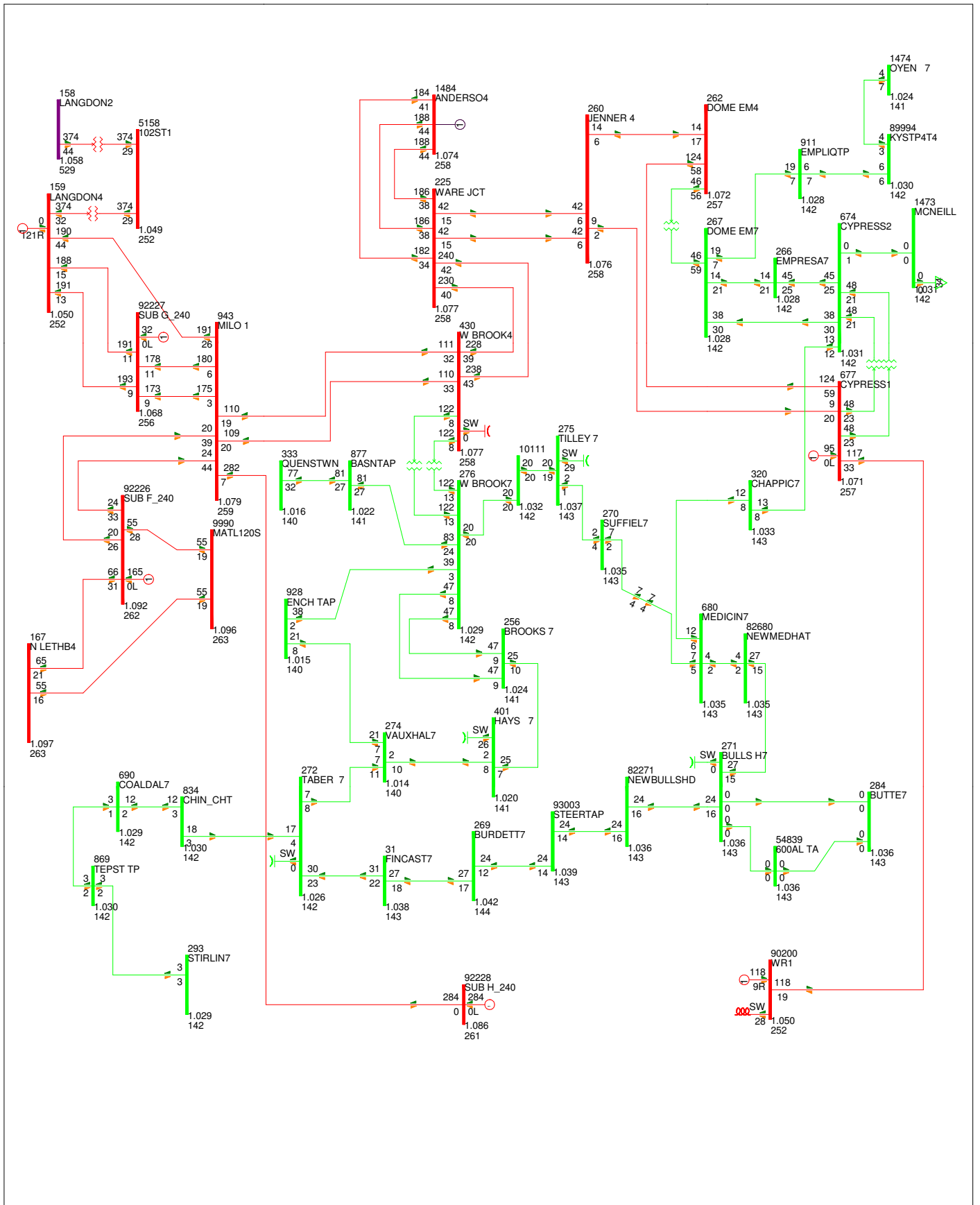
2013 South West System SAT, DEC 13 2008 14:51

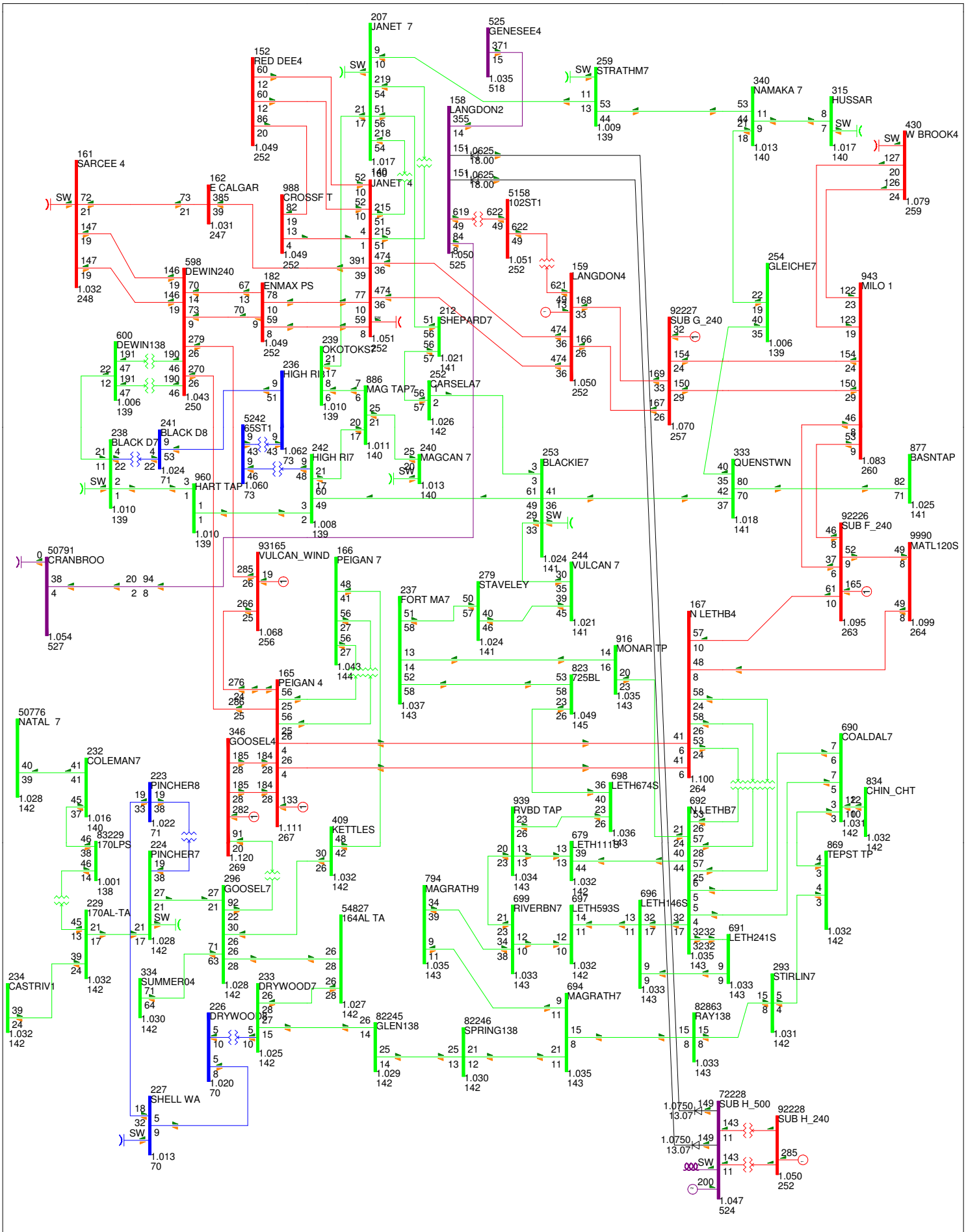
ALTERNATIVE 3

Fig 2013-SP-10

BC Hydro
 2013 Summer Peak Case
 115kV, 69kV, 33kV, 15kV
 115kV: 115.000 - 115.000 - 115.000 - 115.000
 69kV: 69.000 - 69.000 - 69.000 - 69.000
 33kV: 33.000 - 33.000 - 33.000 - 33.000
 15kV: 15.000 - 15.000 - 15.000 - 15.000

BC Export: 11 MW





2013 SUMMER PEAK CASE

2013 South West System SAT, DEC 13 2008 14:51

ALTERNATIVE 4

Fig 2013-SP-12

BC Hydro
 100% Renewable
 100% Hydro
 100% Wind
 100% Solar
 100% Geothermal
 100% Biomass
 100% Nuclear
 100% Coal
 100% Oil
 100% Gas
 100% Nuclear
 100% Coal
 100% Oil
 100% Gas

BC Export: 19 MW

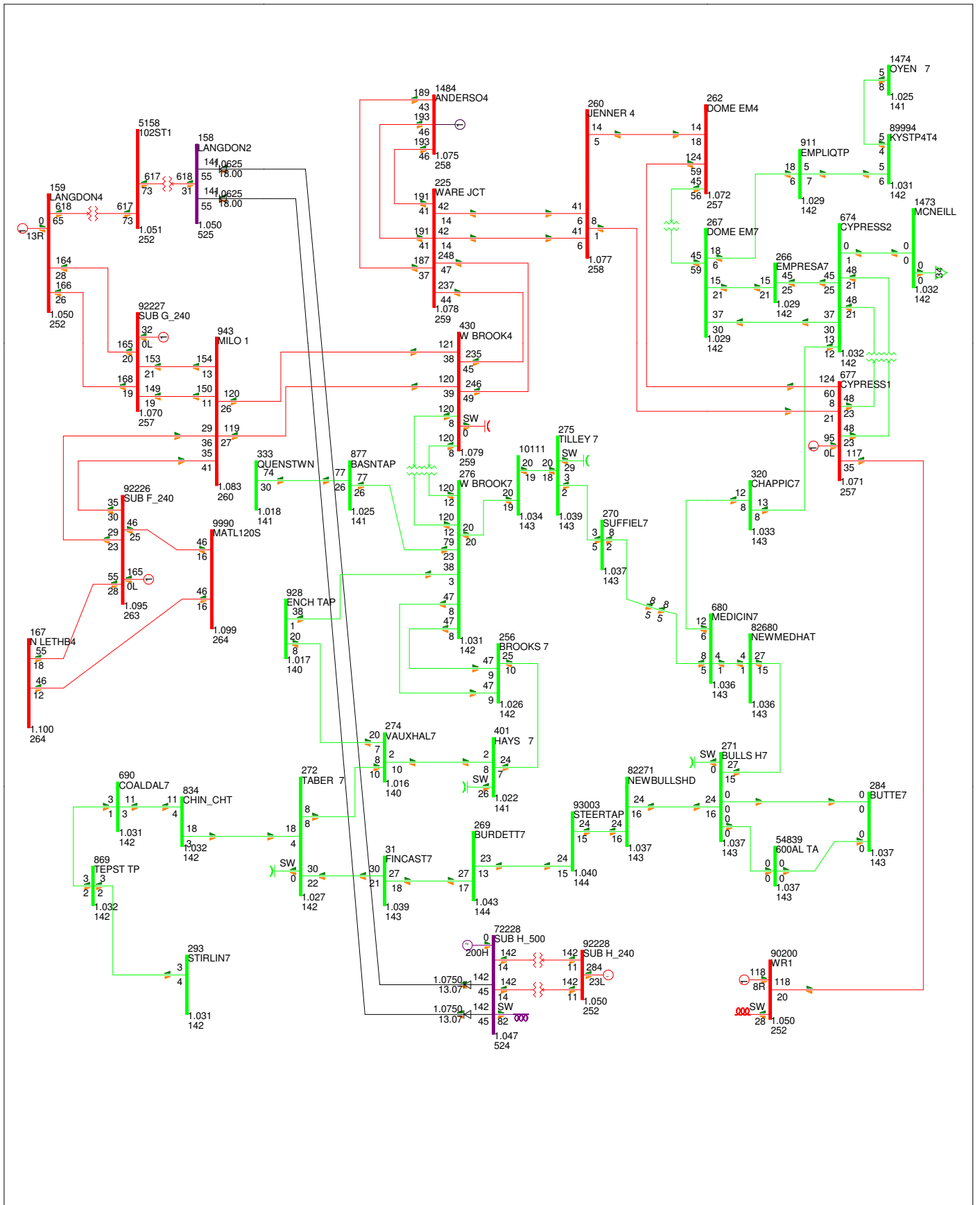


Table D-2: Summary of 2017 Summer Light Contingency Analysis – Alternative 1A

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1A-SL-6/7	500/240kV Transformer at New Crowsnest	None	N/A	None
Fig 2017-1A-SL-8/9	500/240kV Transformer at Langdon 102S	None	N/A	None
Fig 2017-1A-SL-10/11	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-1A-SL-12/13	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1A-SL-14/15	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1A-SL-16/17	240kV Line C1 Goose Lake 103S to Sub C	None	N/A	None
Fig 2017-1A-SL-18/19	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-20/21	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1A-SL-22/23	240kV 923L Milo JK to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SL-24/25	240kV 924L Milo JK to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-26/27	240kV Line D MATL 120S to Sub C	None	N/A	None
Fig 2017-1A-SL-28/29	240kV Line E Sub C to Sub D	None	N/A	None
Fig 2017-1A-SL-30/31	240kV Line G - W. Brook 28S to MH2 41S	None	N/A	None
Fig 2017-1A-SL-32/33	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-1A-SL-34/35	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None
Fig 2017-1A-SL-36/37	240kV 945L Dome Empress 163S to Cypress	None	N/A	None

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-38/39	240kV 934L W. Junction 132S to Anderson 810S	None	N/A	None
Fig 2017-1A-SL-40/41	240/138kV Transformer at Goose Lake 102S	None	N/A	None
Fig 2017-1A-SL-42/43	240/138kV Transformer at Peigan 59S	None	N/A	None
Fig 2017-1A-SL-44/45	240/138kV Transformer at Dome Empress 163S	None	N/A	None
Fig 2017-1A-SL-46/47	240/138kV Transformer at Cypress	None	N/A	None
Fig 2017-1A-SL-48/49	138kV 164L Peigan 59S to Drywood 415S	None	N/A	None
Fig 2017-1A-SL-50/51	138kV 100L Brooks 121S to Tiley 498S	None	N/A	None
Fig 2017-1A-SL-52/53	138kV 760L MH 41S to Chappice Lake 649S	None	N/A	None
Fig 2017-1A-SL-54/55	138kV MH 41S to Burdett 368S	None	N/A	None
Fig 2017-1A-SL-56/57	138kV 727L High River 65S to Okotoks to 678S	None	N/A	None
Fig 2017-1A-SL-58/59	138kV 850L Janet 74S to Carseland 525S	None	N/A	None
Fig 2017-1A-SL-60/61	138kV 852L Blackie to Queenstown 504S	None	N/A	None
Fig 2017-1A-SL-62/63	138kV 170L Peigan 59S to Goose Lake 103S	None	N/A	None
Fig 2017-1A-SL-64/65	138kV 863L Riverbend 618S to Magrath 225	None	N/A	None

Table D-3: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1A

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1A-SP-6/7	500/240kV Transformer at New Crowsnest	None	N/A	None
Fig 2017-1A-SP-8/9	500/240kV Transformer at Langdon 102S	None	N/A	None
Fig 2017-1A-SP-10/11	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-1A-SP-12/13	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1A-SP-14/15	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1A-SP-16/17	240kV Line C1 Goose Lake 103S to Sub C	None	N/A	None
Fig 2017-1A-SP-18/19	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-20/21	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1A-SP-22/23	240kV 923L Milo JK to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SP-24/25	240kV 924L Milo JK to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-26/27	240kV Line D MATL 120S to Sub C	None	N/A	None
Fig 2017-1A-SP-28/29	240kV Line E Sub C to Sub D	None	N/A	None
Fig 2017-1A-SP-30/31	240kV Line G - W. Brook 28S to MH2 41S	None	N/A	None
Fig 2017-1A-SP-32/33	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-1A-SP-34/35	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None
Fig 2017-1A-SP-36/37	240kV 945L Dome Empress 163S to Cypress	None	N/A	None

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP-38/39	240kV 934L W. Junction 132S to Anderson 810S	None	N/A	None
Fig 2017-1A-SP-40/41	240/138kV Transformer at Goose Lake 102S	None	N/A	None
Fig 2017-1A-SP-42/43	240/138kV Transformer at Peigan 59S	None	N/A	None
Fig 2017-1A-SP-44/45	240/138kV Transformer at Dome Empress 163S	None	N/A	None
Fig 2017-1A-SP-46/47	240/138kV Transformer at Cypress	None	N/A	None
Fig 2017-1A-SP-48/49	138kV 164L Peigan 59S to Drywood 415S	None	N/A	None
Fig 2017-1A-SP-50/51	138kV 100L Brooks 121S to Tiley 498S	None	N/A	None
Fig 2017-1A-SP-52/53	138kV 760L MH 41S to Chappice Lake 649S	None	N/A	None
Fig 2017-1A-SP-54/55	138kV MH 41S to Burdett 368S	None	N/A	None
Fig 2017-1A-SP-56/57	138kV 727L High River 65S to Okotoks to 678S	None	N/A	None
Fig 2017-1A-SP-58/59	138kV 850L Janet 74S to Carseland 525S	None	N/A	None
Fig 2017-1A-SP-60/61	138kV 852L Blackie to Queenstown 504S	None	N/A	None
Fig 2017-1A-SP-62/63	138kV 170L Peigan 59S to Goose Lake 103S	None	N/A	None
Fig 2017-1A-SP-64/65	138kV 863L Riverbend 618S to Magrath 225	None	N/A	None

Table D-4: Summary of 2017 Summer Light Contingency Analysis – Alternative 1B

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1B-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-1B-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-1B-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1B-SL-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-1B-SL-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1B-SL-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1B-SL-12/13	240kV Line C2 Goose Lake 102S to Sub C	None	N/A	None
Fig 2017-1B-SL-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1B-SL-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1B-SL-18/19	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-1B-SL-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-5: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1B

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1B-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-1B-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-1B-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1B-SP-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-1B-SP-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1B-SP-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1B-SP-12/13	240kV Line C2 Goose Lake 102S to Sub C	None	N/A	None
Fig 2017-1B-SP-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1B-SP-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1B-SP-18/19	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-1B-SP-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-6: Summary of 2017 Summer Light Contingency Analysis – Alternative 1C

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1C-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-1C-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-1C-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1C-SL-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-1C-SL-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1C-SL-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1C-SL-12/13	240kV Line C2 Goose Lake 102S to Sub C	None	N/A	None
Fig 2017-1C-SL-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1C-SL-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1C-SL-18/19	240kV Line K W. Brooks 28S to Dewinton	None	N/A	None
Fig 2017-1C-SL-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-7: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1C

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1C-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-1C-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-1C-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-1C-SP-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-1C-SP-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-1C-SP-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-1C-SP-12/13	240kV Line C2 Goose Lake 102S to Sub C	None	N/A	None
Fig 2017-1C-SP-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1C-SP-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-1C-SP-18/19	240kV Line K W. Brooks 28S to Dewinton	None	N/A	None
Fig 2017-1C-SP-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-8: Summary of 2017 Summer Light Contingency Analysis – Alternative 2

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-2-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-2-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-2-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-2-SL-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-2-SL-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-2-SL-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-2-SL-12/13	240kV Line D2 MATL 120S to Sub C	None	N/A	None
Fig 2017-2-SL-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-2-SL-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-2-SL-18/19	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-2-SL-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-9: Summary of 2017 Summer Peak Contingency Analysis – Alternative 2

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-2-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-2-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-2-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-2-SP-6/7	240kV New Crowsnest to Goose Lake 102S	None	N/A	None
Fig 2017-2-SP-8/9	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-2-SP-10/11	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-2-SP-12/13	240kV Line D2 MATL 120S to Sub C	None	N/A	None
Fig 2017-2-SP-14/15	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-2-SP-16/17	240kV 923L Milo JK to Langdon 102S	None	N/A	None
Fig 2017-2-SP-18/19	240kV Line H Langdon 102S to W. Junction 132S	None	N/A	None
Fig 2017-2-SP-20/21	240kV 931L W. Brooks 28S to W. Junction 132S	None	N/A	None

Table D-10: Summary of 2017 Summer Light Contingency Analysis – Alternative 3

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-3-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-3-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-3-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-3-SL-6/7	500/240kV Transformer at Langdon 102S	None	N/A	None
Fig 2017-3-SL-8/9	500/240kV Transformer at Milo	None	N/A	None
Fig 2017-3-SL-10/11	500kV Line X New Crowsnest to Sub D	None	N/A	None
Fig 2017-3-SL-12/13	500kV Line Y Milo to Sub D	None	N/A	None
Fig 2017-3-SL-14/15	500kV Line Z Langdon 102S to Milo	None	N/A	None
Fig 2017-3-SL-16/17	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-3-SL-18/19	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-3-SL-20/21	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None

Table D-11: Summary of 2017 Summer Peak Contingency Analysis – Alternative 3

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-3-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-3-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-3-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-3-SP-6/7	500/240kV Transformer at Langdon 102S	None	N/A	None
Fig 2017-3-SP-8/9	500/240kV Transformer at Milo	None	N/A	None
Fig 2017-3-SP-10/11	500kV Line X New Crowsnest to Sub D	None	N/A	None
Fig 2017-3-SP-12/13	500kV Line Y Milo to Sub D	None	N/A	None
Fig 2017-3-SP-14/15	500kV Line Z Langdon 102S to Milo	None	N/A	None
Fig 2017-3-SP-16/17	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-3-SP-18/19	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-3-SP-20/21	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None

Table D-12: Summary of 2017 Summer Light Contingency Analysis – Alternative 4

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-4-SL-1	Generation Dispatch	None	N/A	None
Fig 2017-4-SL-2/3	All Elements in Service	None	N/A	None
Fig 2017-4-SL-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-4-SL-6/7	500/240 kV Transformer at New Crowsnest	None	N/A	None
Fig 2017-4-SL-8/9	500kV HVDC Line from Langdon 102S to SUB D	None	N/A	None
Fig 2017-4-SL-10/11	500kV line Langdon 102S to Genesee	None	N/A	None
Fig 2017-4-SL-12/13	500/240kV Transformer at SUB H	None	N/A	None
Fig 2017-4-SL-14/15	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-4-SL-16/17	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-4-SL-18/19	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-4-SL-20/21	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None

Table D-13: Summary of 2017 Summer Peak Contingency Analysis – Alternative 4

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-4-SP-1	Generation Dispatch	None	N/A	None
Fig 2017-4-SP-2/3	All Elements in Service	None	N/A	None
Fig 2017-4-SP-4/5	500kV 1201L Langdon 102S to New Crowsnest	None	N/A	None
Fig 2017-4-SP-6/7	500/240 kV Transformer at New Crowsnest	None	N/A	None
Fig 2017-4-SP-8/9	500kV HVDC Line from Langdon 102S to SUB D	None	N/A	None
Fig 2017-4-SP-10/11	500kV line Langdon 102S to Genesee	None	N/A	None
Fig 2017-4-SP-12/13	500/240kV Transformer at SUB H	None	N/A	None
Fig 2017-4-SP-14/15	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-4-SP-16/17	240kV 955L Goose Lake 102S to Peigan 59S	None	N/A	None
Fig 2017-4-SP-18/19	240kV Line J Dewinton to Peigan 59S	None	N/A	None
Fig 2017-4-SP-20/21	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None

GENERATION DISPATCH REPORT

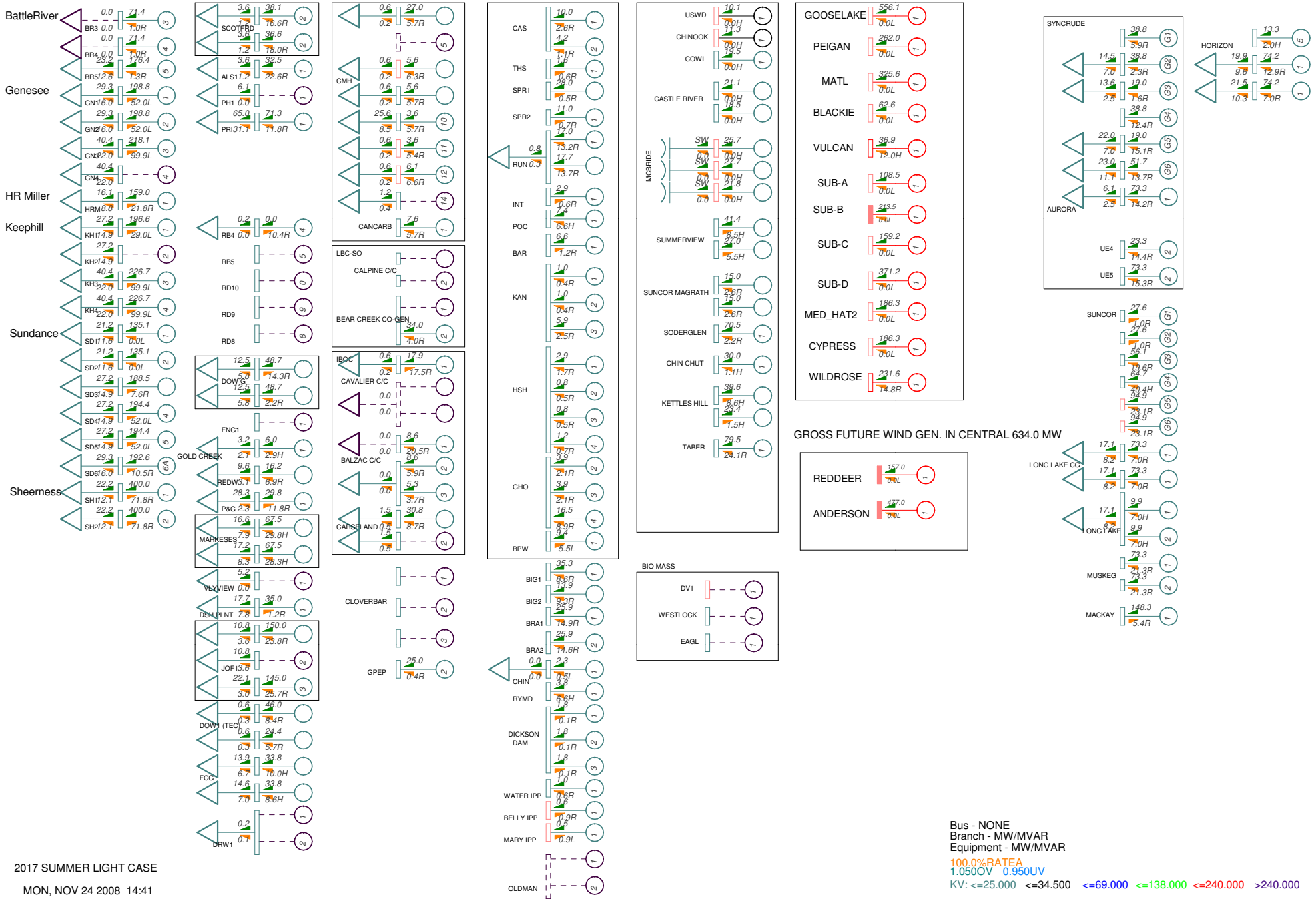
GROSS COAL GEN. 3584.0 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER LIGHT CASE
MON, NOV 24 2008 14:41

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0%PATEA
1.050OV 0.950UV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1A-SL-1

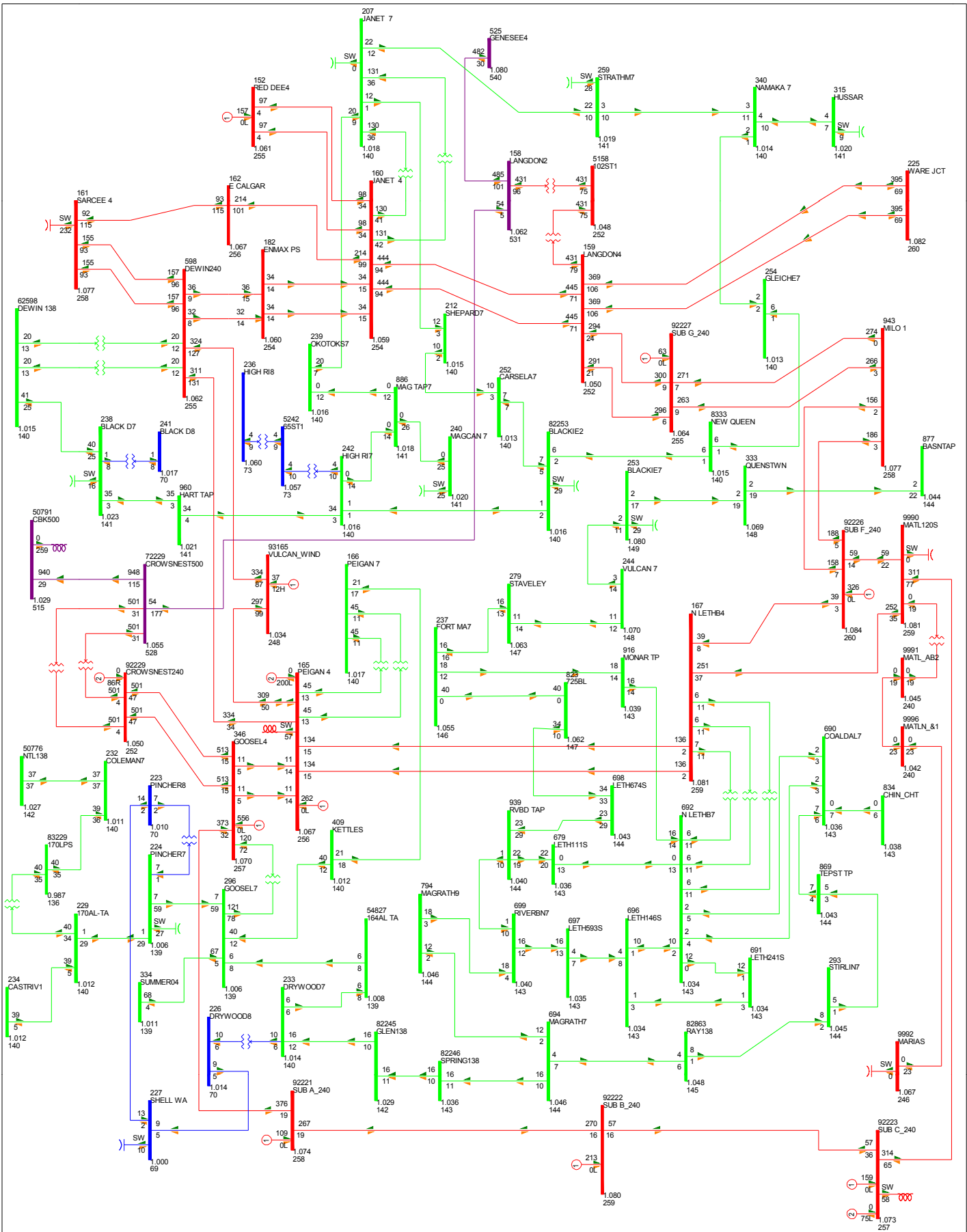


FIG 2017-1A-SL-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

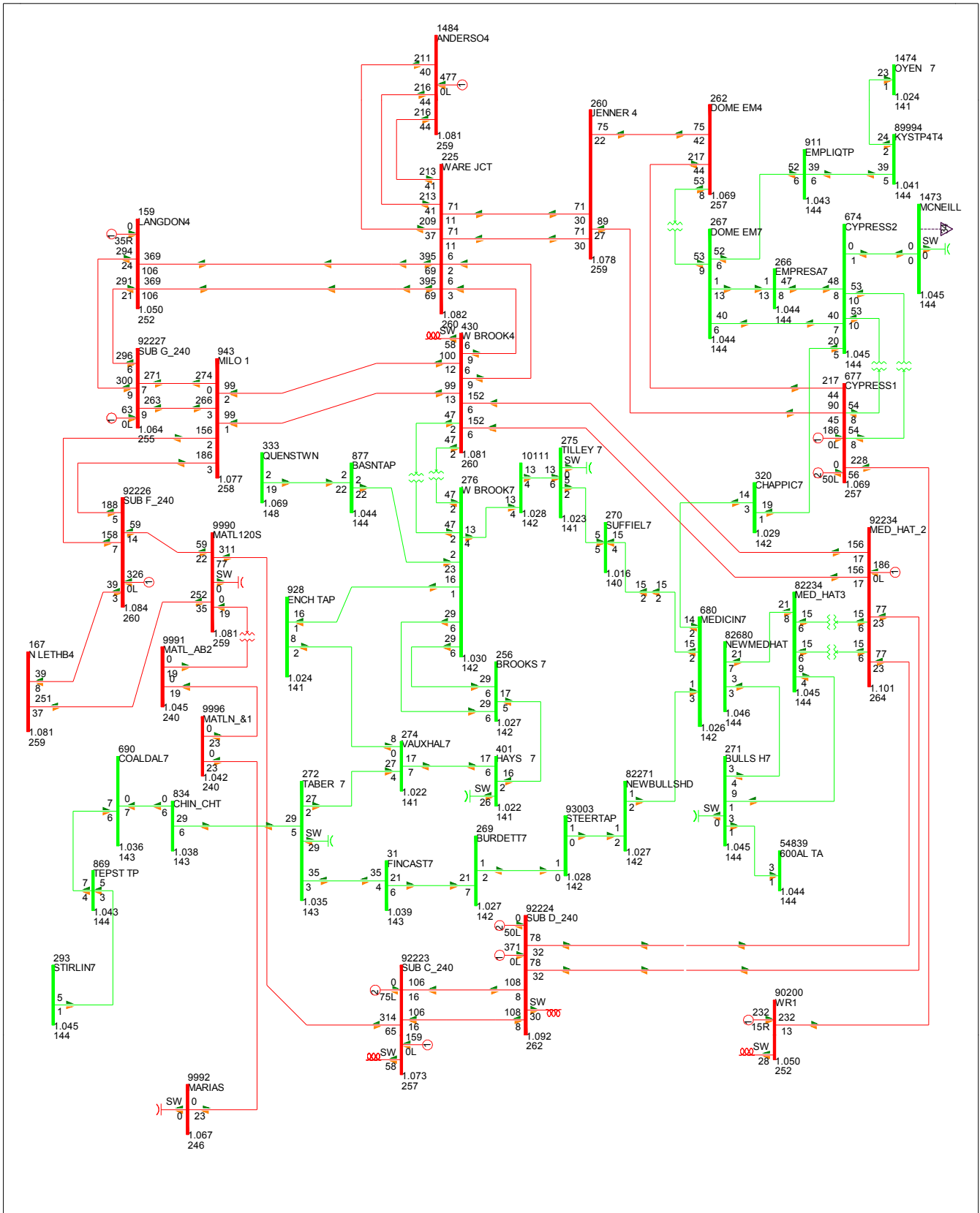


FIG 2017-1A-SL-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

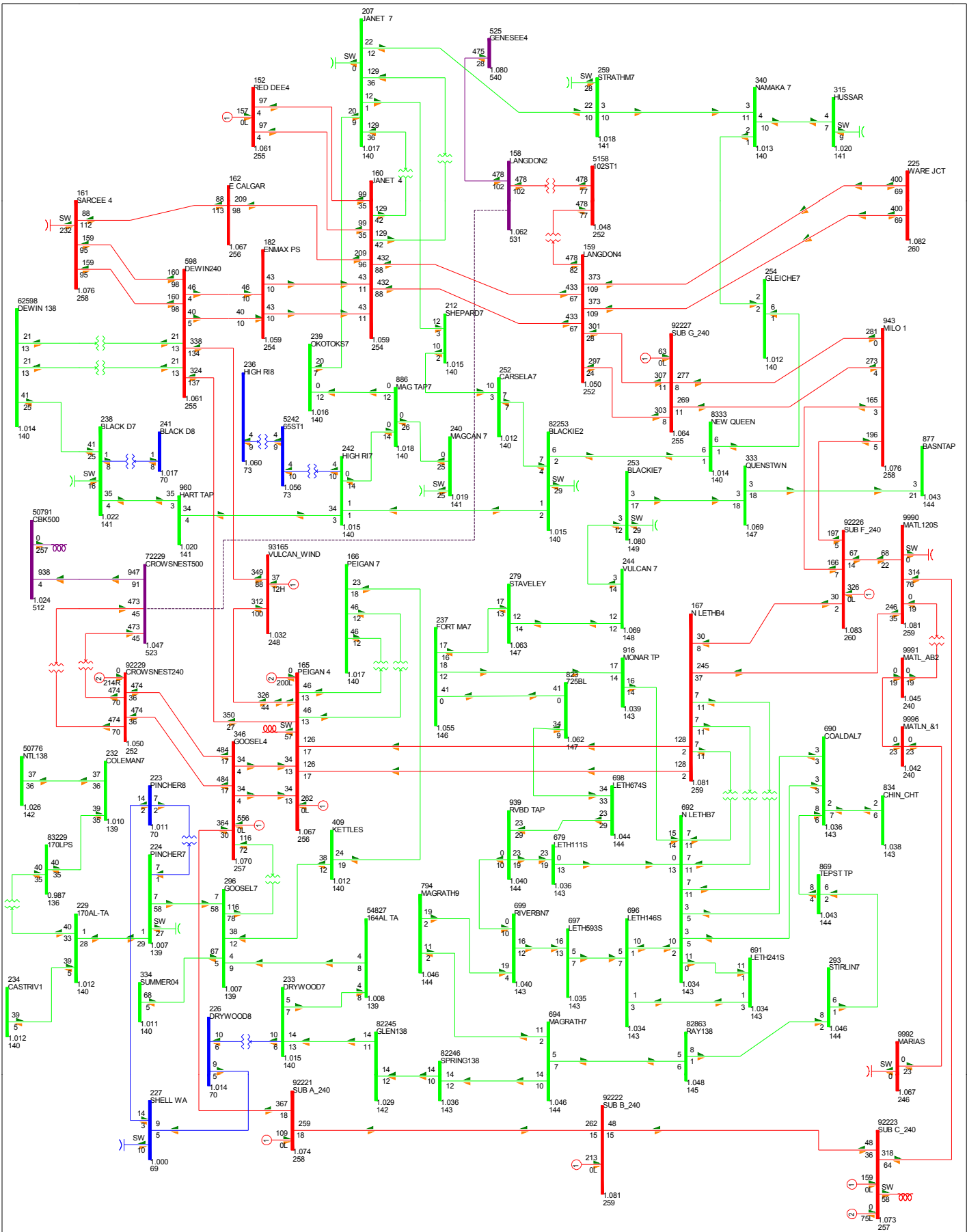


FIG 2017-1A-SL-4: LANGDON TO CROWSNEST 500 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

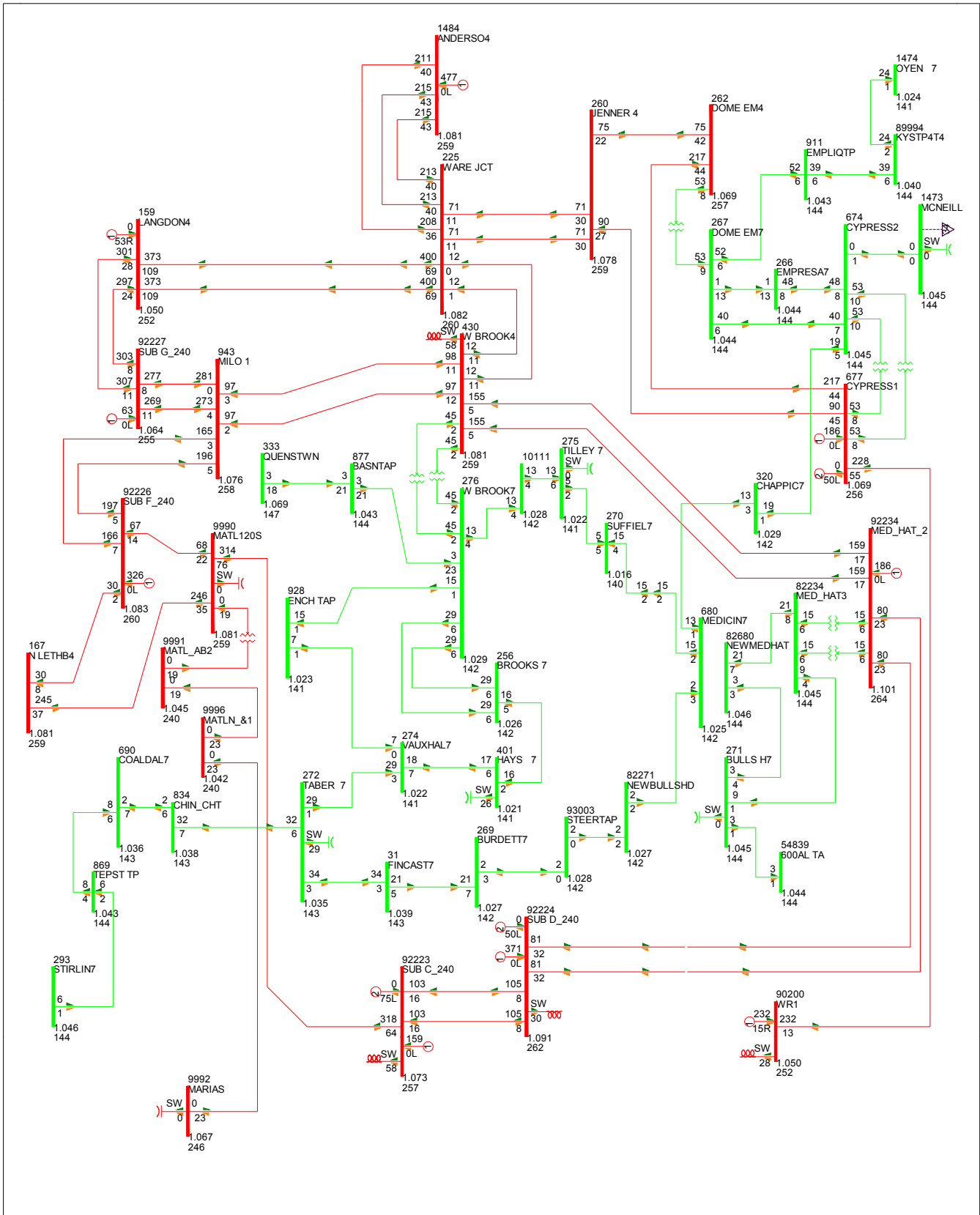


FIG 2017-1A-SL-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

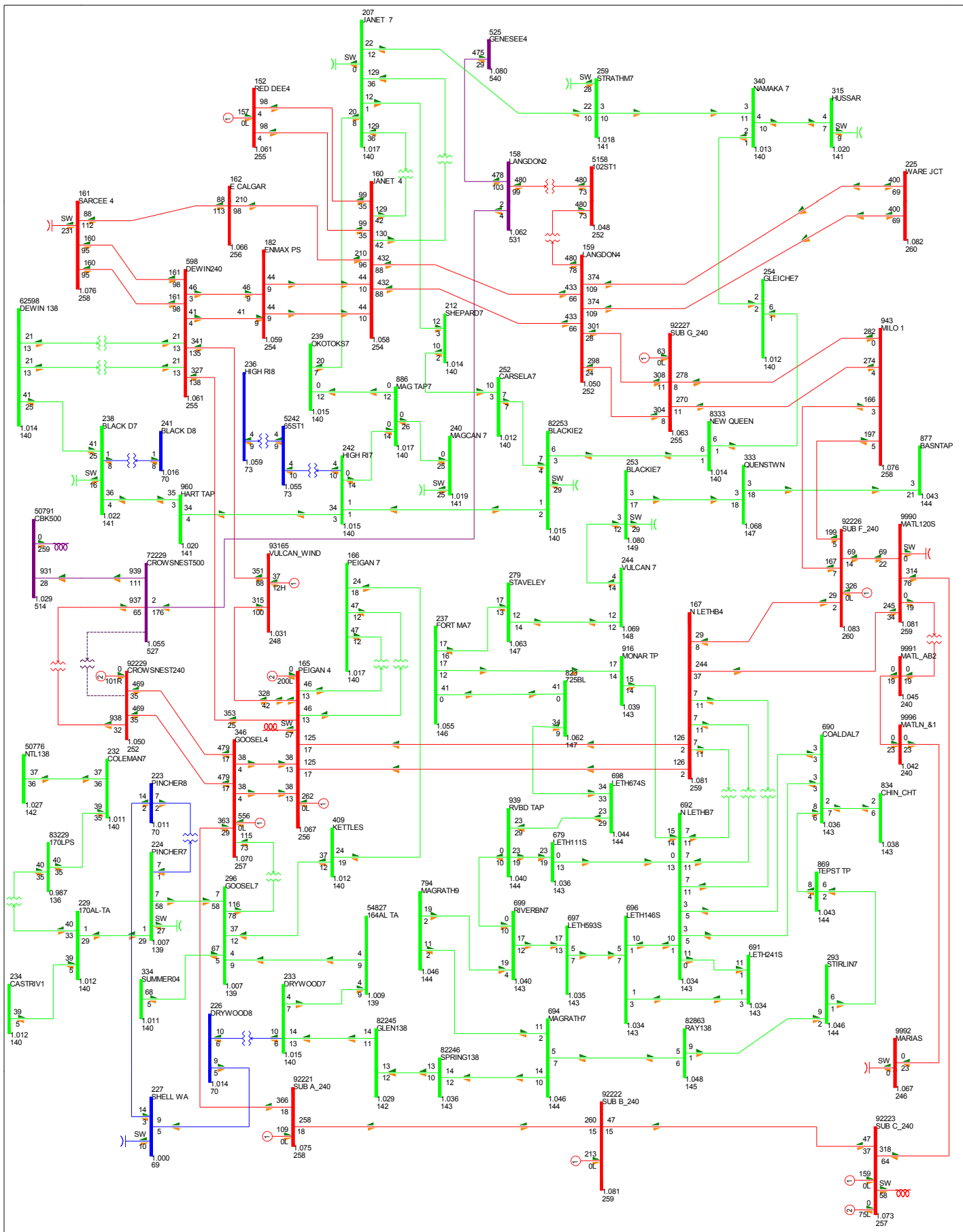


FIG 2017-1A-SL-6: CROWNSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

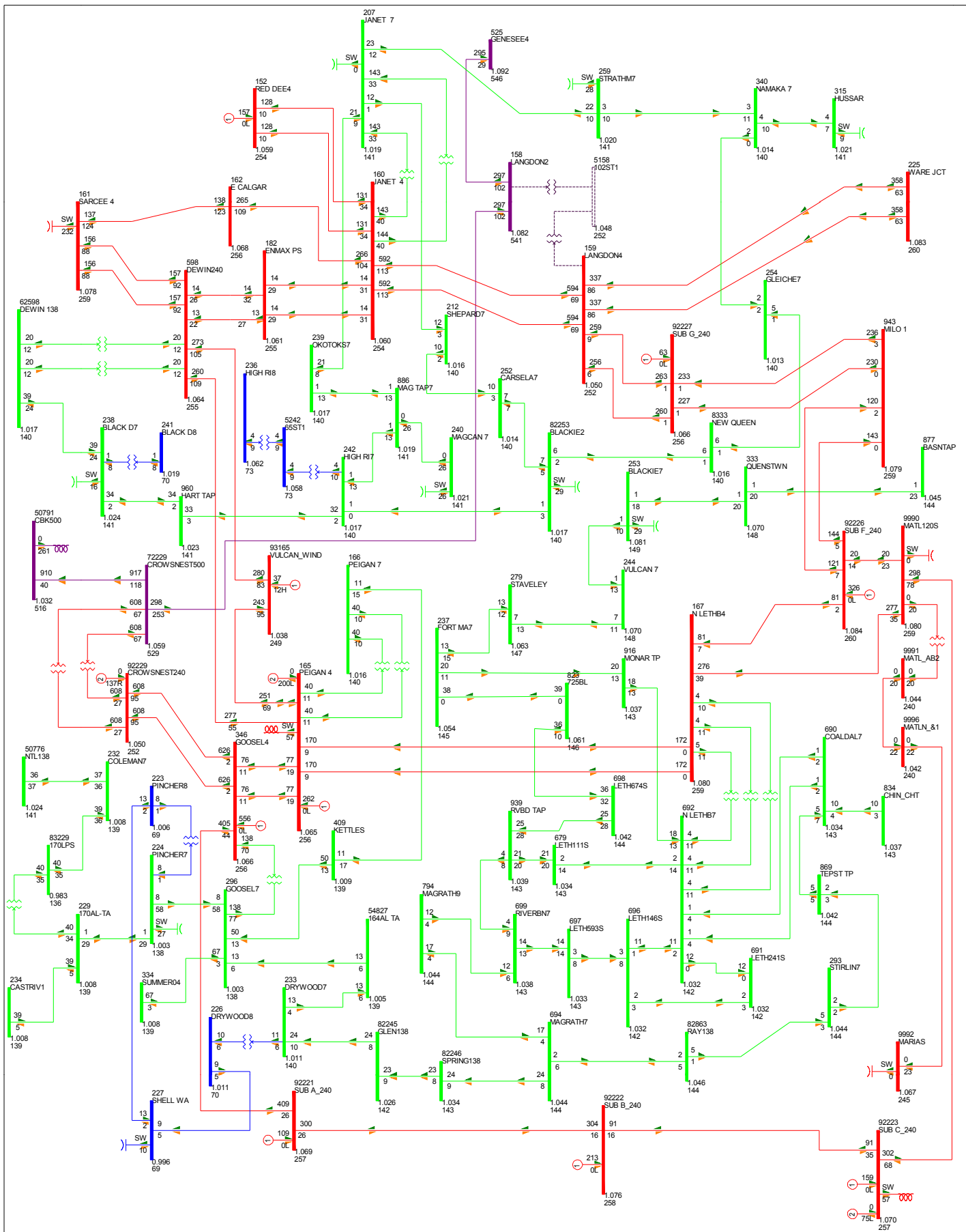


FIG 2017-1A-SL-8: LANGDON 500/240 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 989 MW

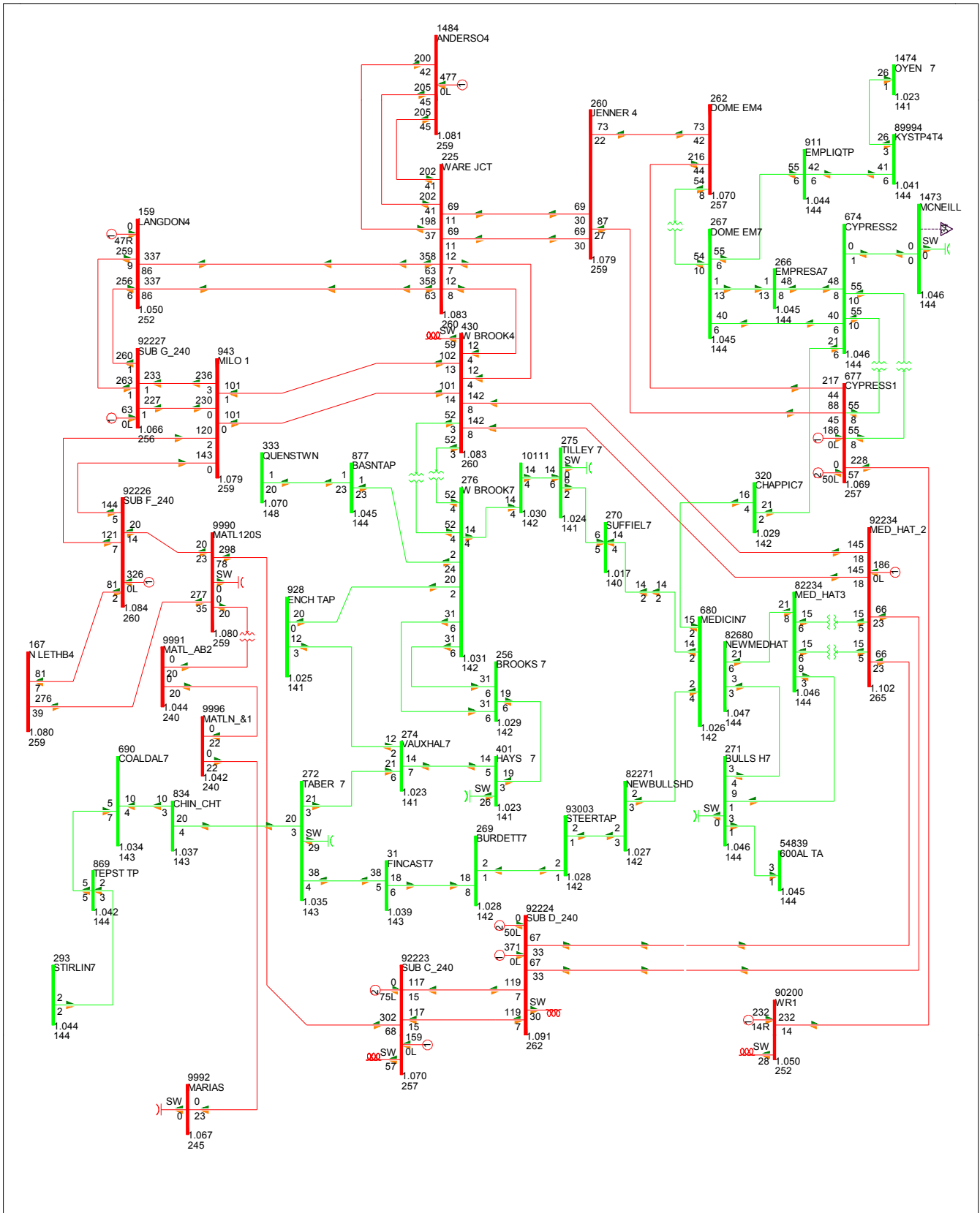


FIG 2017-1A-SL-9: LANGDON 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:39

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 989 MW

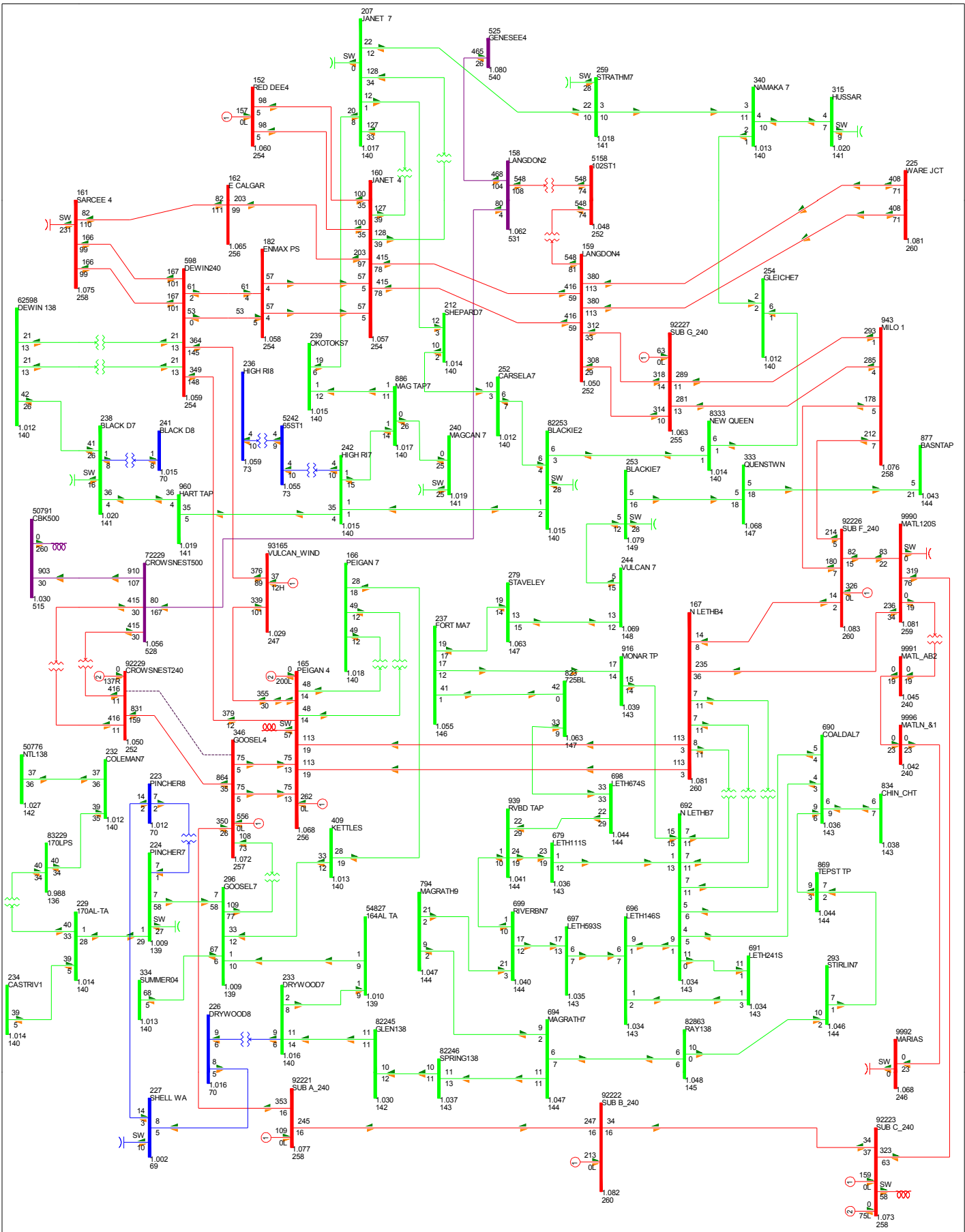


FIG 2017-1A-SL-10: CROWSNEST TO GOOSELAKE 240KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 975 MW

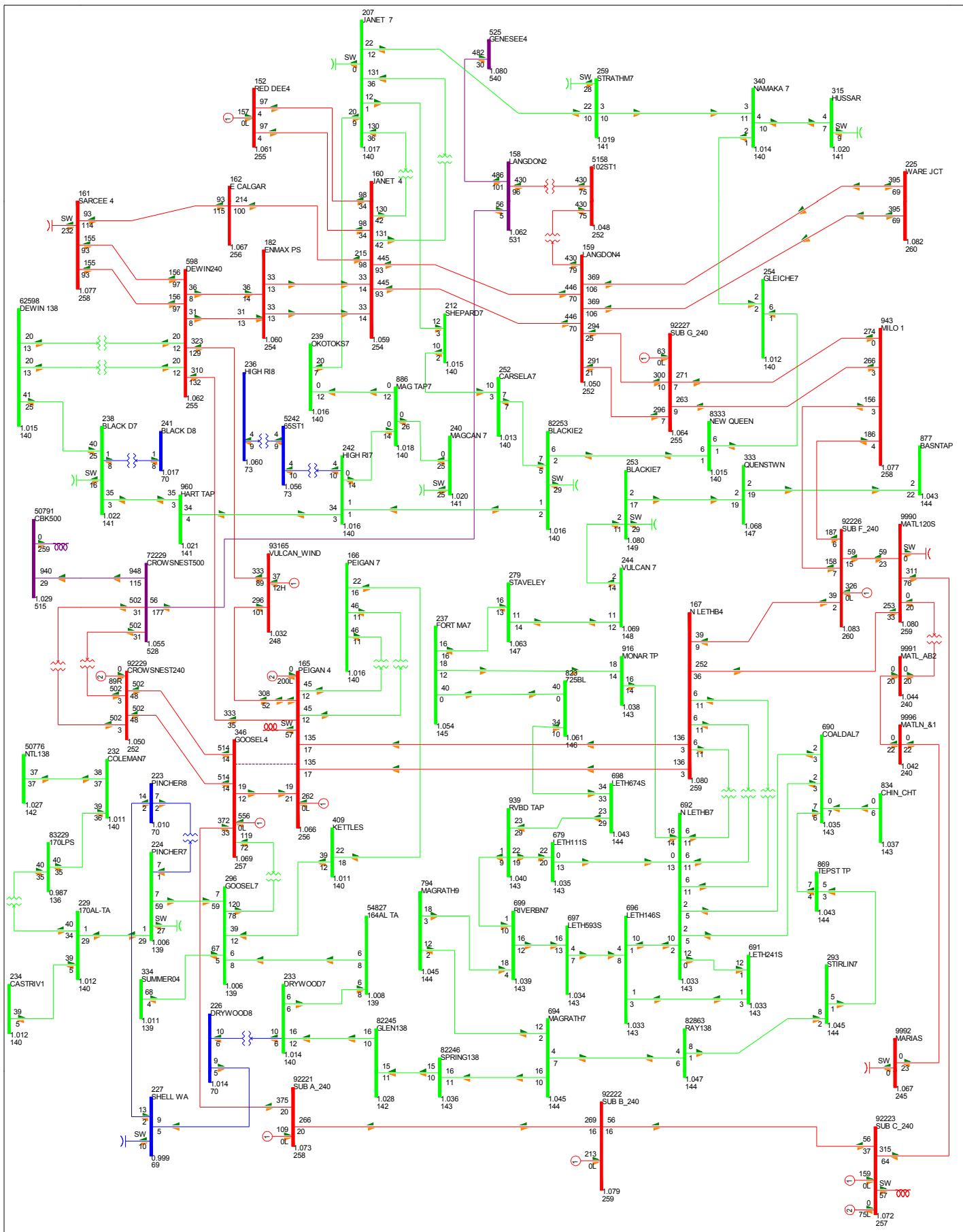


FIG 2017-1A-SL-12: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

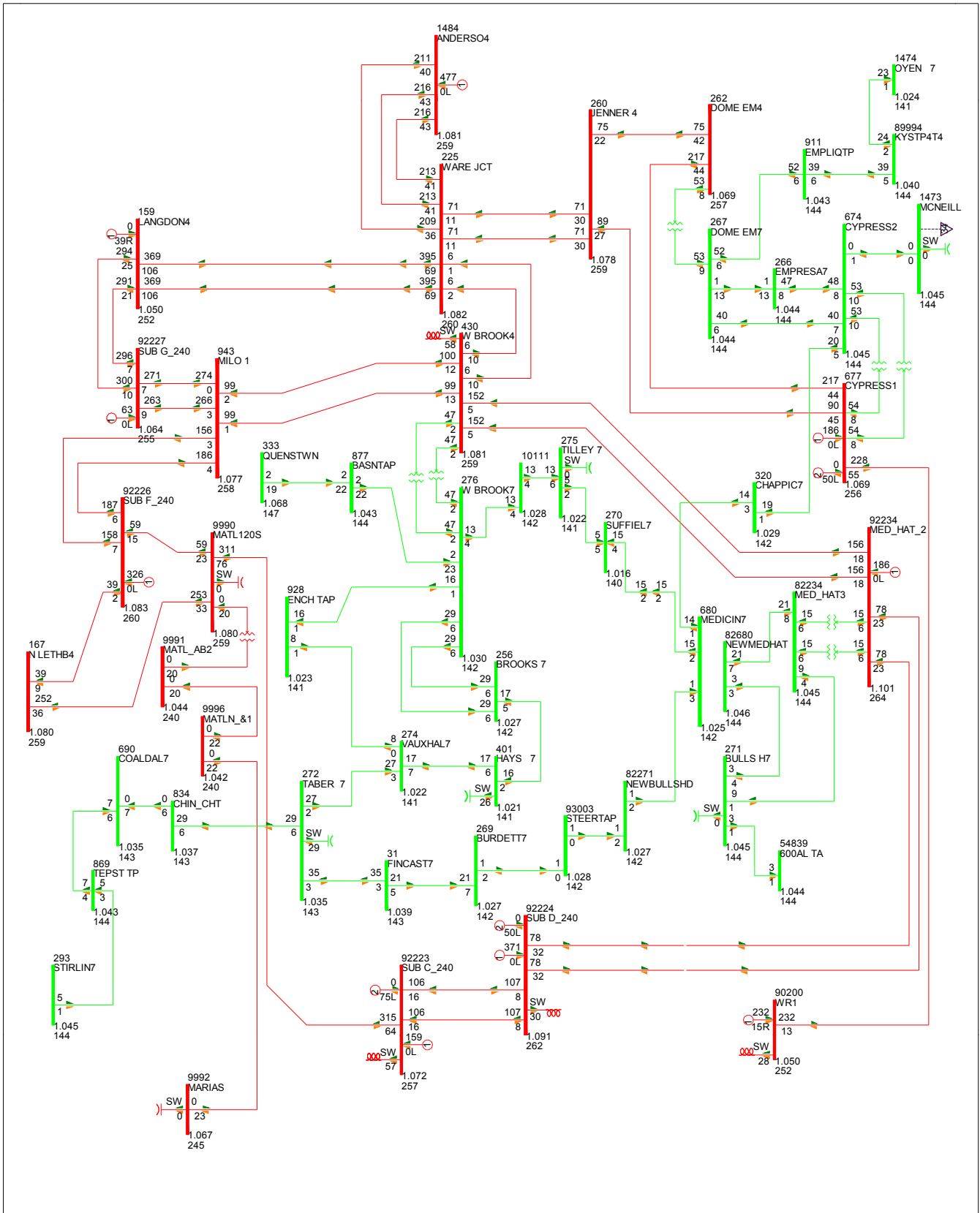


FIG 2017-1A-SL-13: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

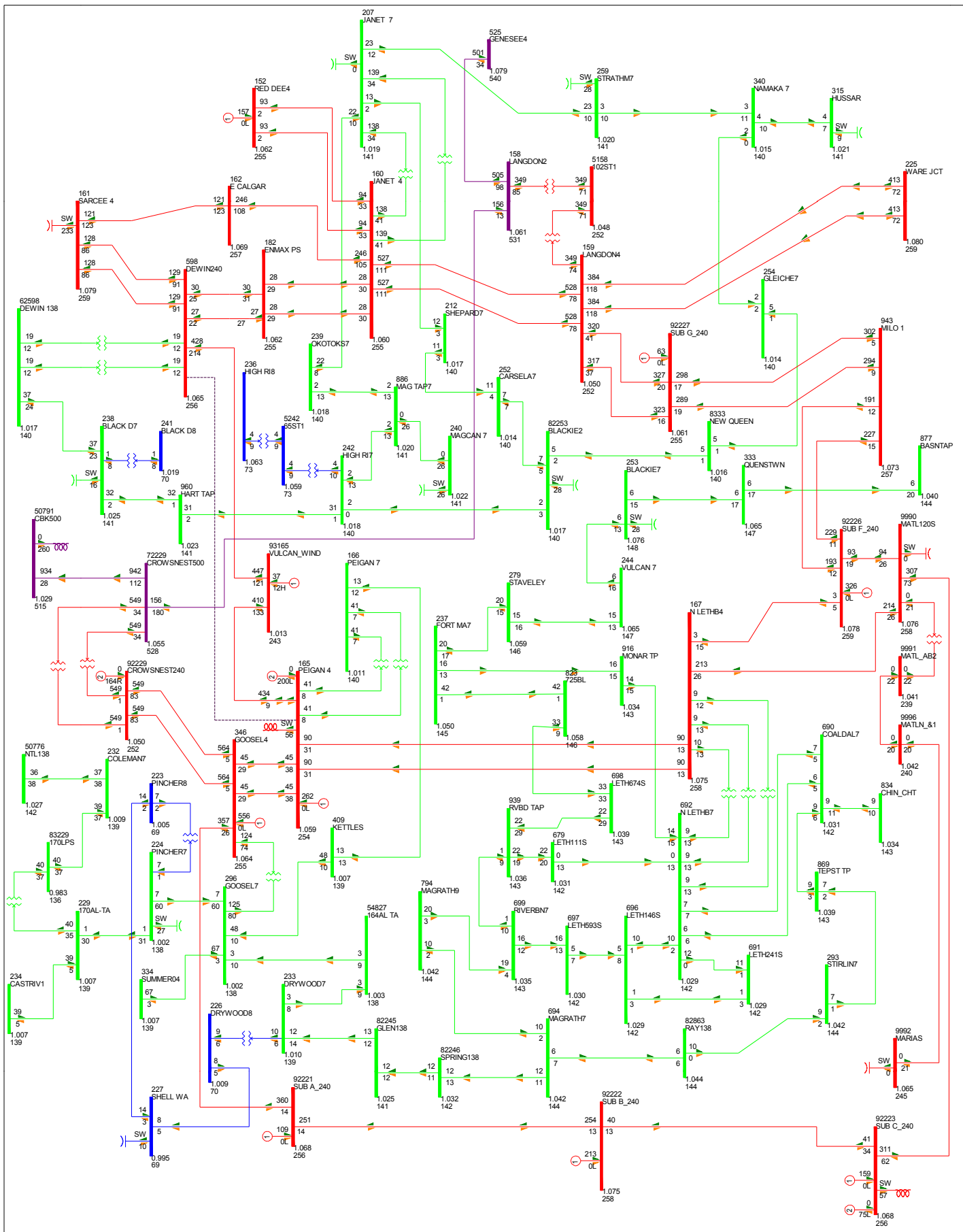


FIG 2017-1A-SL-14: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 994 MW

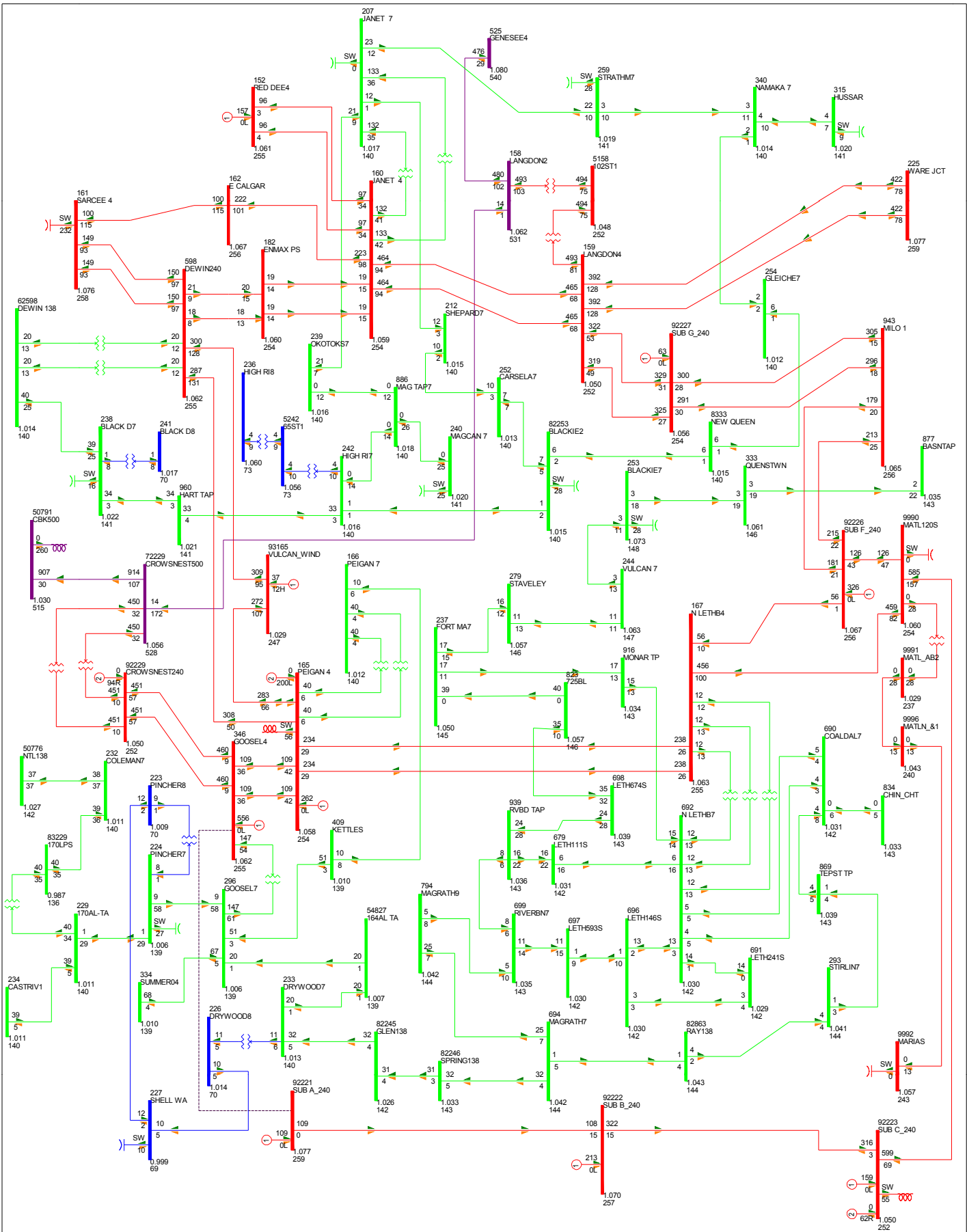


FIG 2017-1A-SL-16: GOOSELAKE TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 975 MW

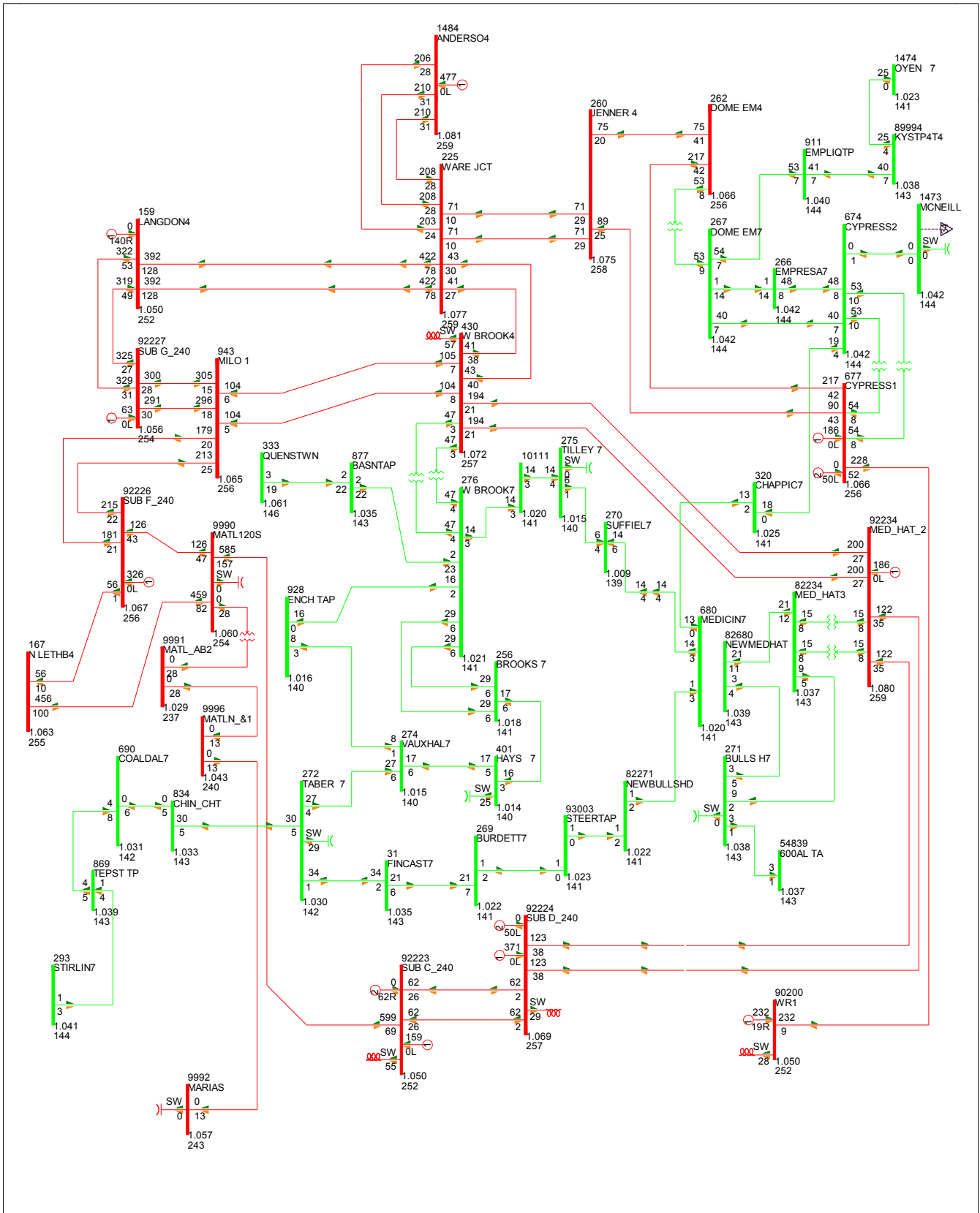


FIG 2017-1A-SL-17: GOOSELAKE TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 975 MW

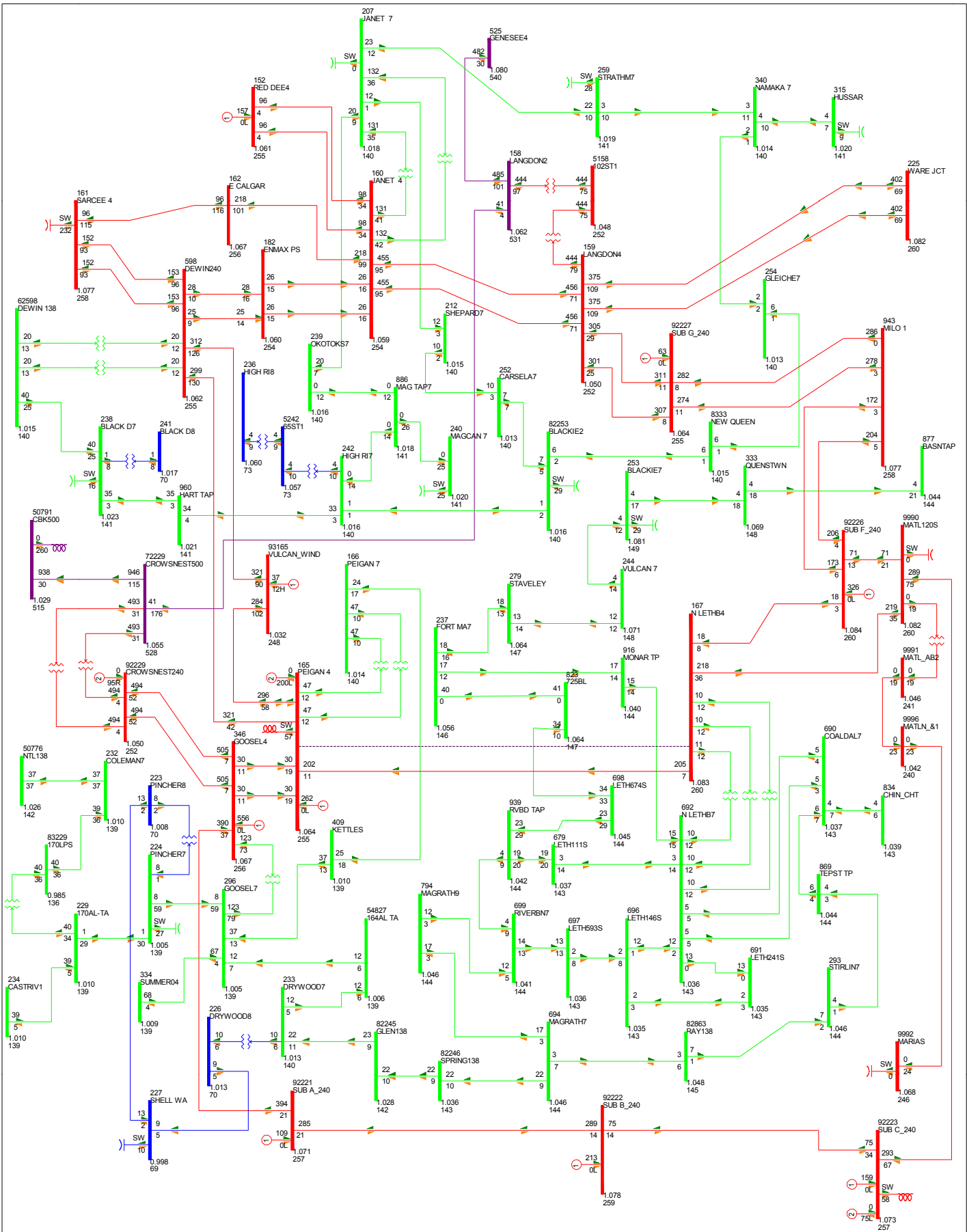


FIG 2017-1A-SL-18: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1005 MW

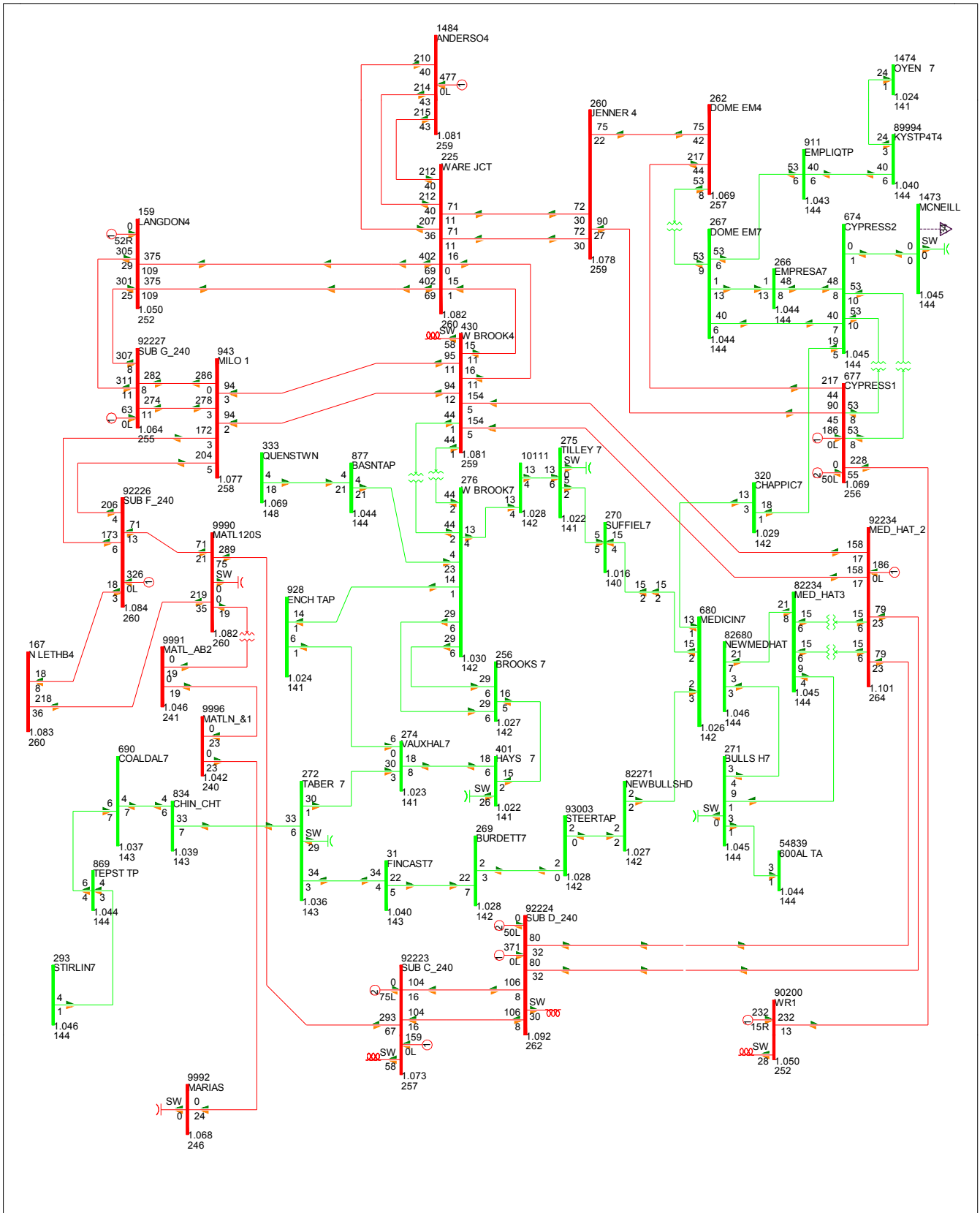


FIG 2017-1A-SL-19: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1005 MW

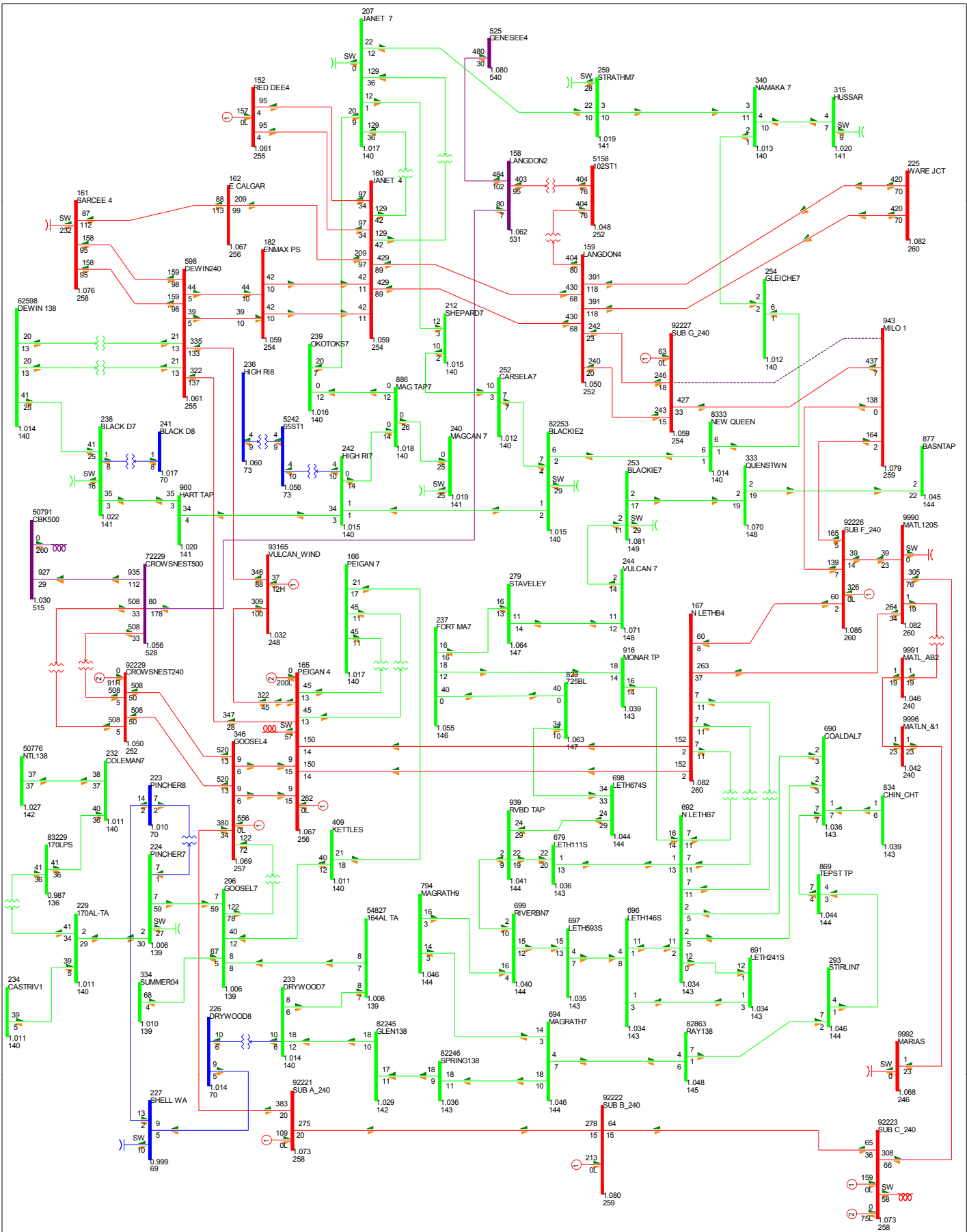


FIG 2017-1A-SL-20: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 994 MW

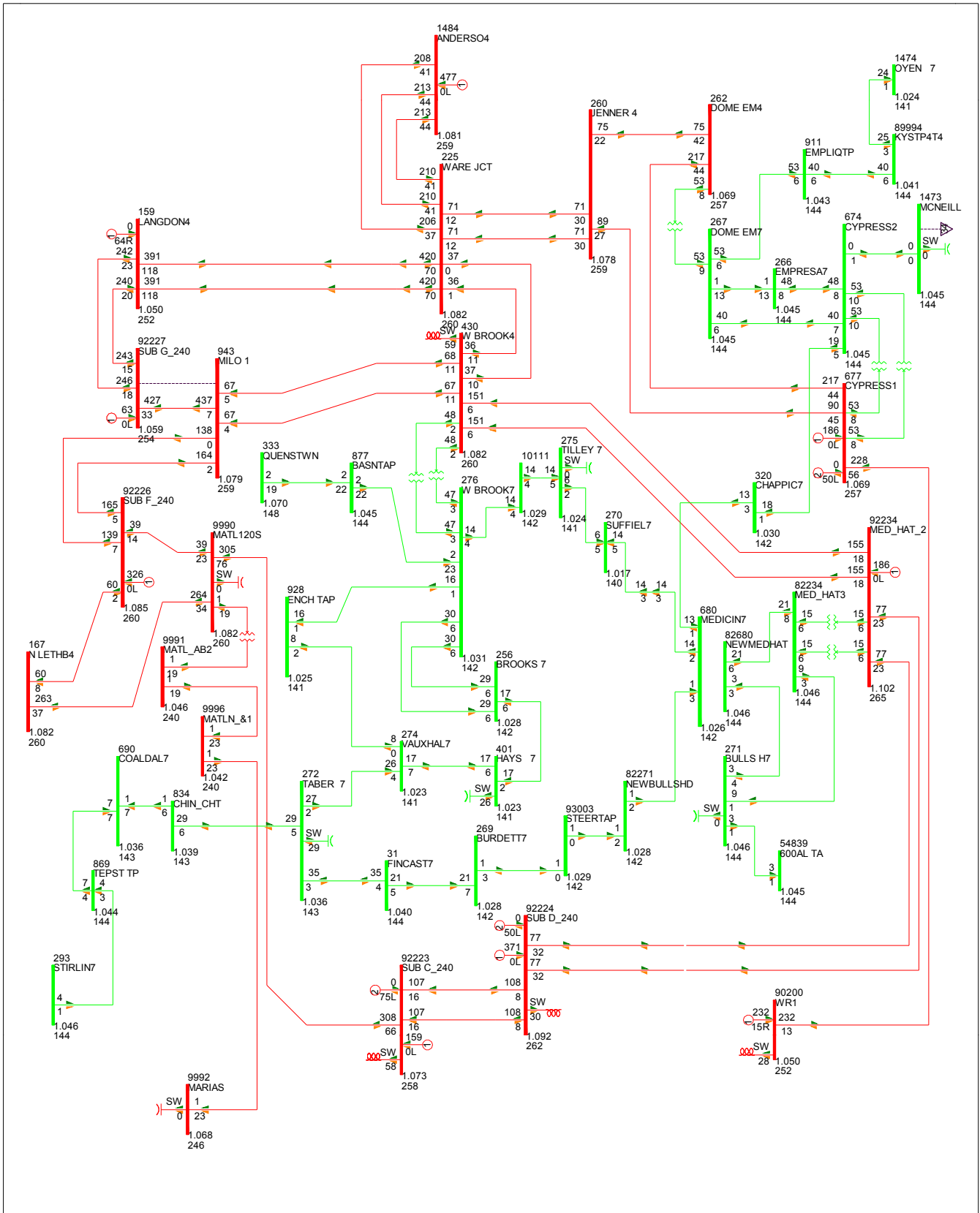


FIG 2017-1A-SL-21: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 994 MW

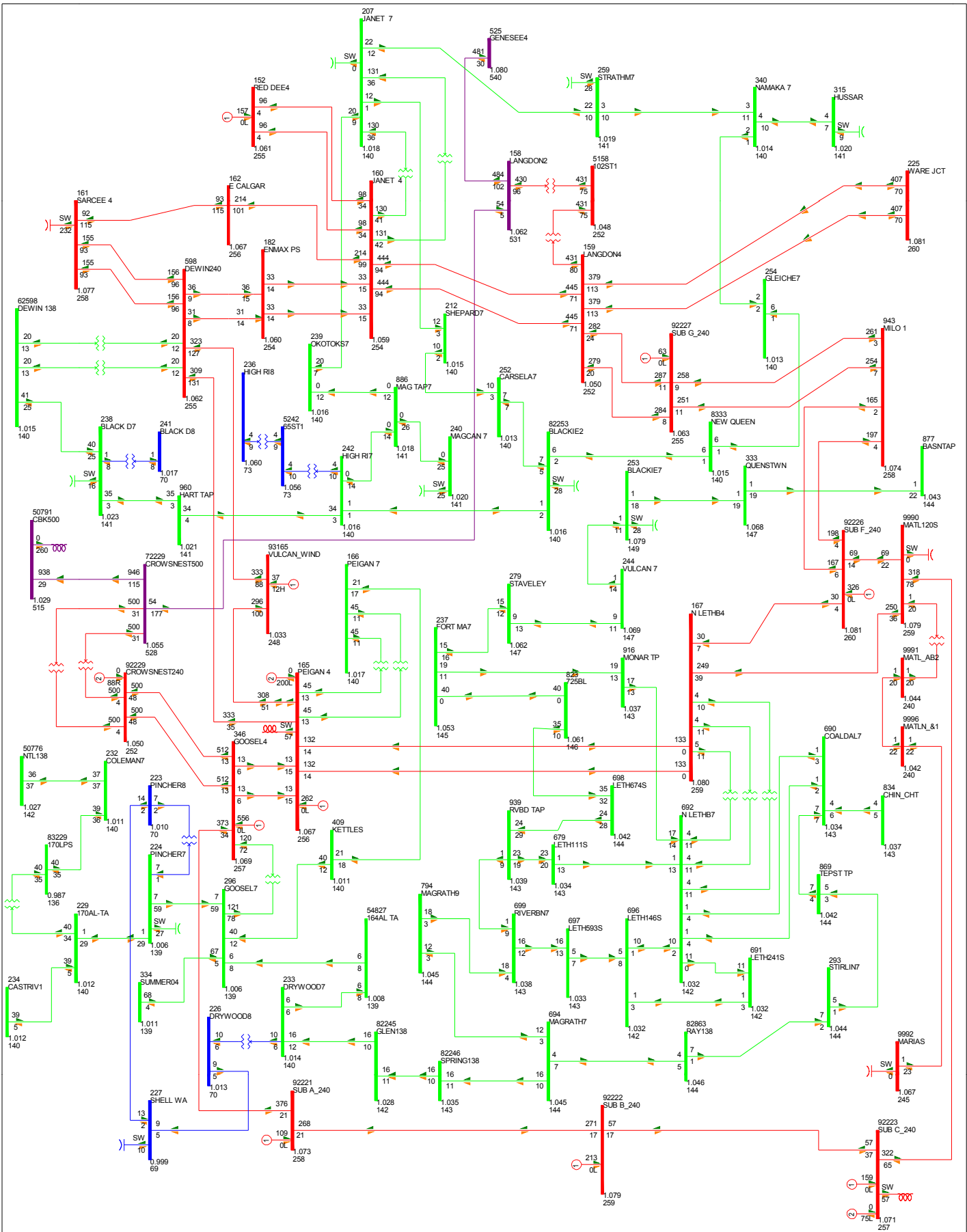


FIG 2017-1A-SL-22: MILO TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 1005 MW

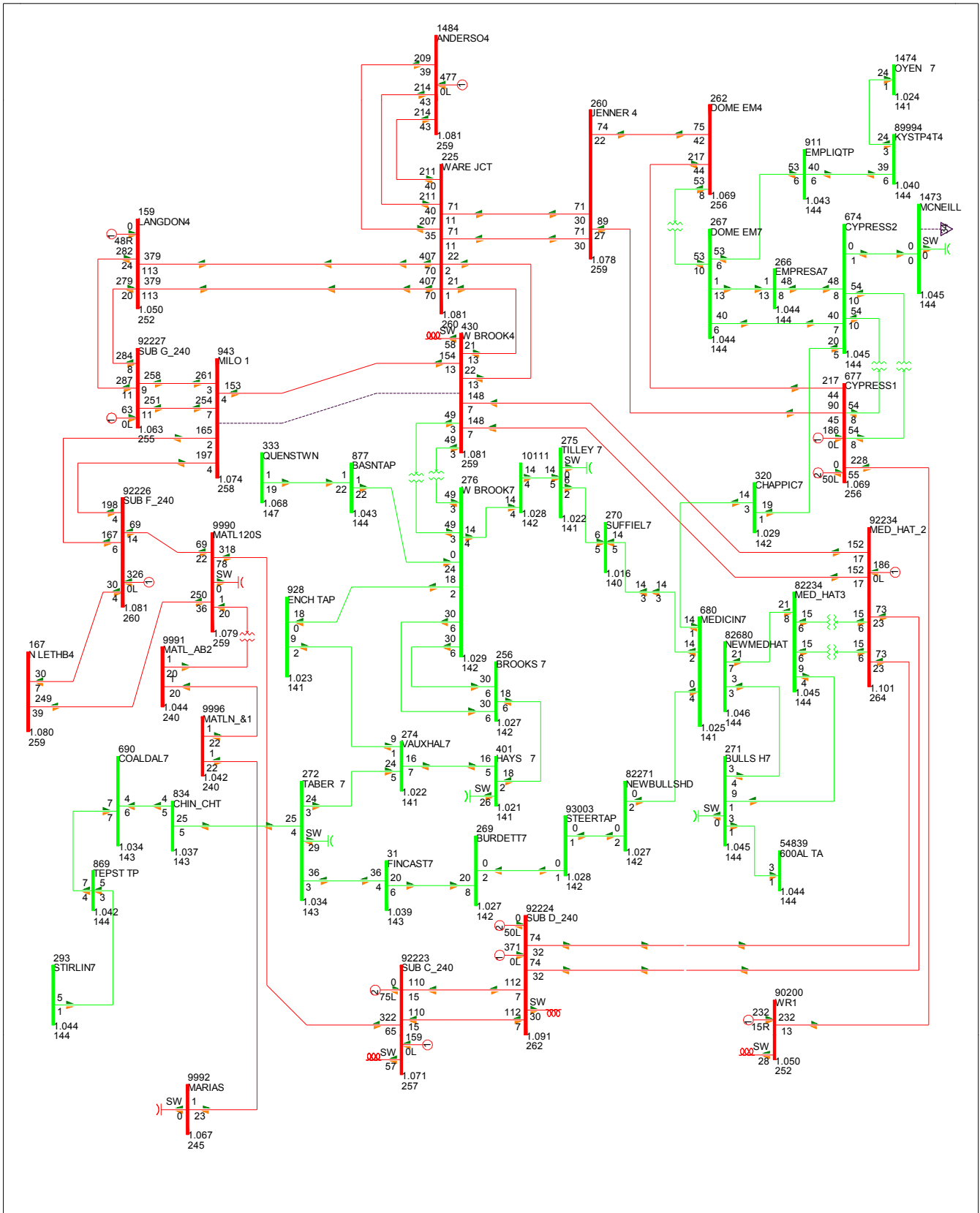


FIG 2017-1A-SL-23: MLO TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1005 MW

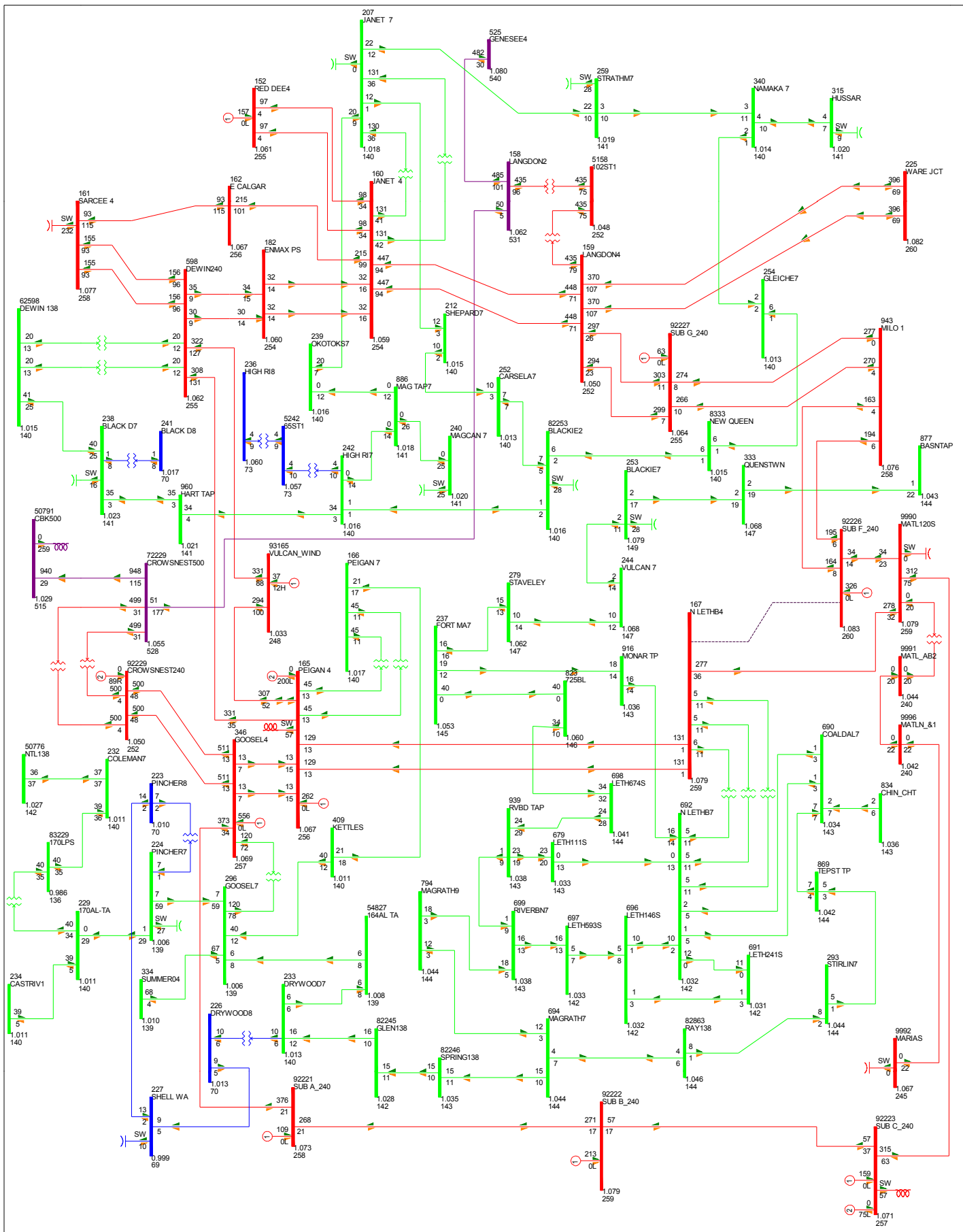


FIG 2017-1A-SL-24: N. LETHBRIDGE TO SUB F 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

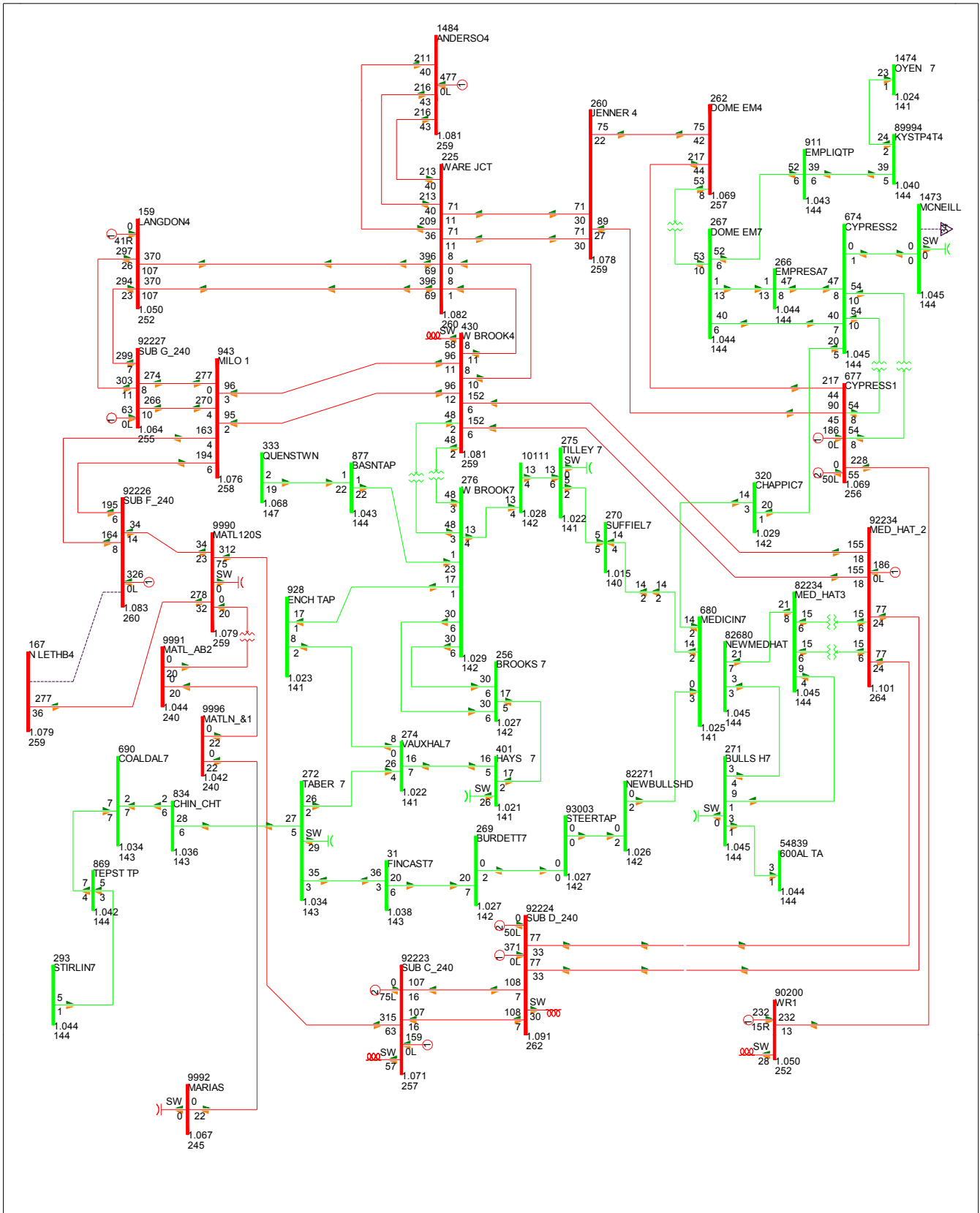


FIG 2017-1A-SL-25: N. LETHBRIDGE TO SUB F 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

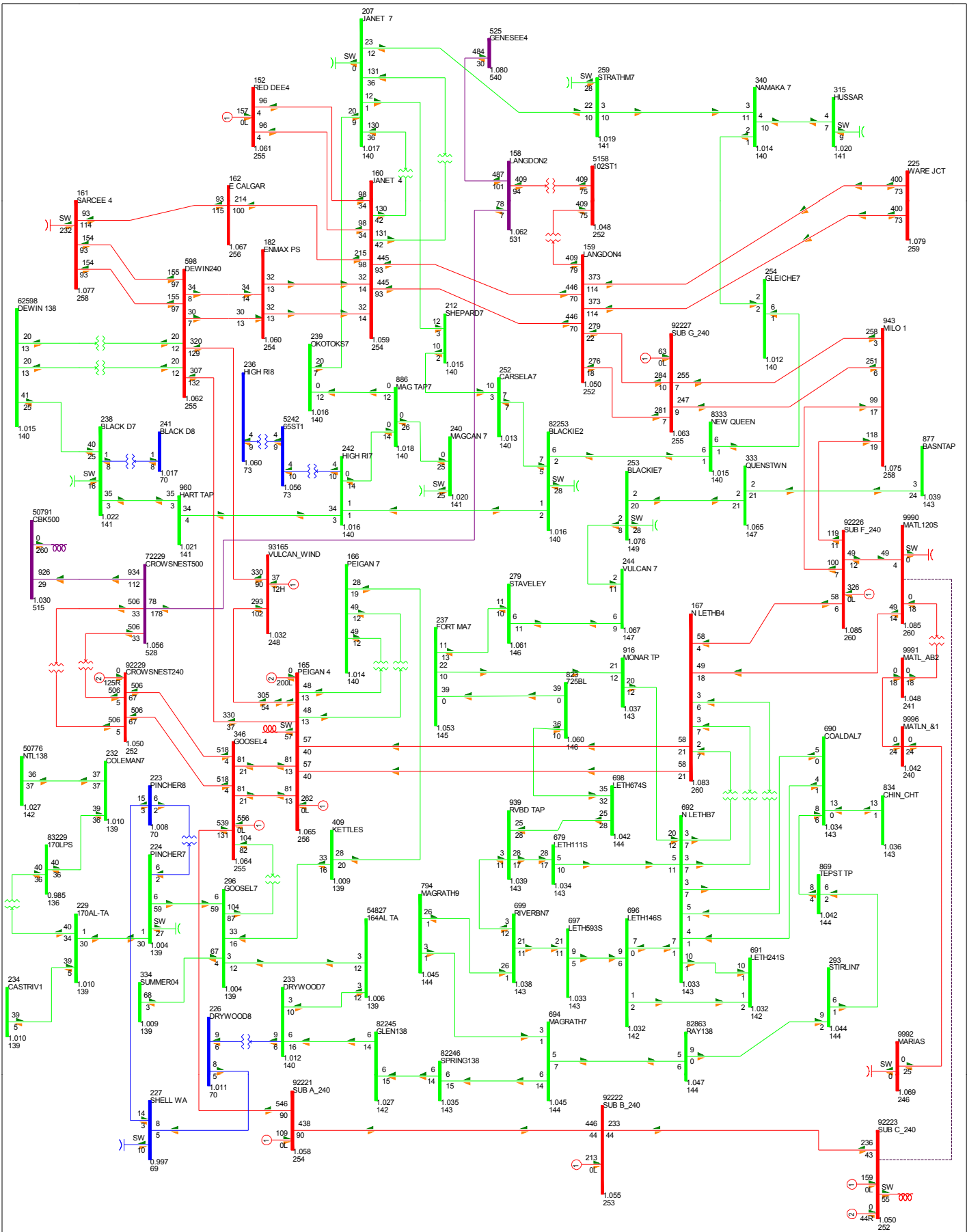


FIG 2017-1A-SL-26: MATL TO SUB C 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 991 MW

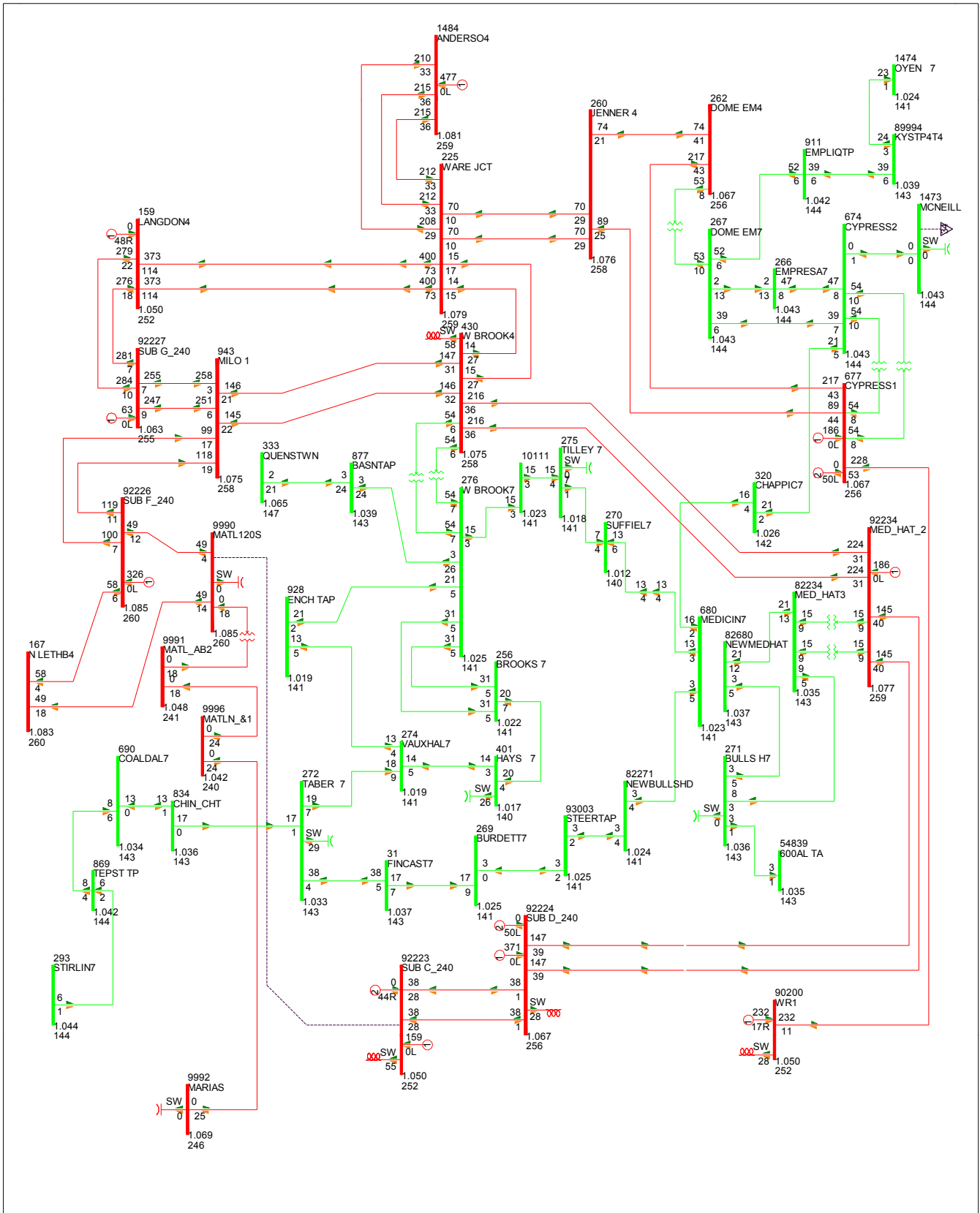


FIG 2017-1A-SL-27: MATL TO SUB C 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 991 MW

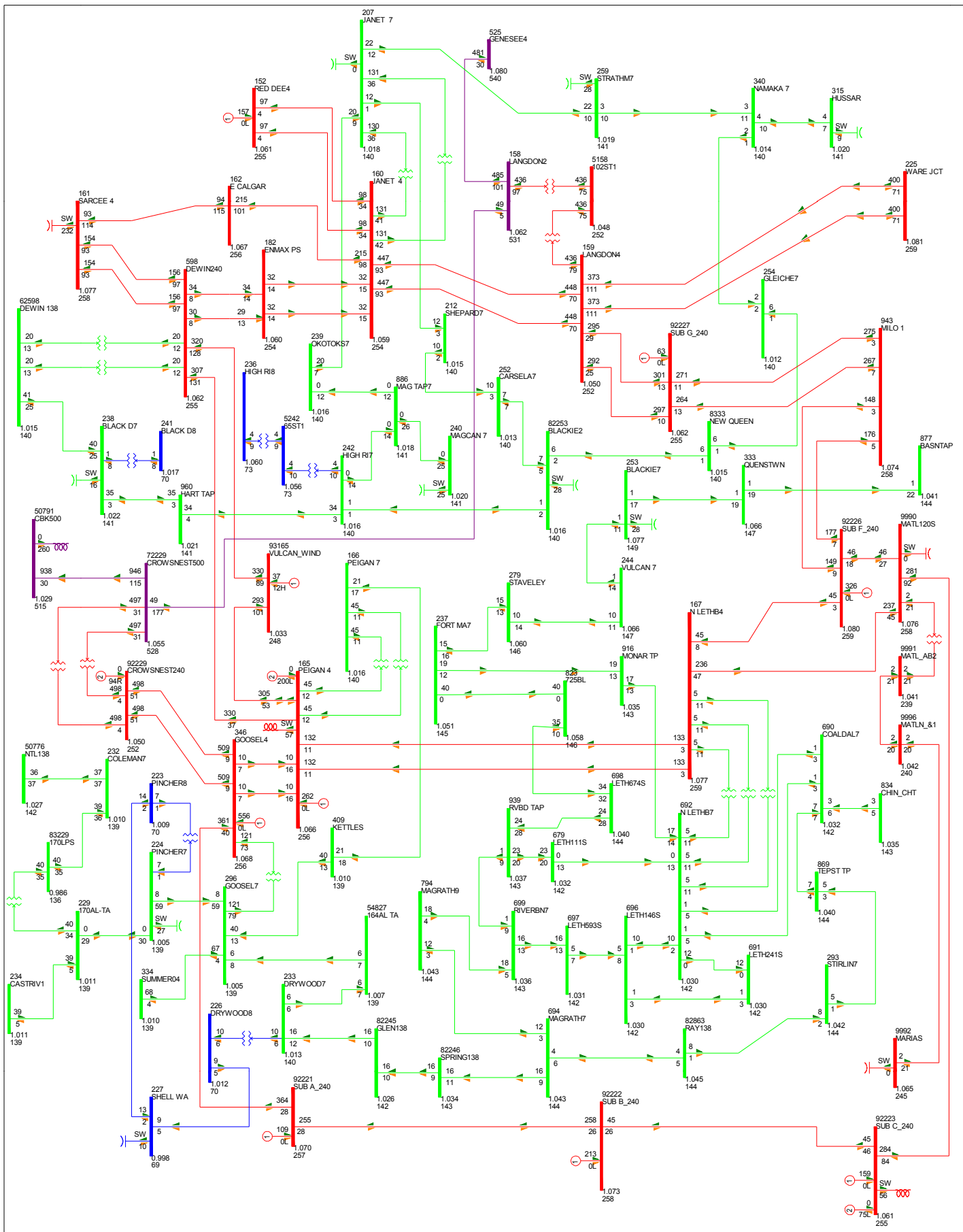


FIG 2017-1A-SL-28: SUB C TO SUB D 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1004 MW

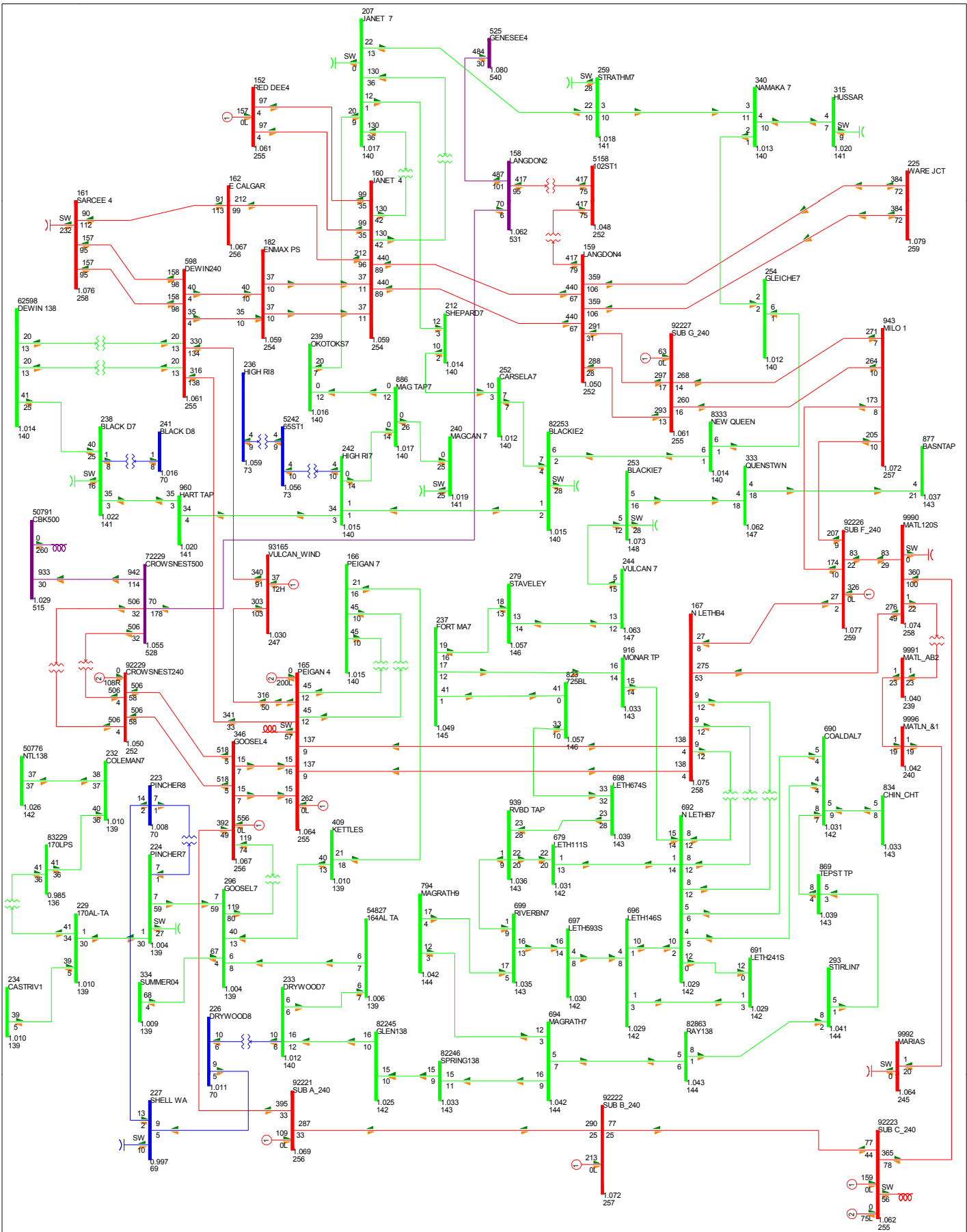


FIG 2017-1A-SL-30: WESTBROOKS TO MEDHAT2 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

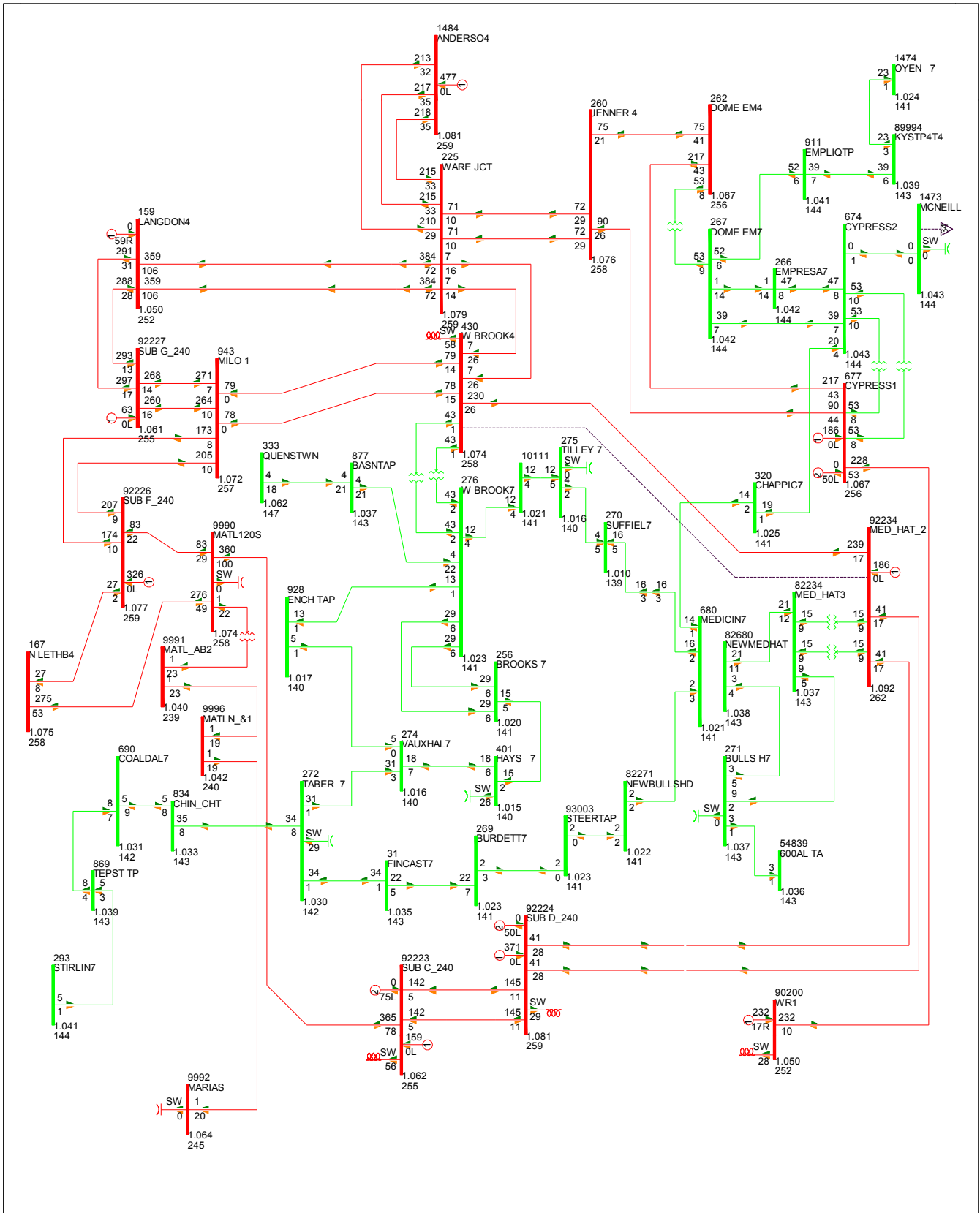


FIG 2017-1A-SL-31: WESTBROOKS TO MEDHAT2 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

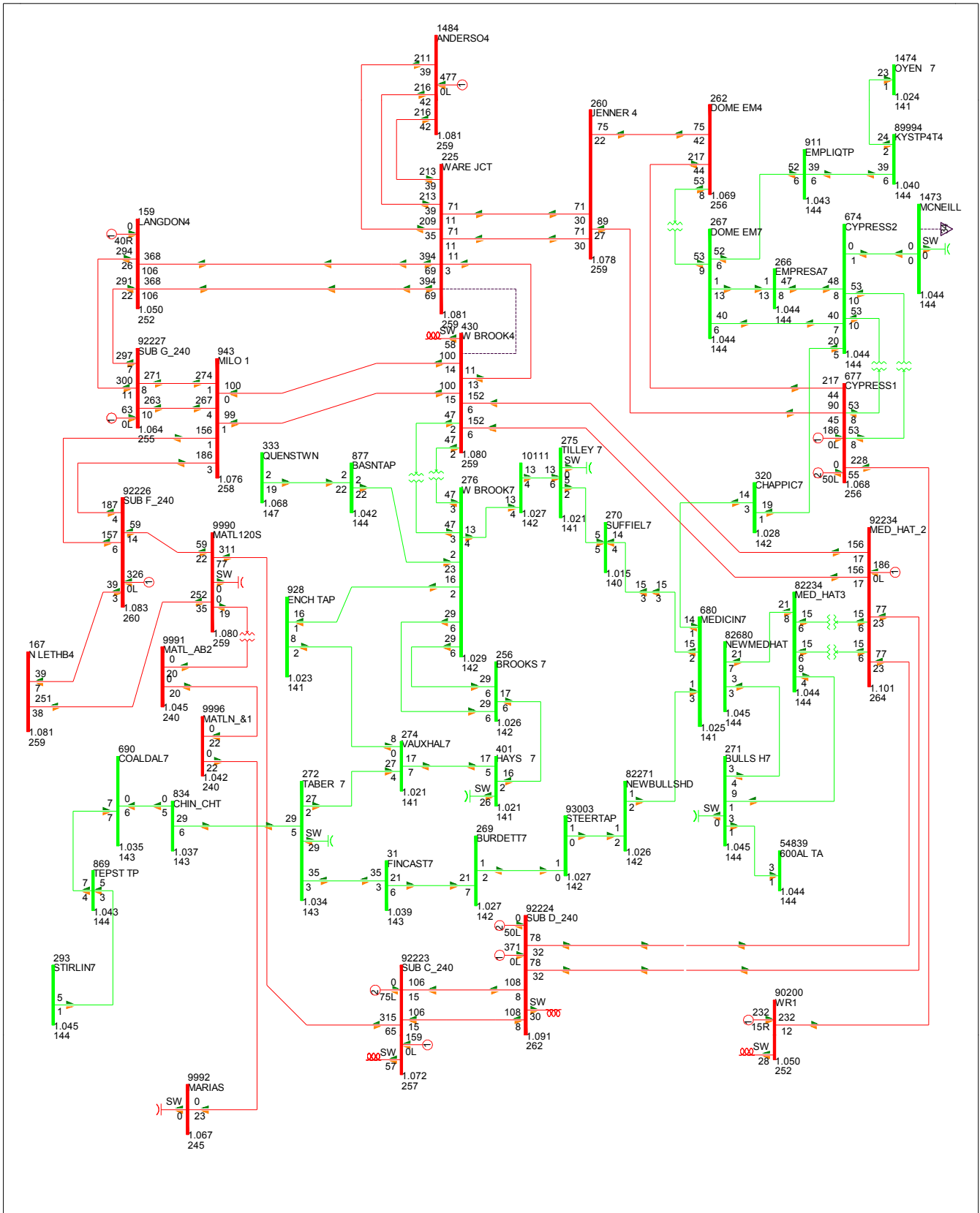


FIG 2017-1A-SL-33: WAREJUNC TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

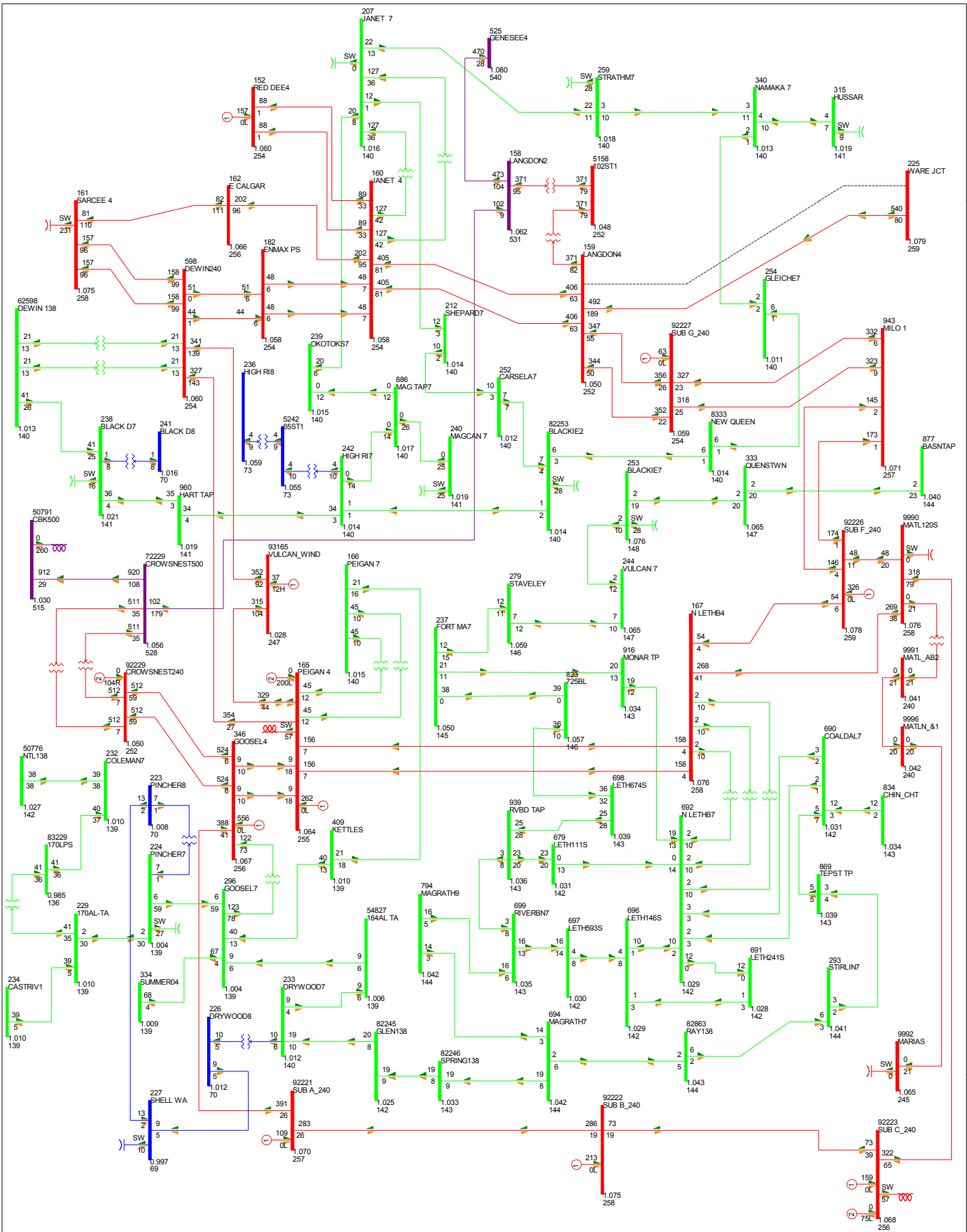


FIG 2017-1A-SL-34: WAREJUNC TO LANGDON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 978 MW

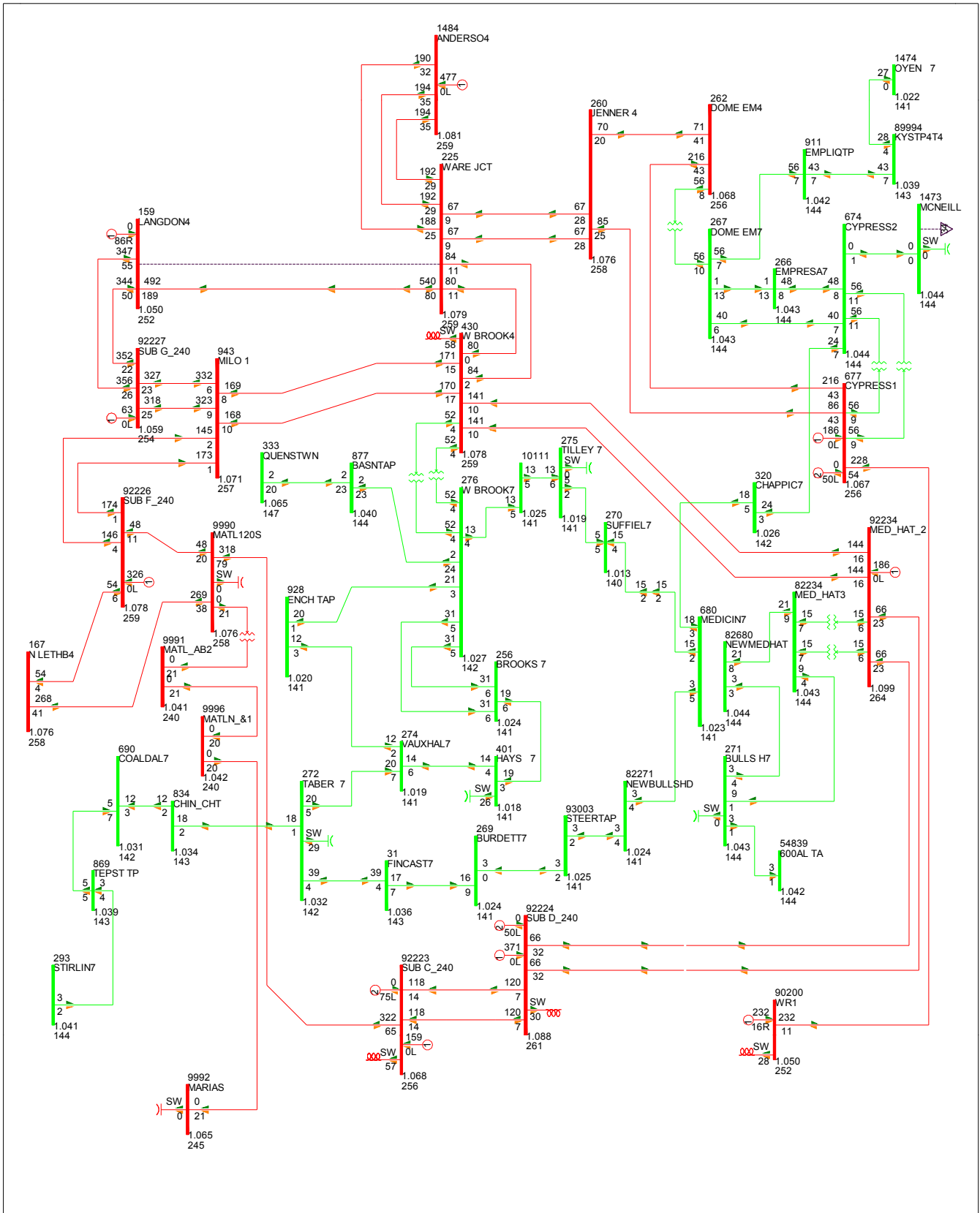


FIG 2017-1A-SL-35: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 978 MW

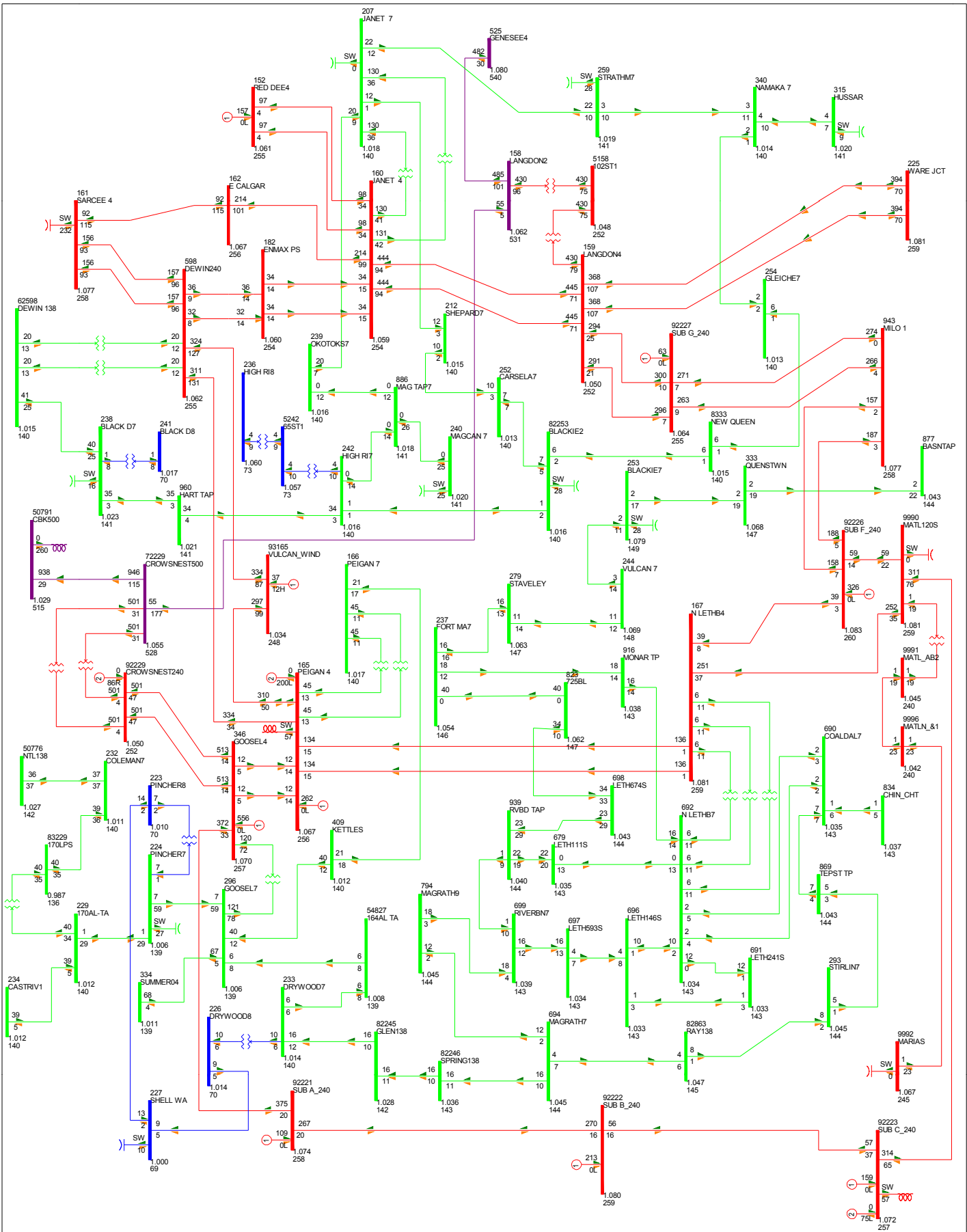


FIG 2017-1A-SL-36: DOME EMPRESS TO CYPRESS 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1005 MW

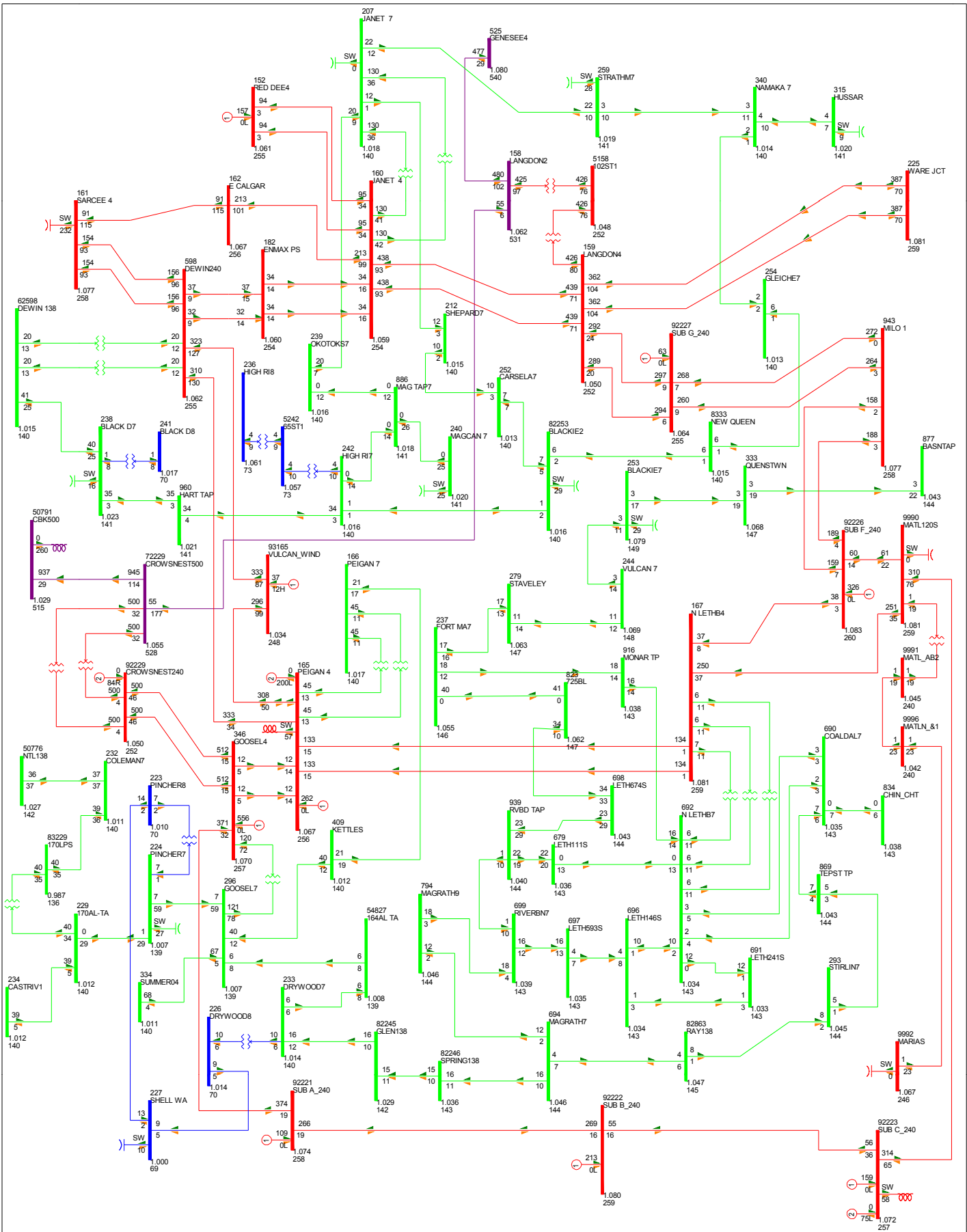


FIG 2017-1A-SL-38: WAREJUNC TO ANDERSON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1003 MW

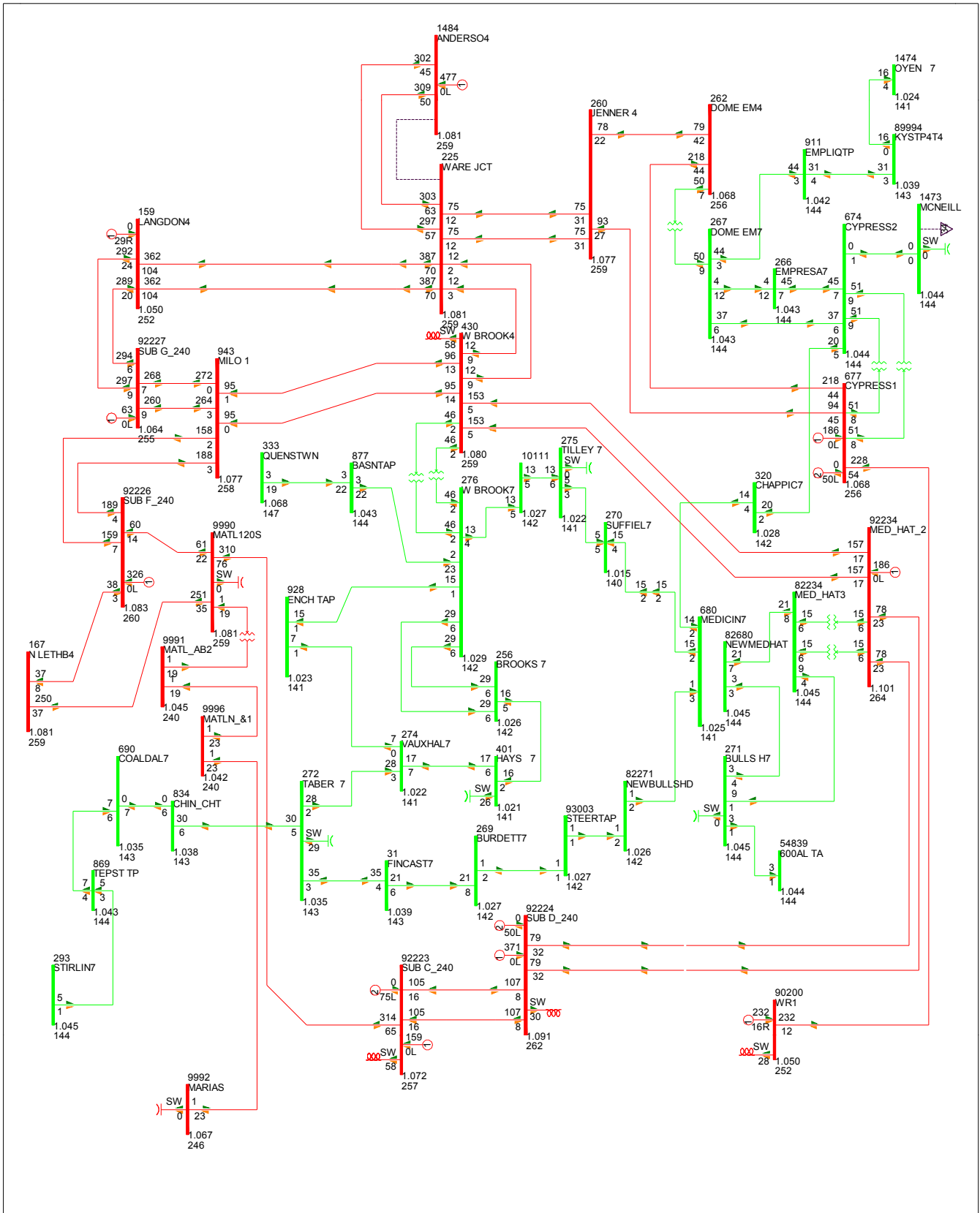


FIG 2017-1A-SL-39: WAREJUNC TO ANDERSON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1003 MW

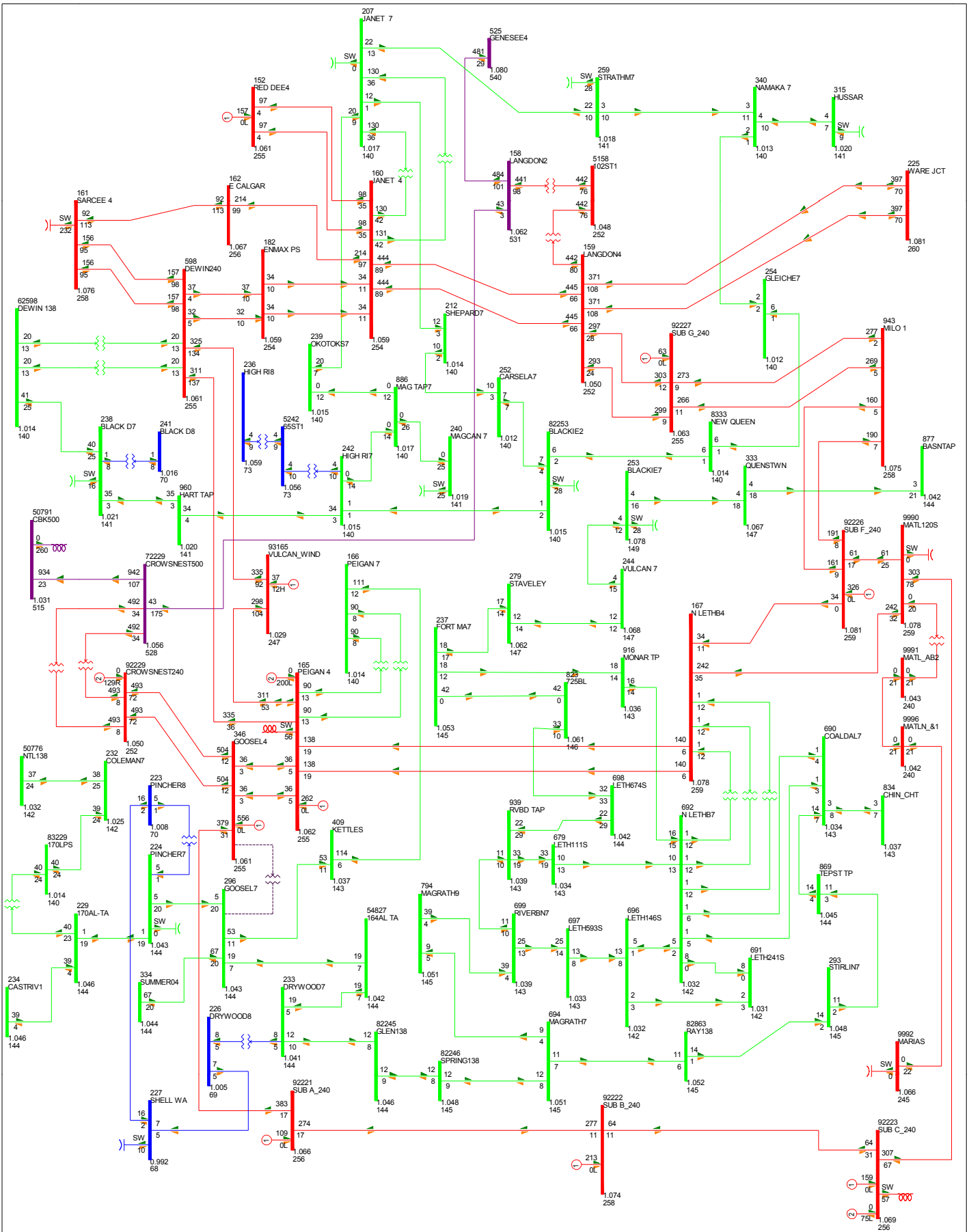


FIG 2017-1A-SL-40: GOOSE LAKE 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1001 MW

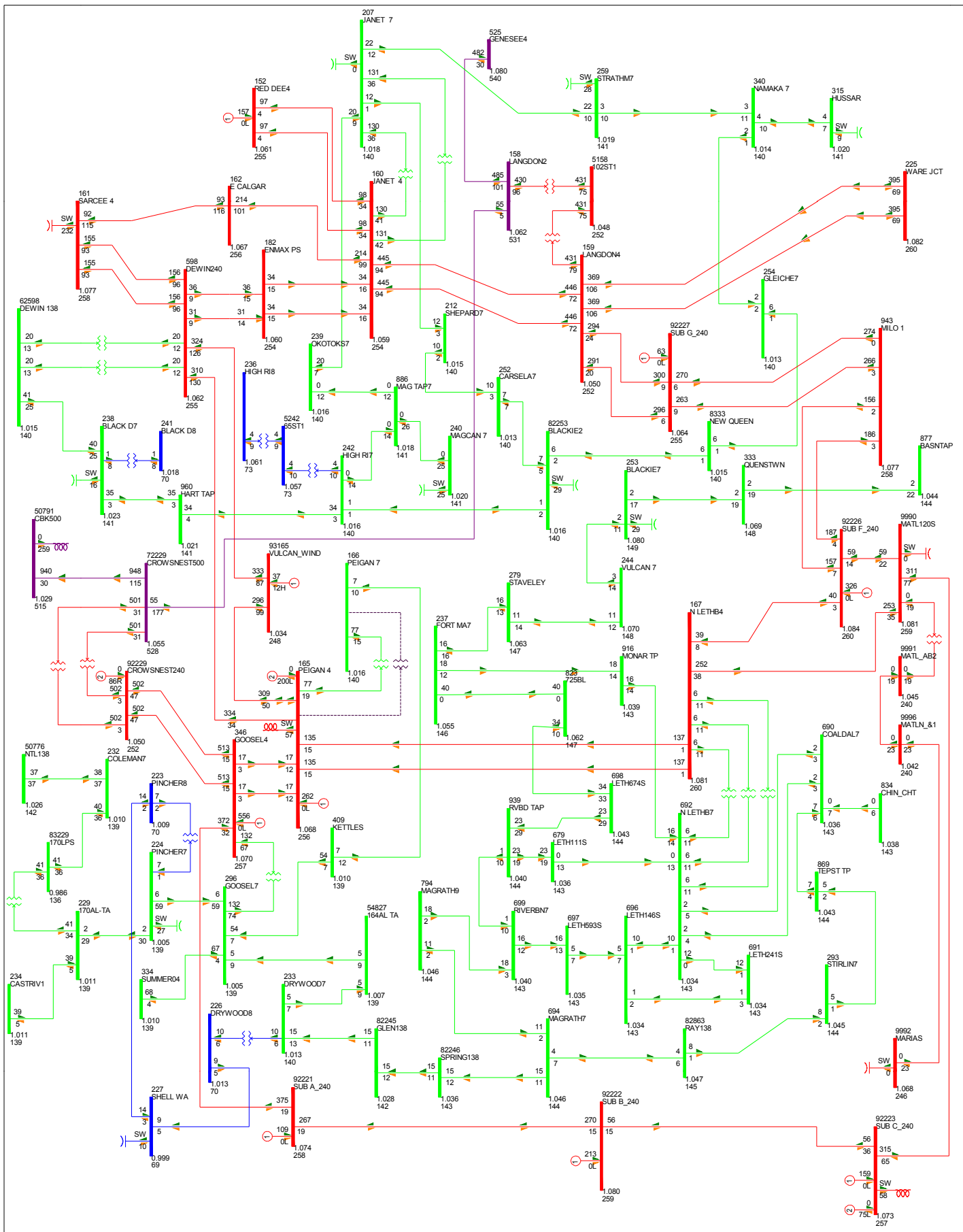


FIG 2017-1A-SL-42: PEIGAN 240/138 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1007 MW

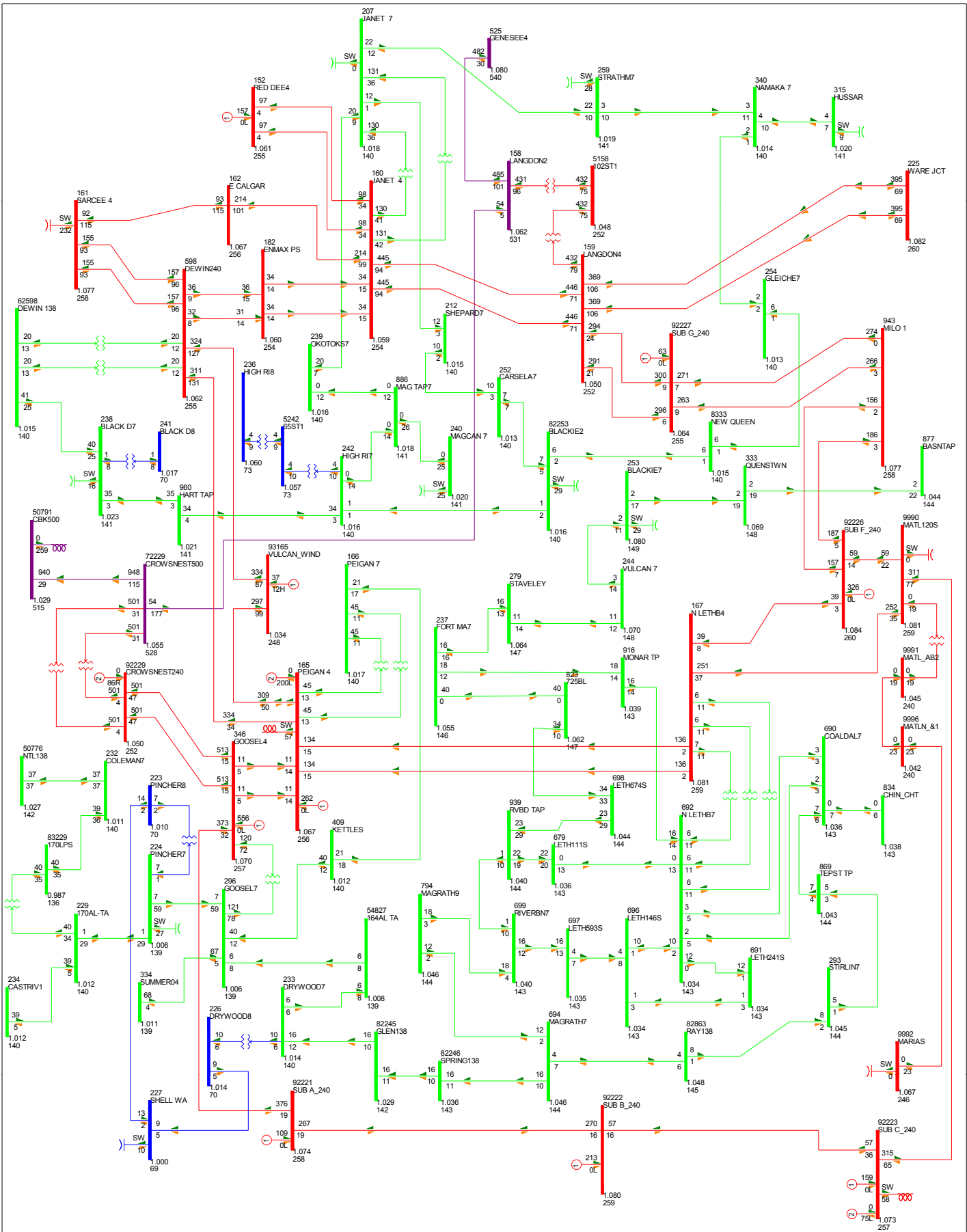


FIG 2017-1A-SL-44: DOME EMPRESS 240/138 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1007 MW

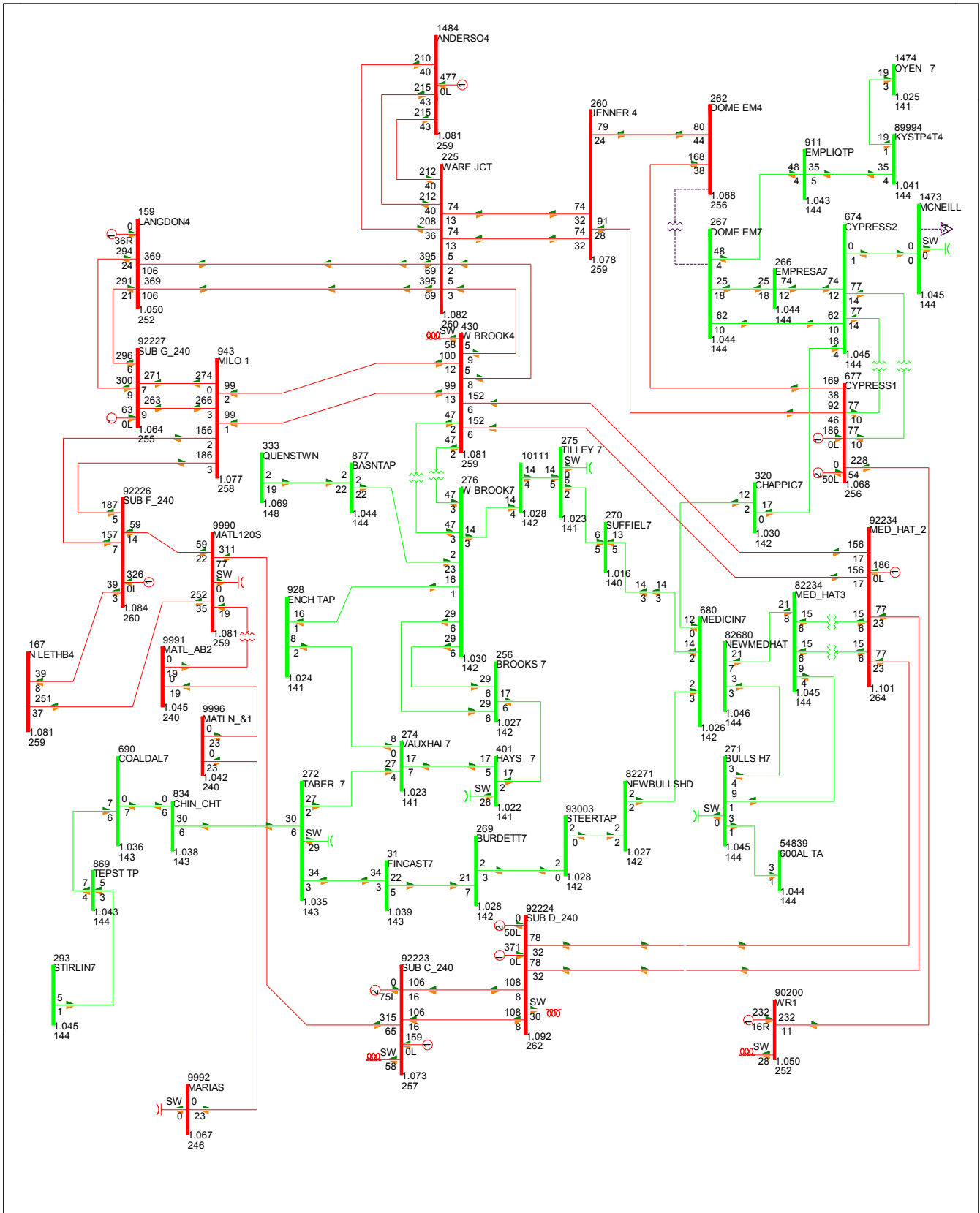


FIG 2017-1A-SL-45: DOME EMPRESS 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

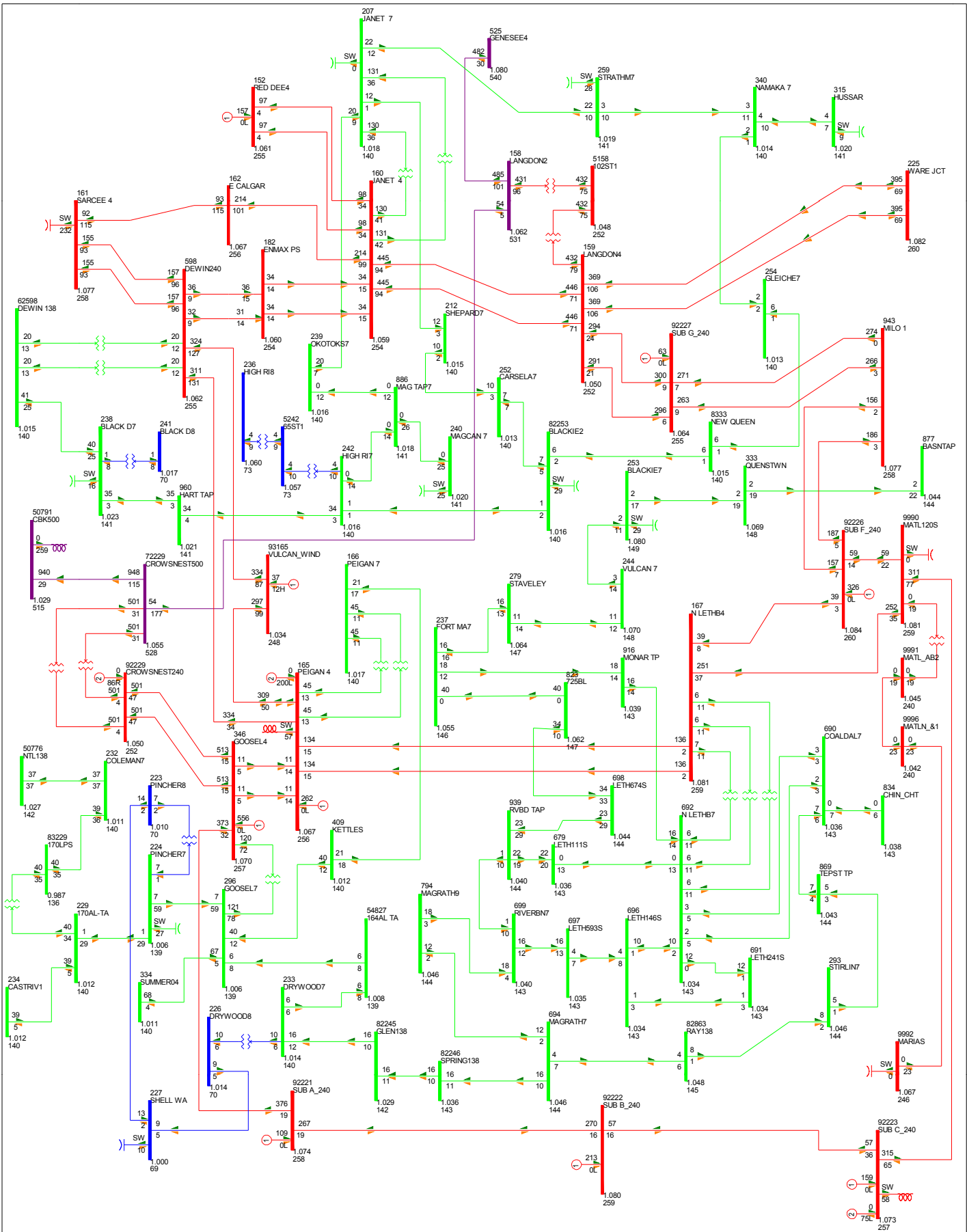


FIG 2017-1A-SL-46: CYPRESS 240/138 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1007 MW

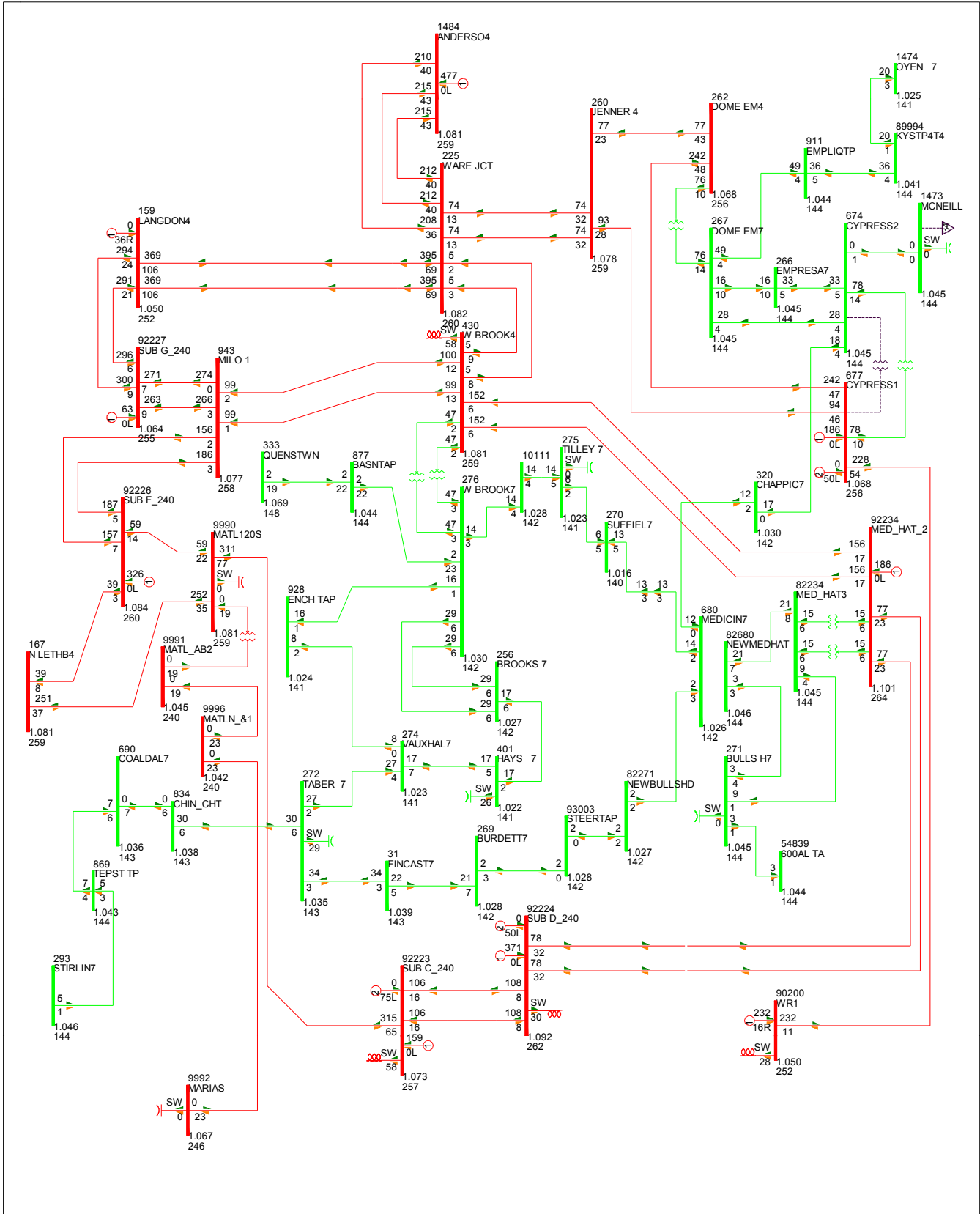


FIG 2017-1A-SL-47: CYPRESS 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

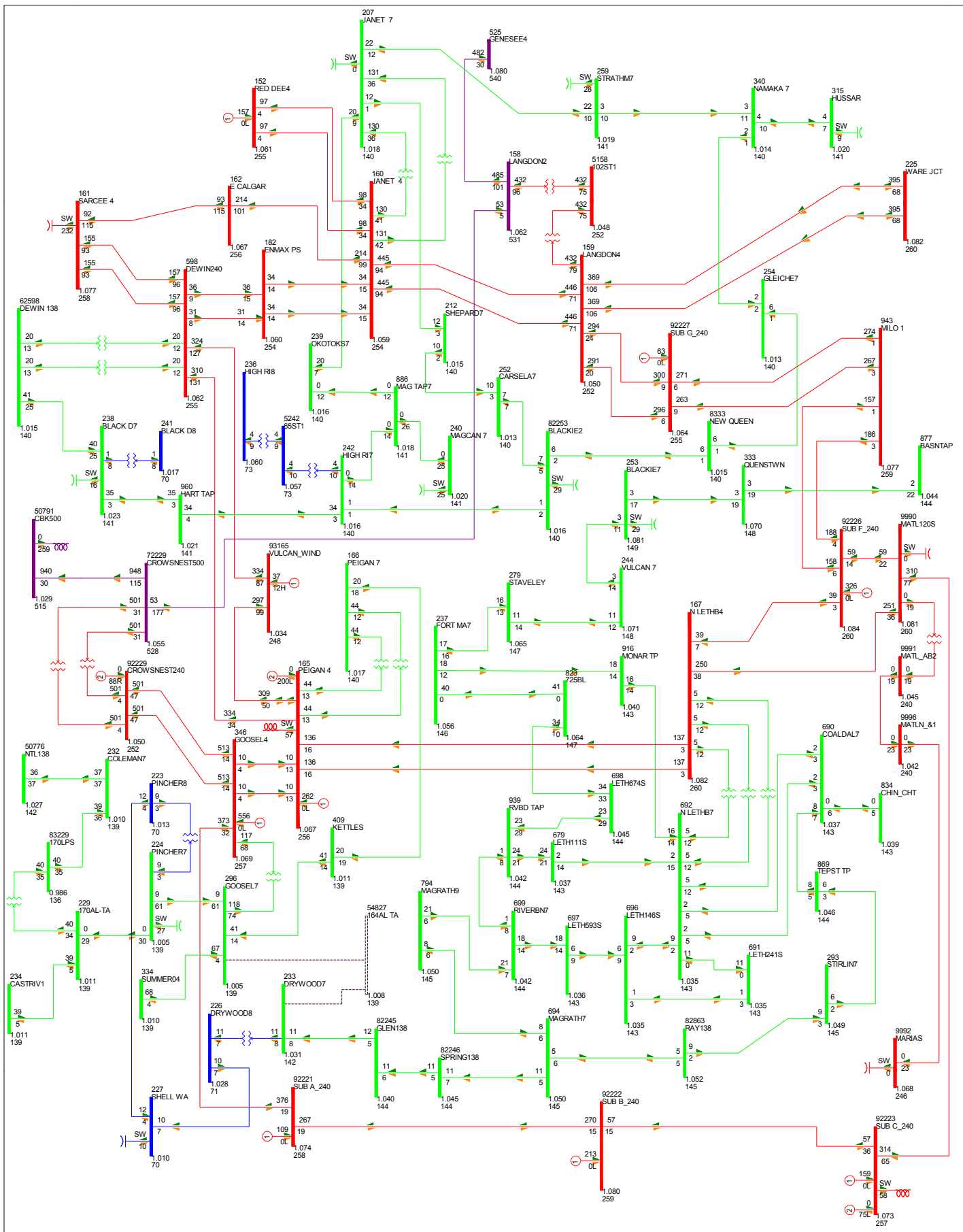


FIG 2017-1A-SL-48: GOOSELAKE TO DRYWOOD 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

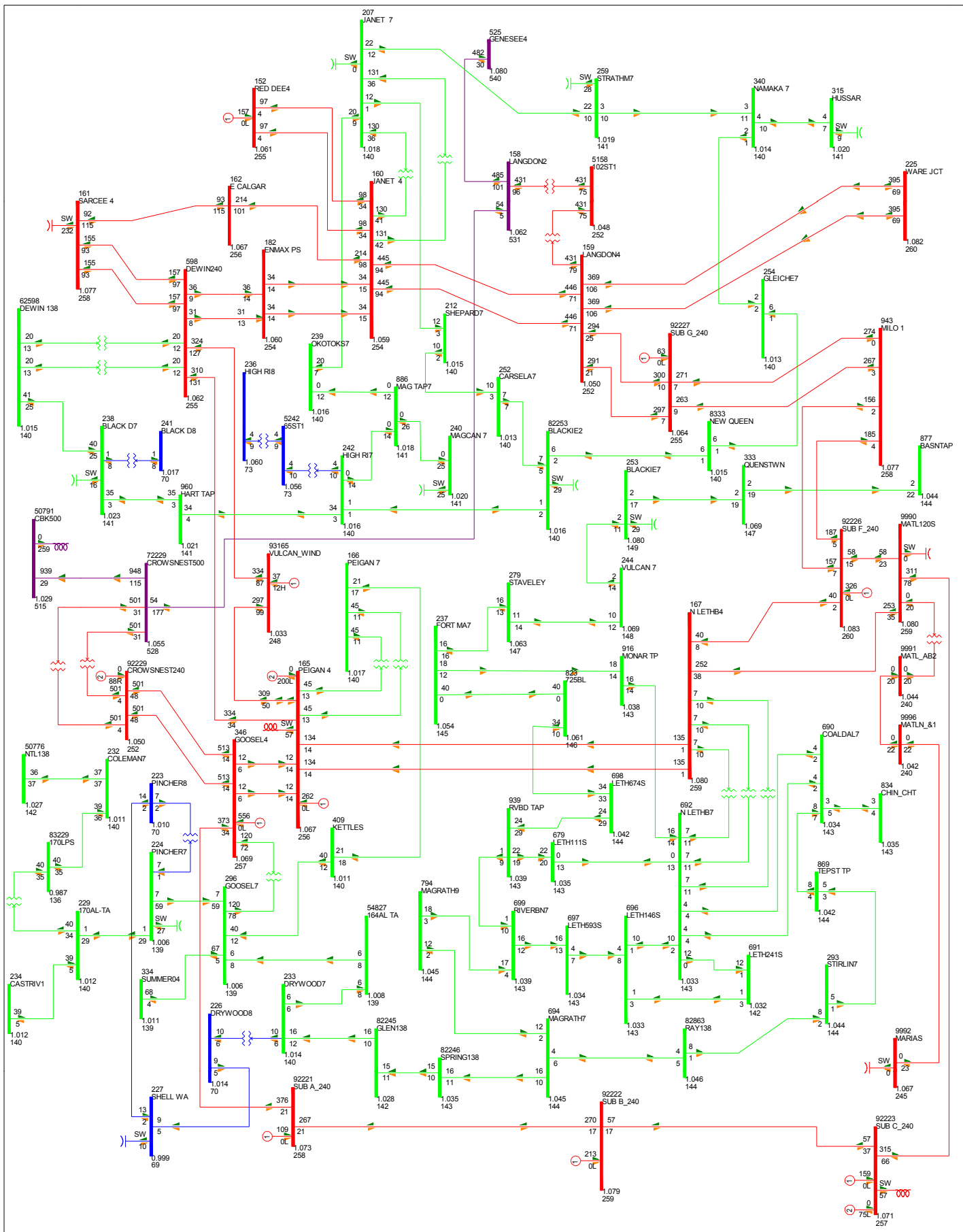


FIG 2017-1A-SL-50: WESTBROOKS TO TILLEY 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1006 MW

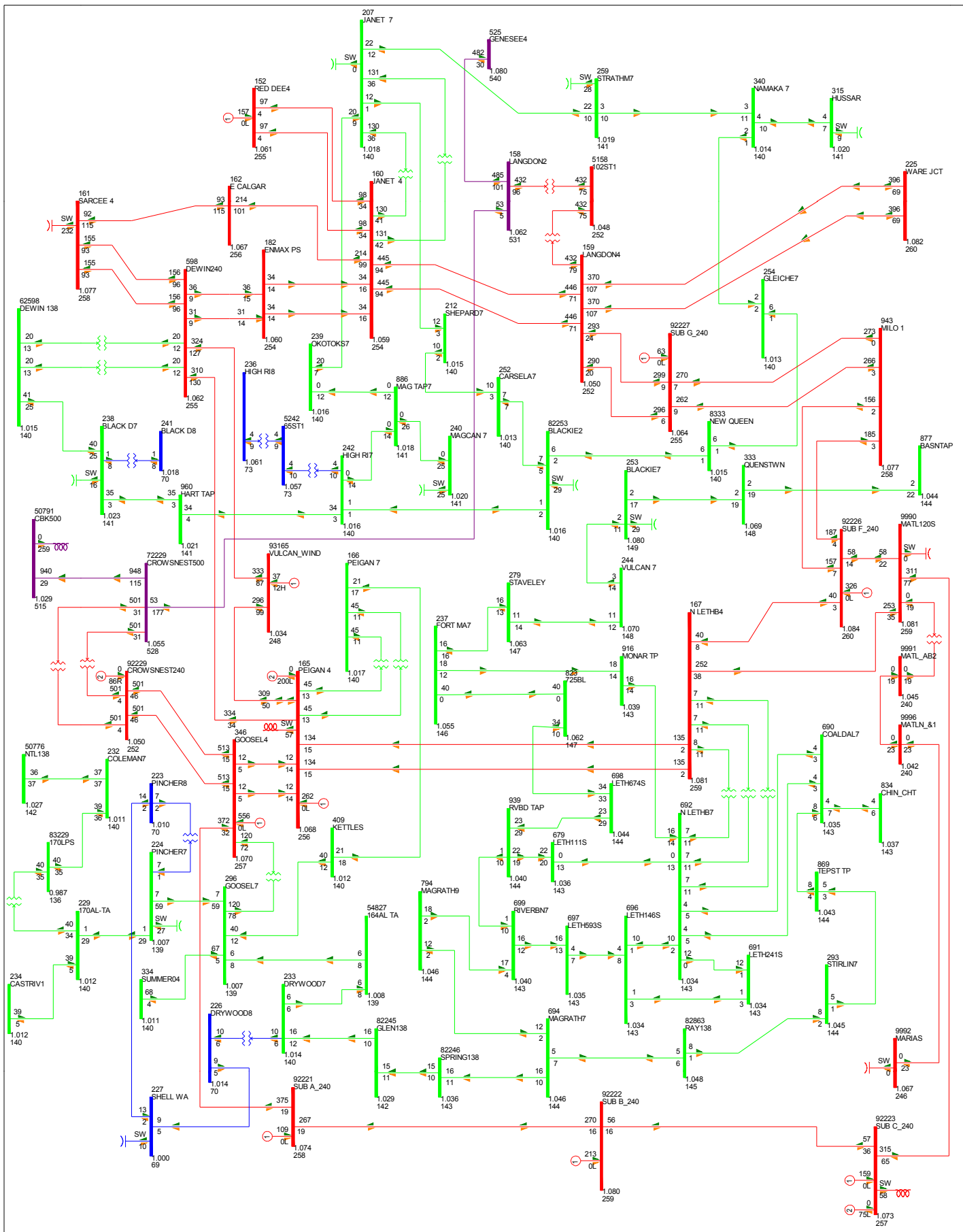


FIG 2017-1A-SL-52: MEDHAT TO CHAPPICE LAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

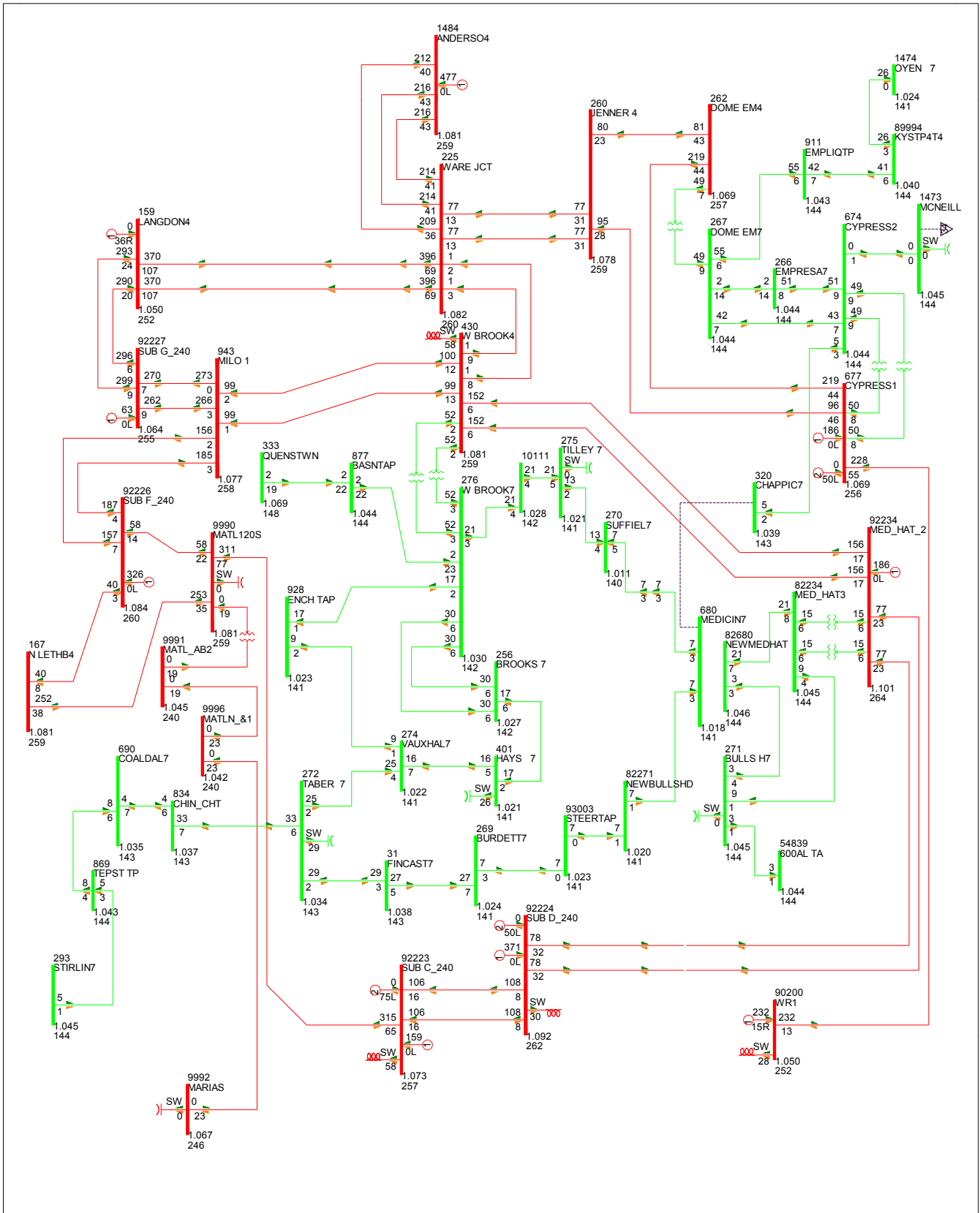


FIG 2017-1A-SL-53: MEDHAT TO CHAPPICE LAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

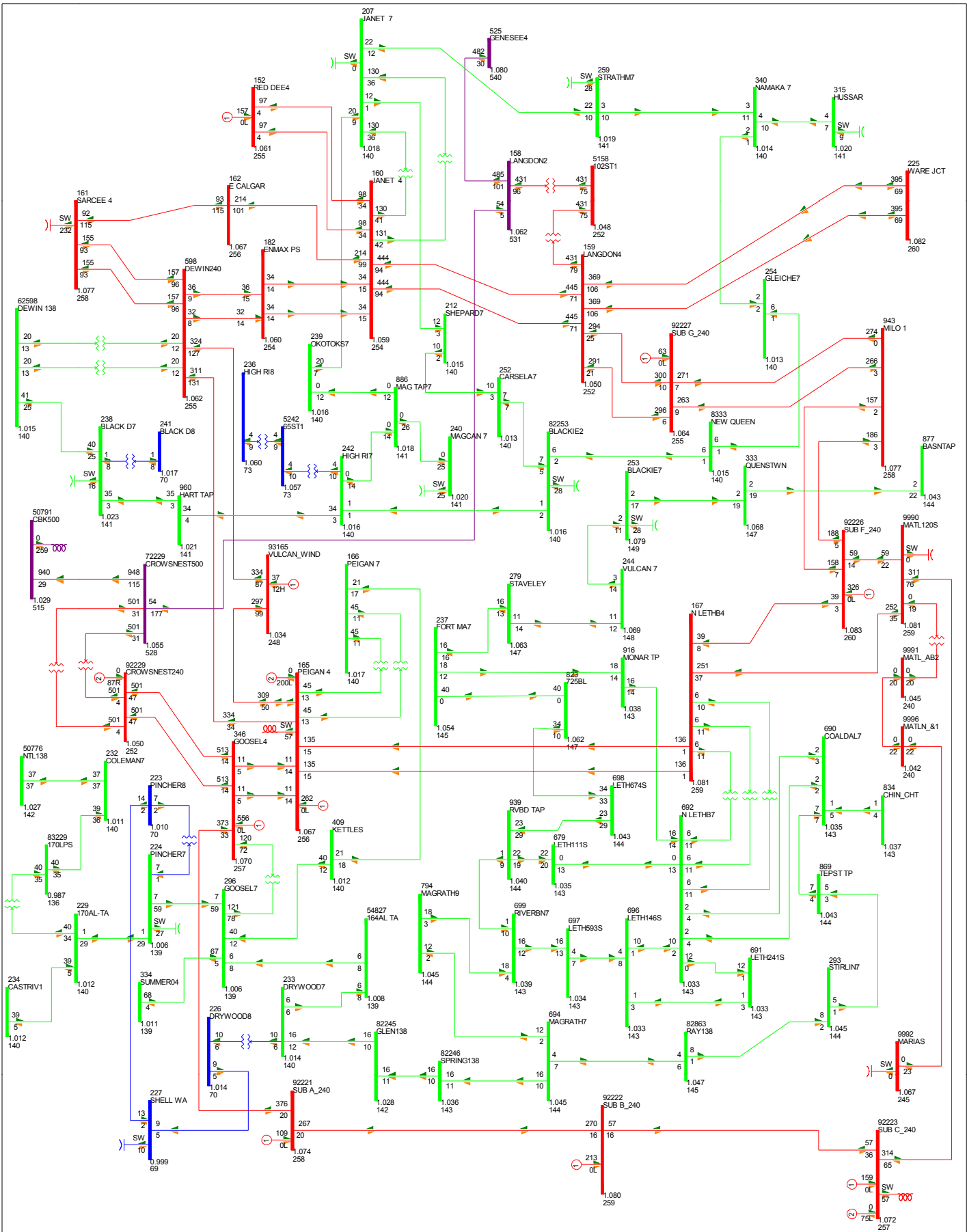


FIG 2017-1A-SL-54: MEDHAT TO BURDETTE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

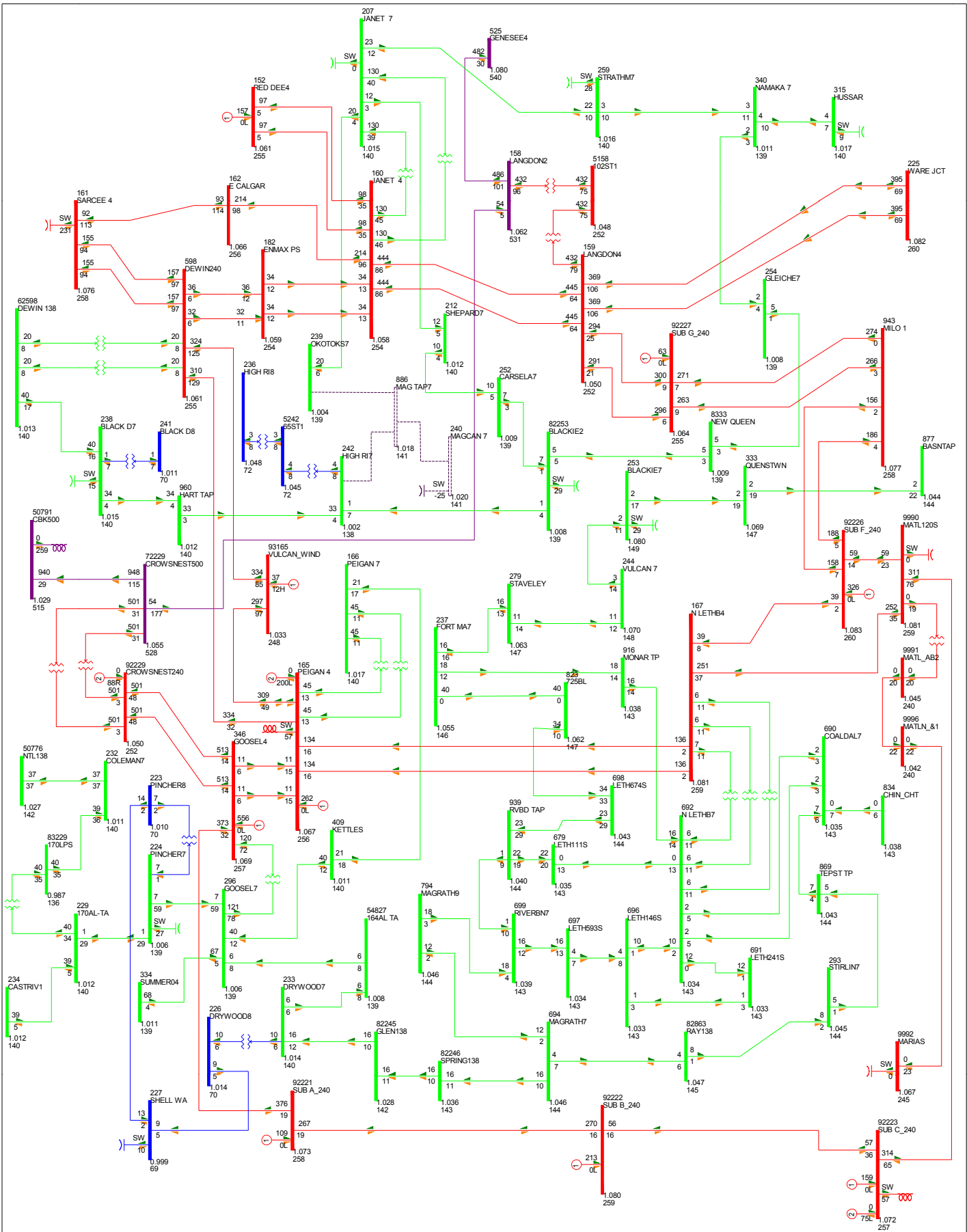


FIG 2017-1A-SL-56: HIGH RIVER TO OKOTOKS 138 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1007 MW

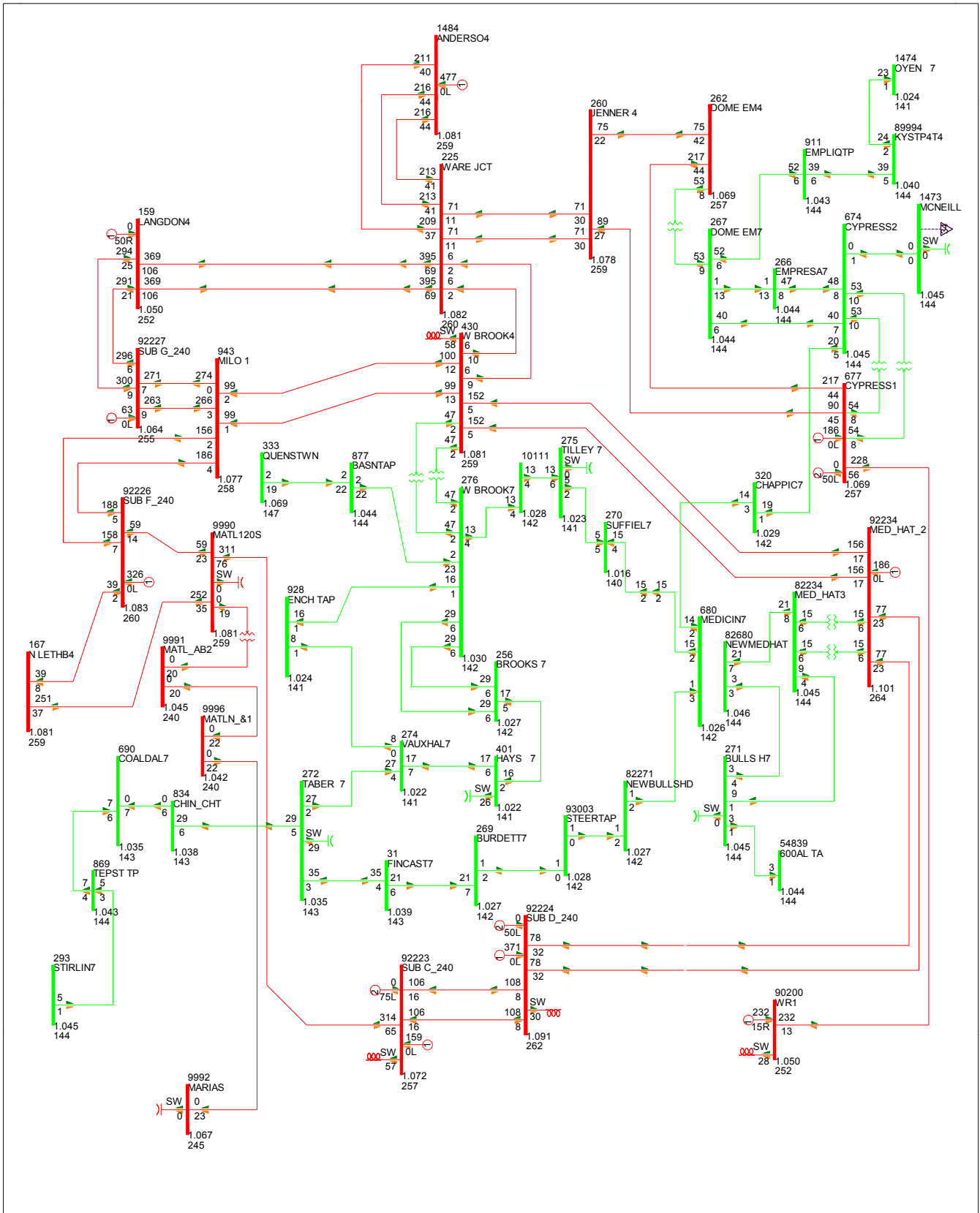


FIG 2017-1A-SL-57: HIGH RIVER TO OKOTOKS 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

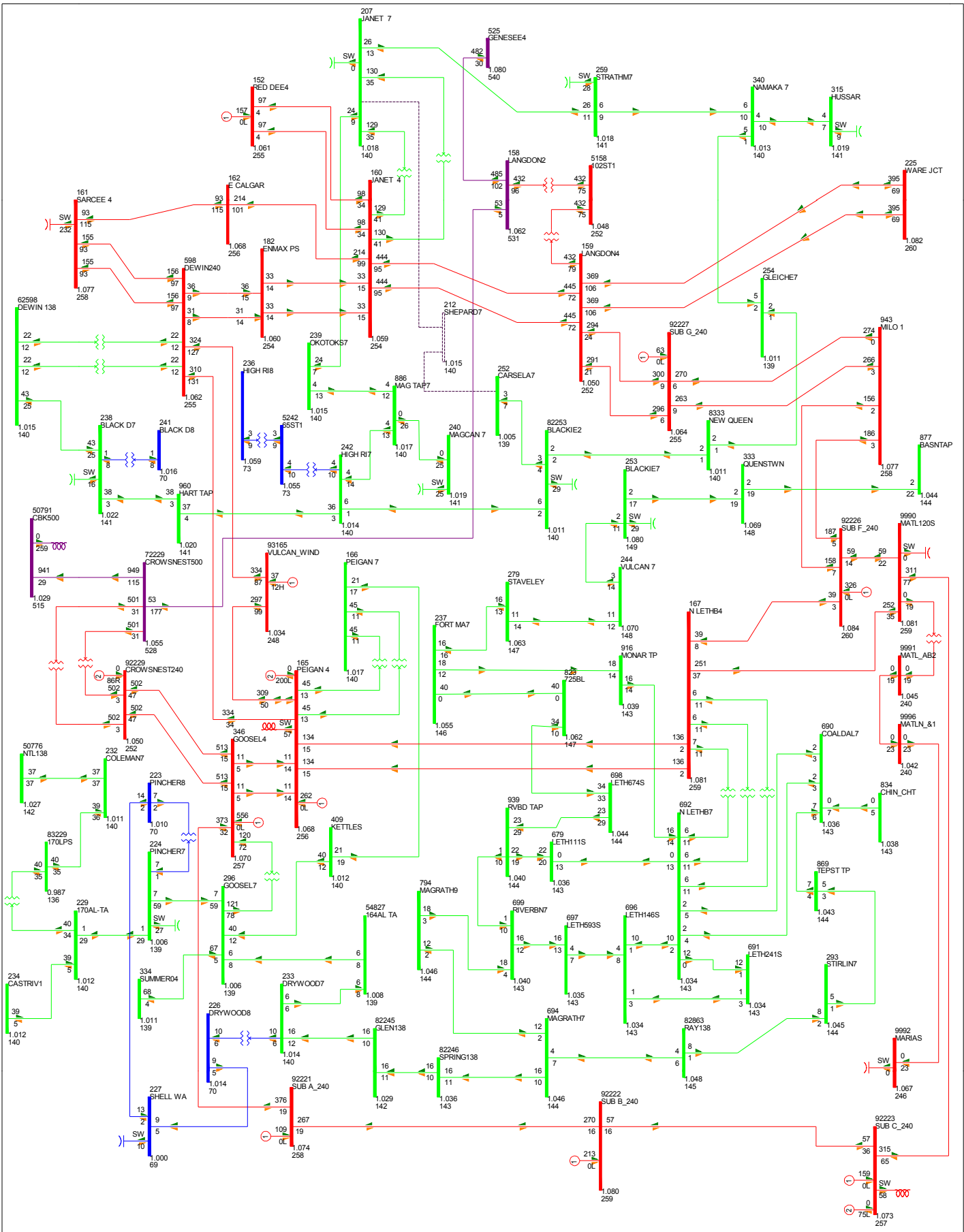


FIG 2017-1A-SL-58: JANET TO CARSELAND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, DEC 01 2008 16:15

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1008 MW

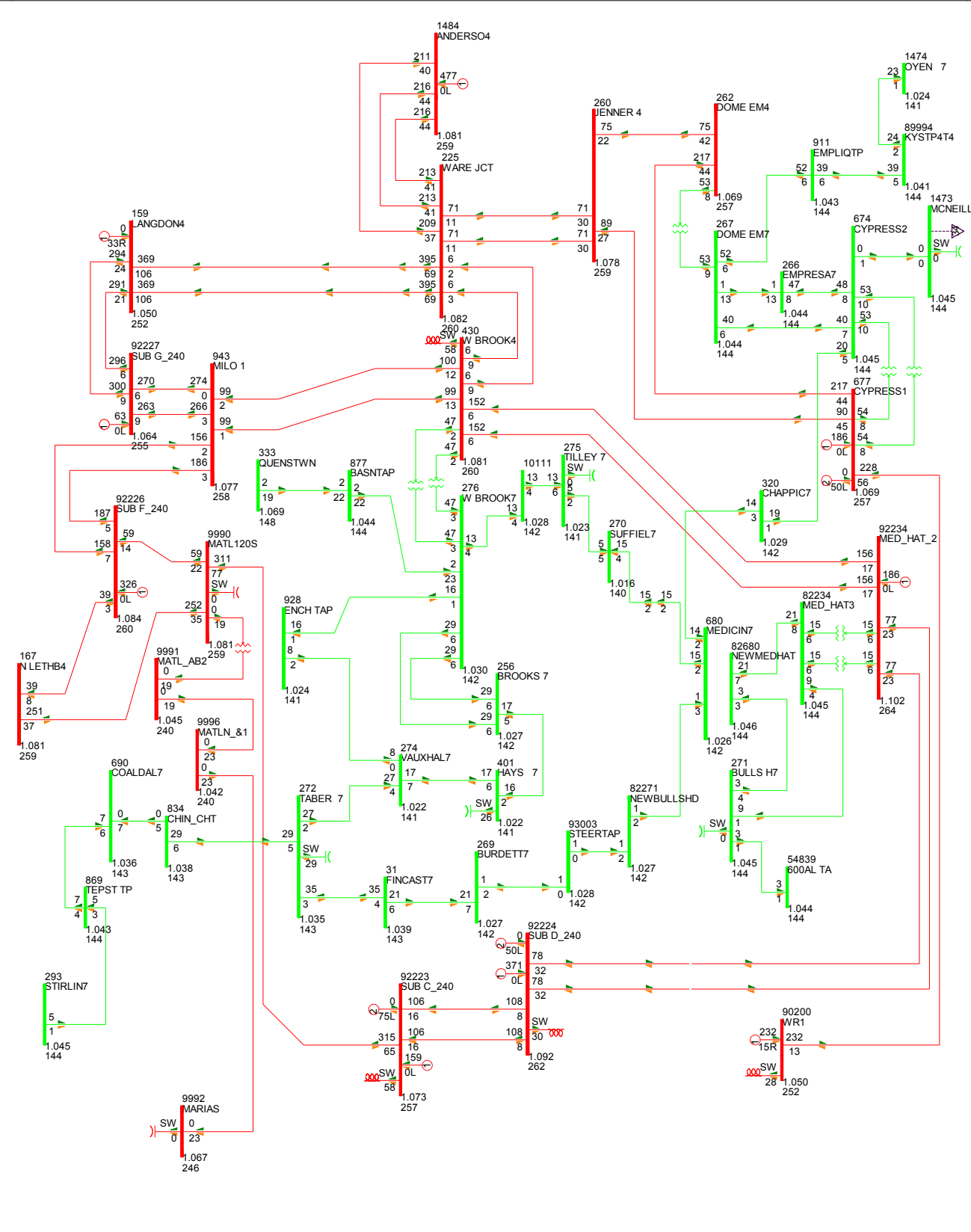


FIG 2017-1A-SL-59: JANET TO CARSELAND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, DEC 01 2008 16:15

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1008 MW

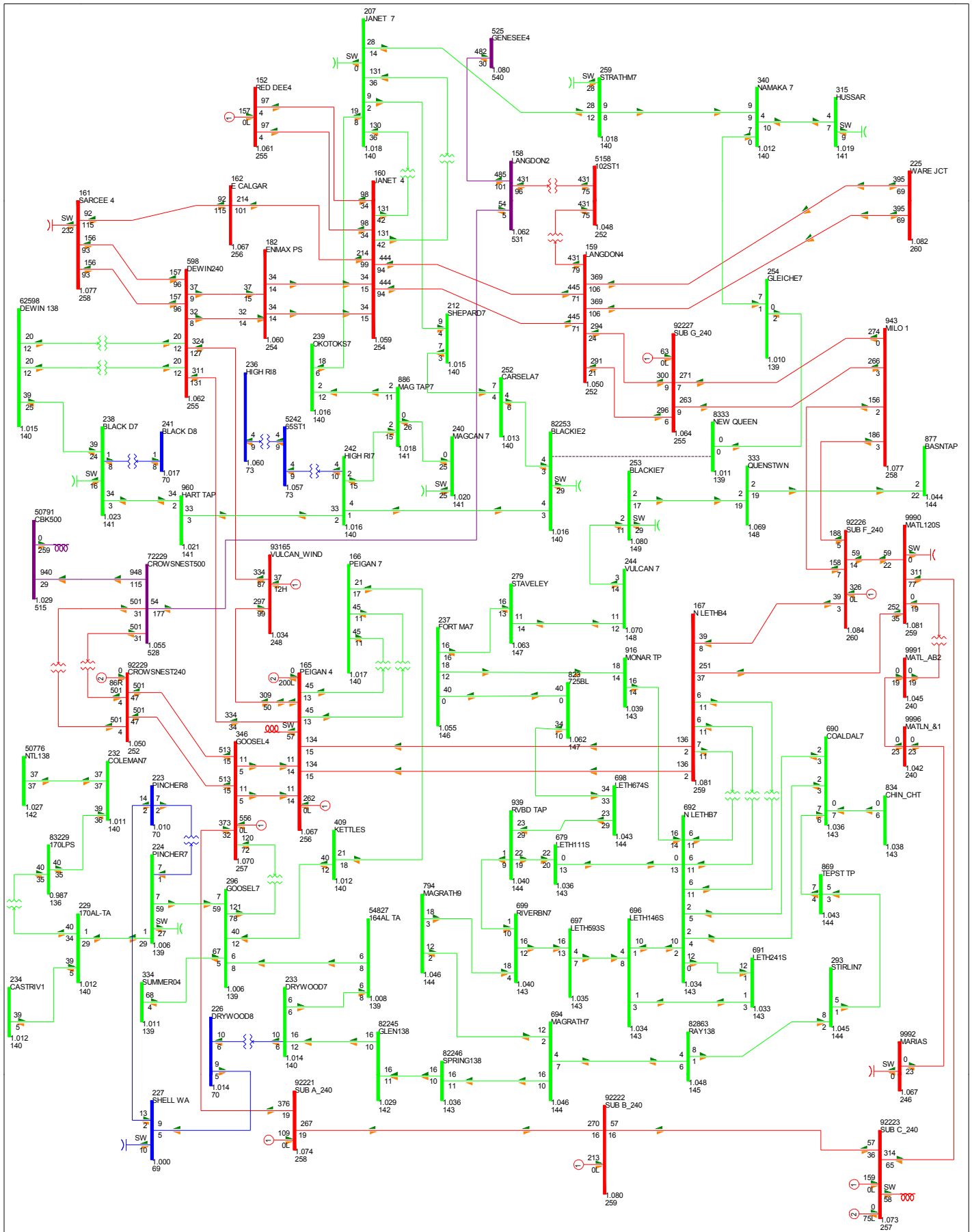


FIG 2017-1A-SL-60: BLACKIE TO QUEESTOWN 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 1007 MW

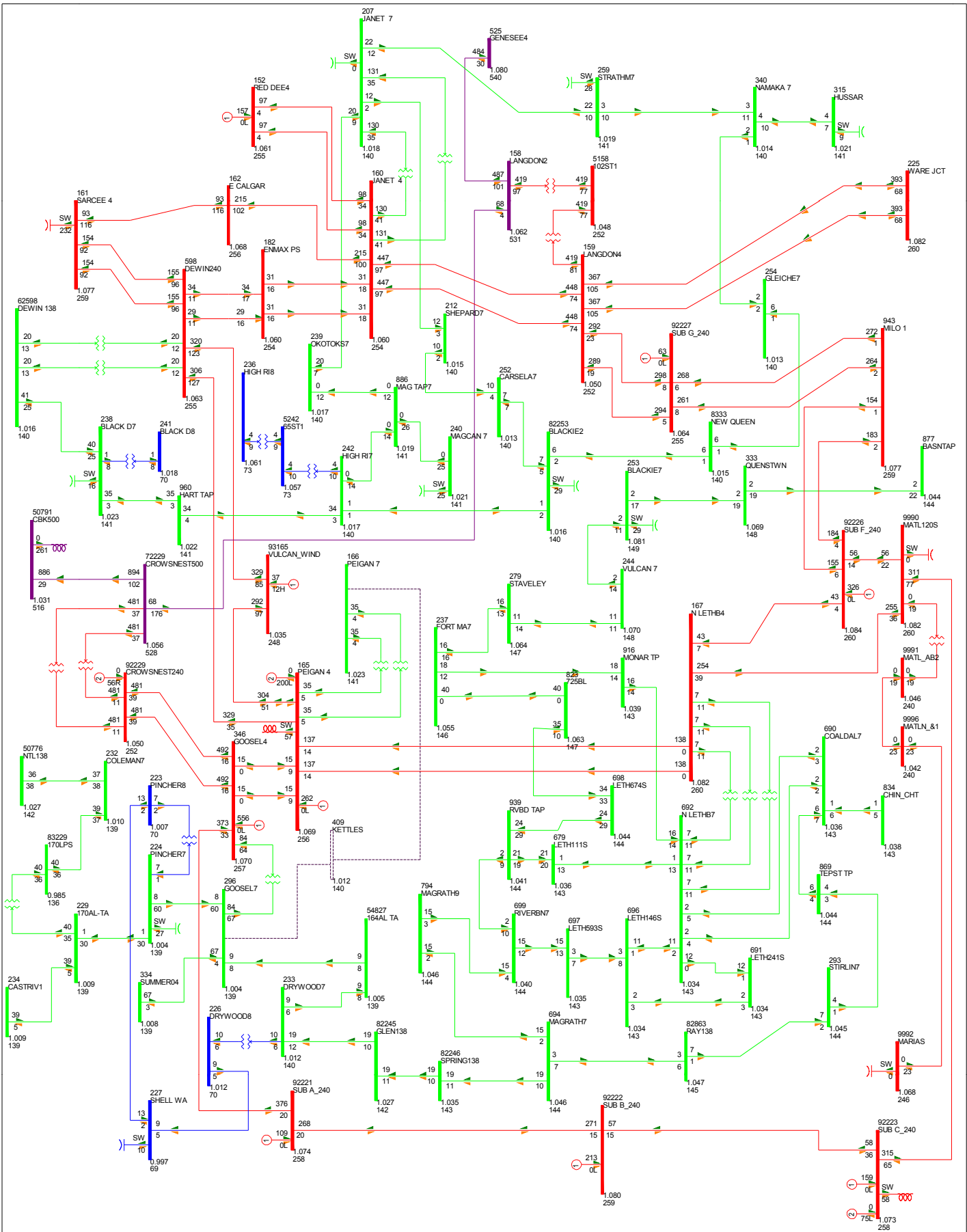


FIG 2017-1A-SL-62: PEIGAN TO GOOSELAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000
 BC Export: 950 MW

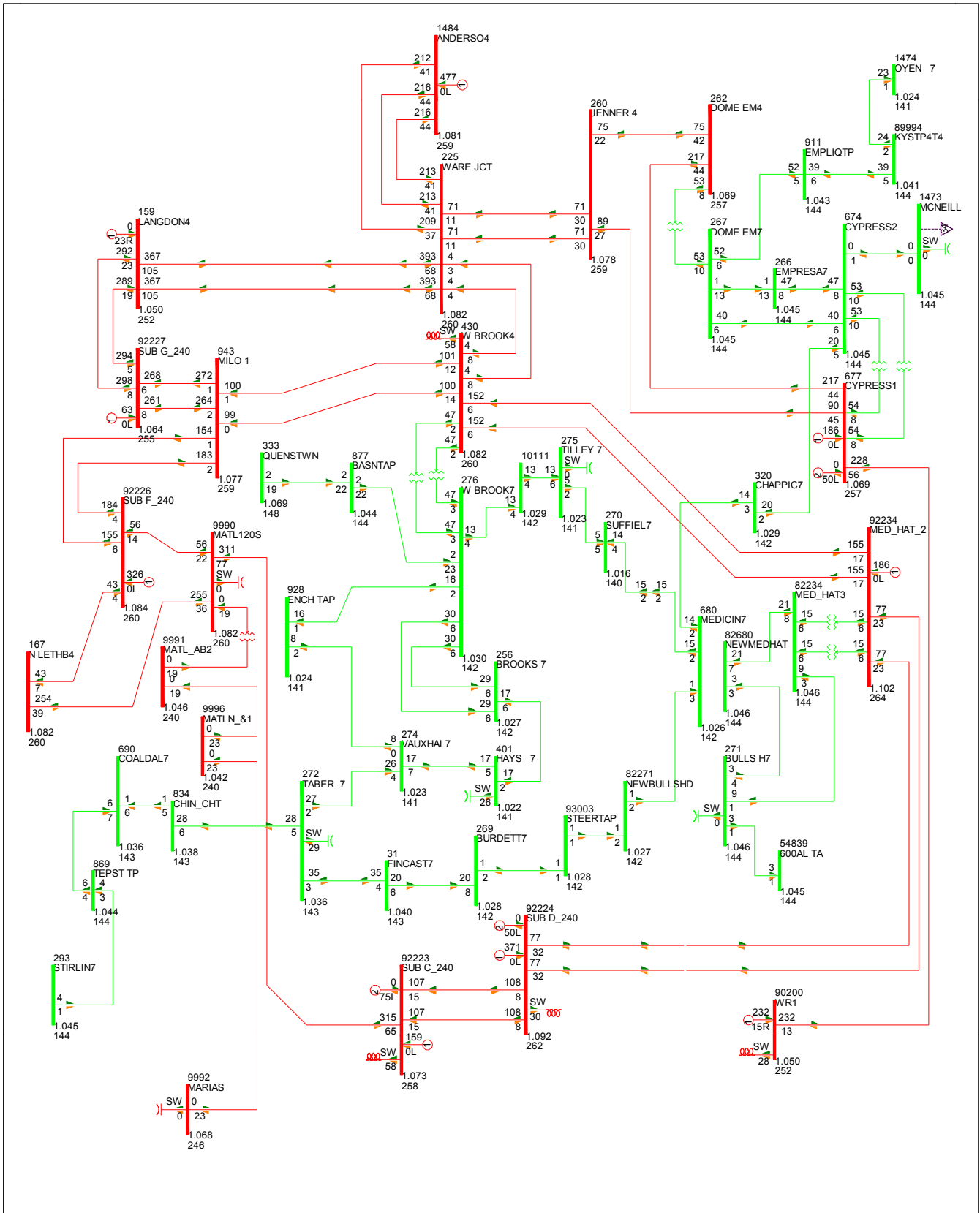


FIG 2017-1A-SL-63: PEIGAN TO GOOSELAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 950 MW

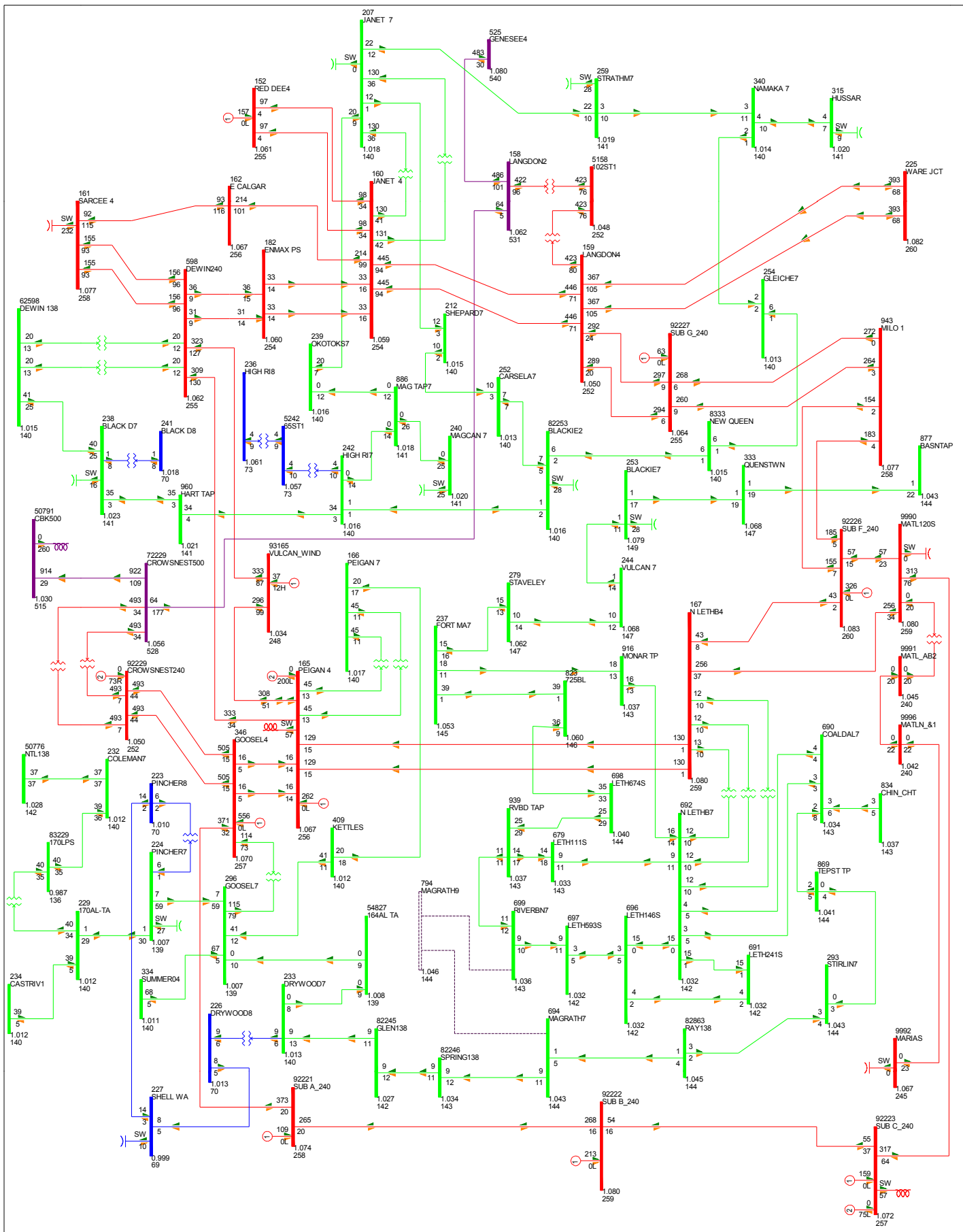


FIG 2017-1A-SL-64: MAGRATH TO RIVERBEND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 980 MW

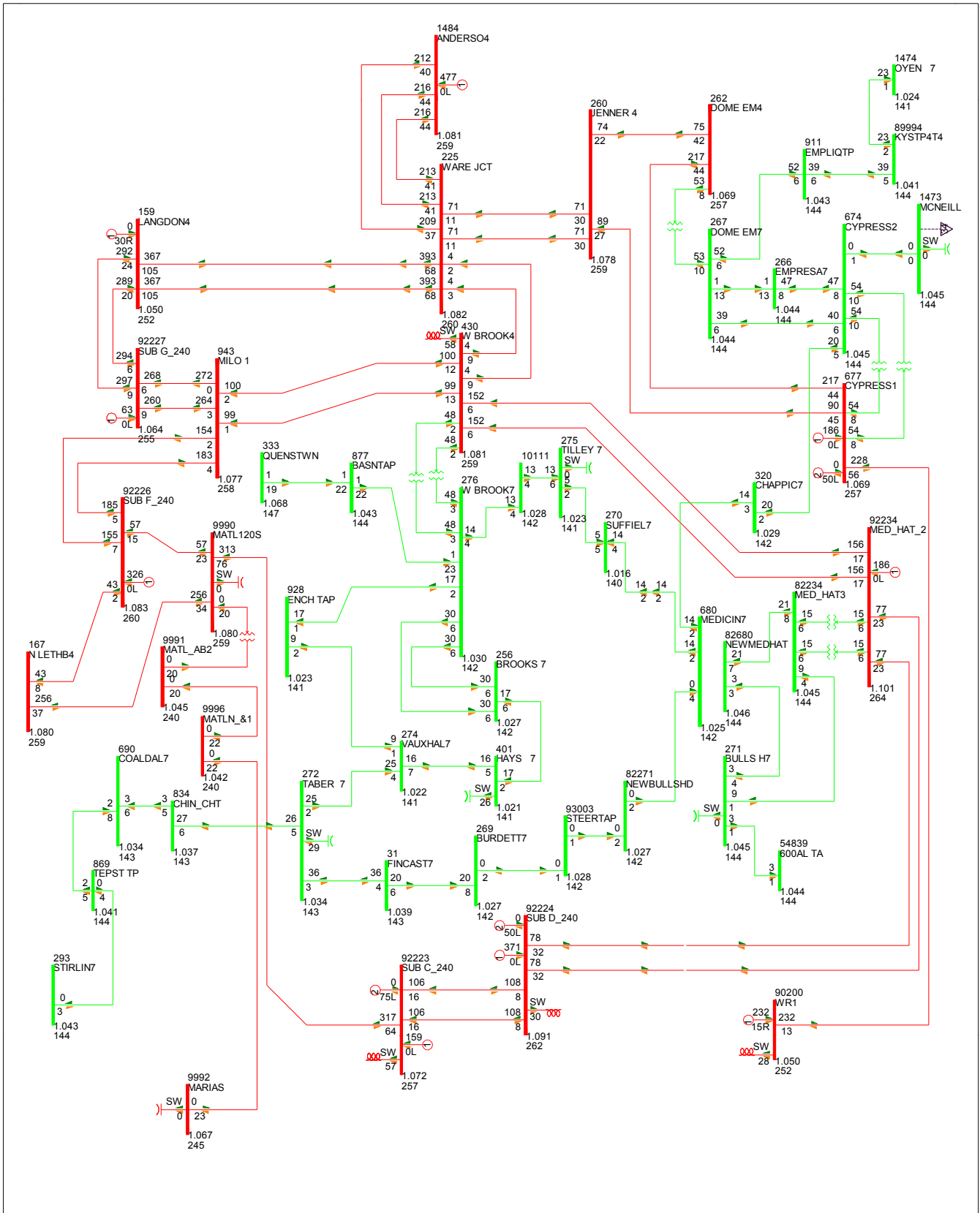


FIG 2017-1A-SL-65: MAGRATH TO RIVERBEND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 980 MW

GENERATION DISPATCH REPORT

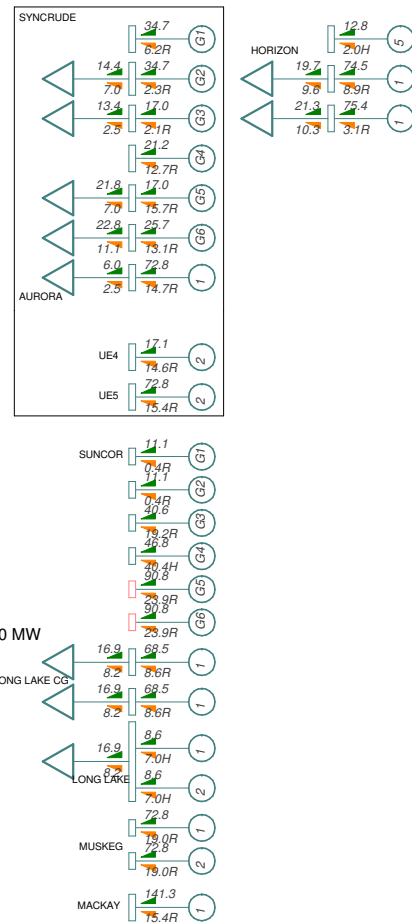
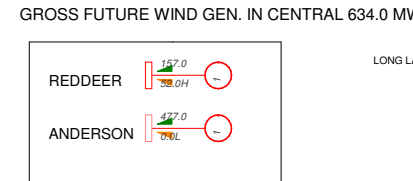
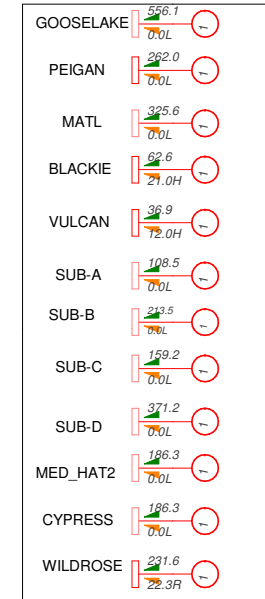
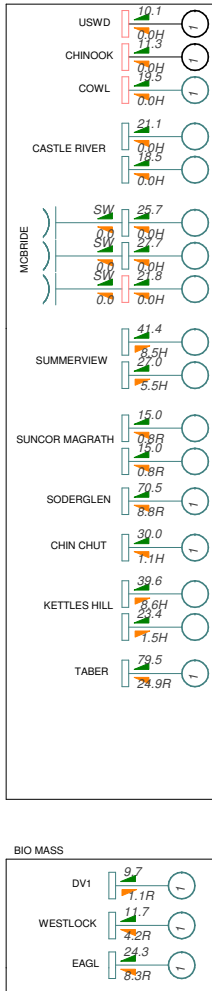
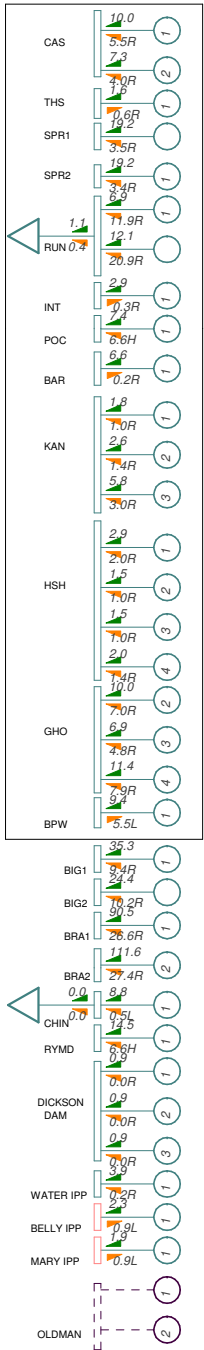
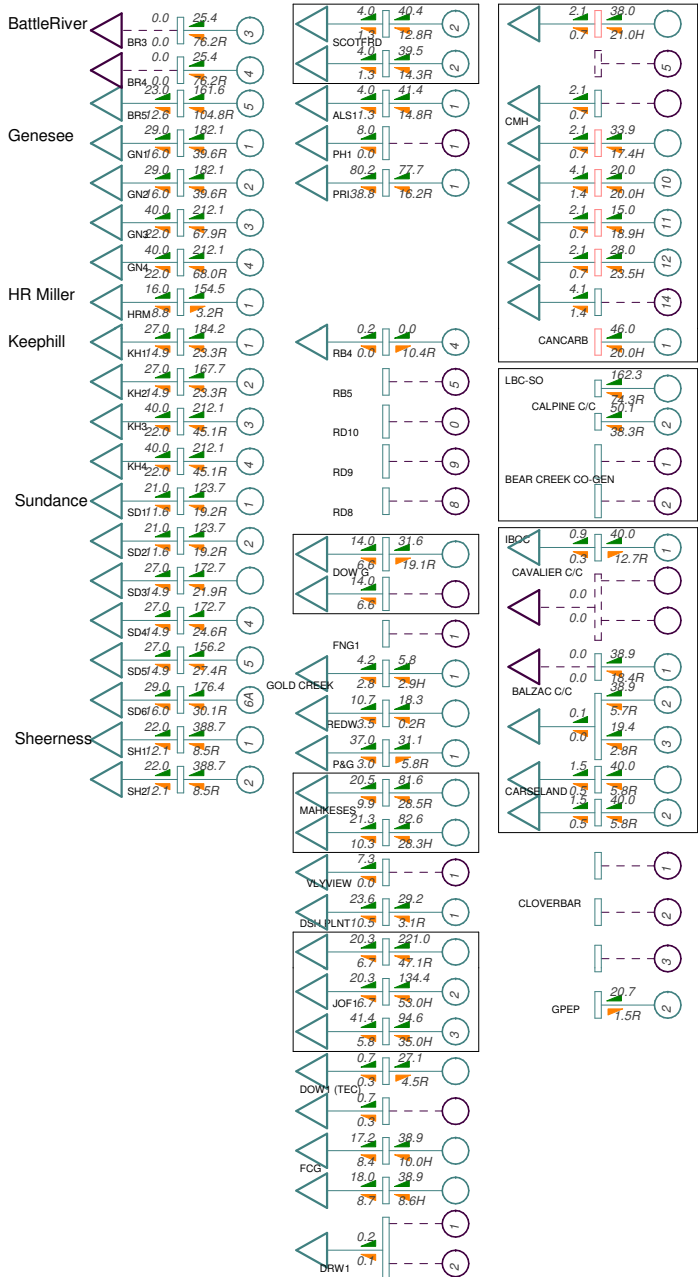
GROSS COAL GEN. 3634.3 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER PEAK CASE

MON, NOV 24 2008 14:42

Bus - NONE
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%PATEA
 1.050OV 0.950UV
 KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1A-SP-1

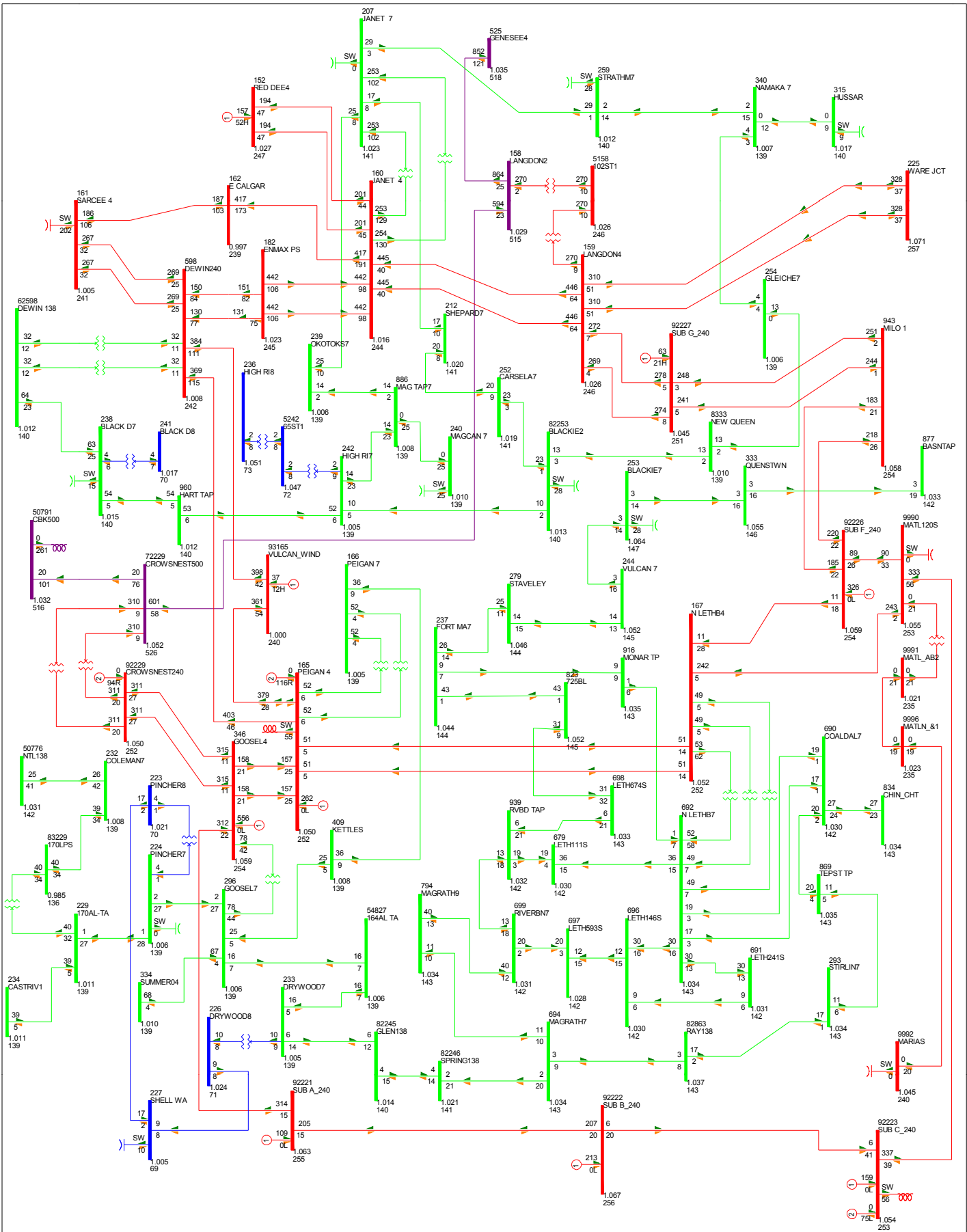


FIG 2017-1A-SP-2: N-0 CONDITION

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

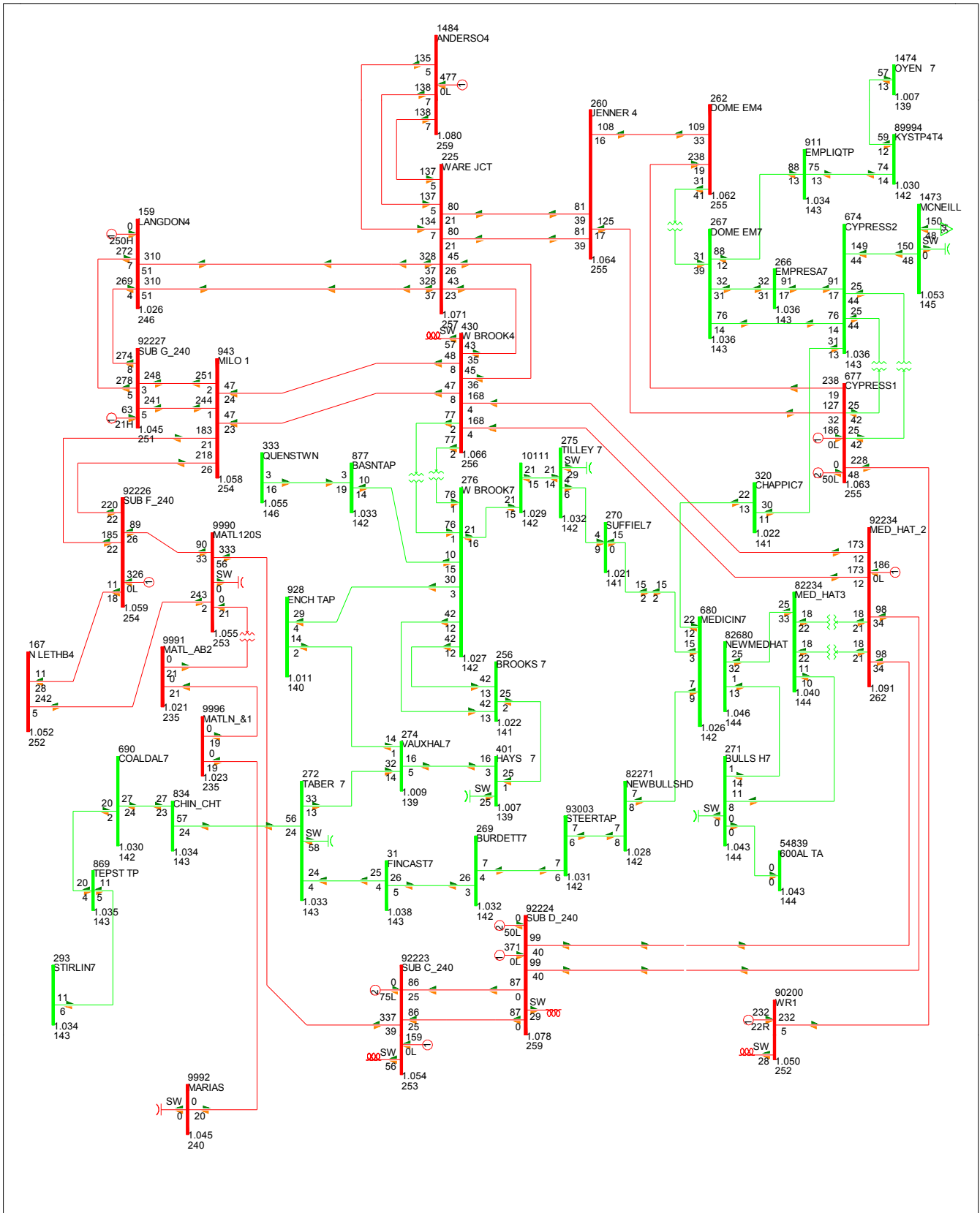


FIG 2017-1A-SP-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

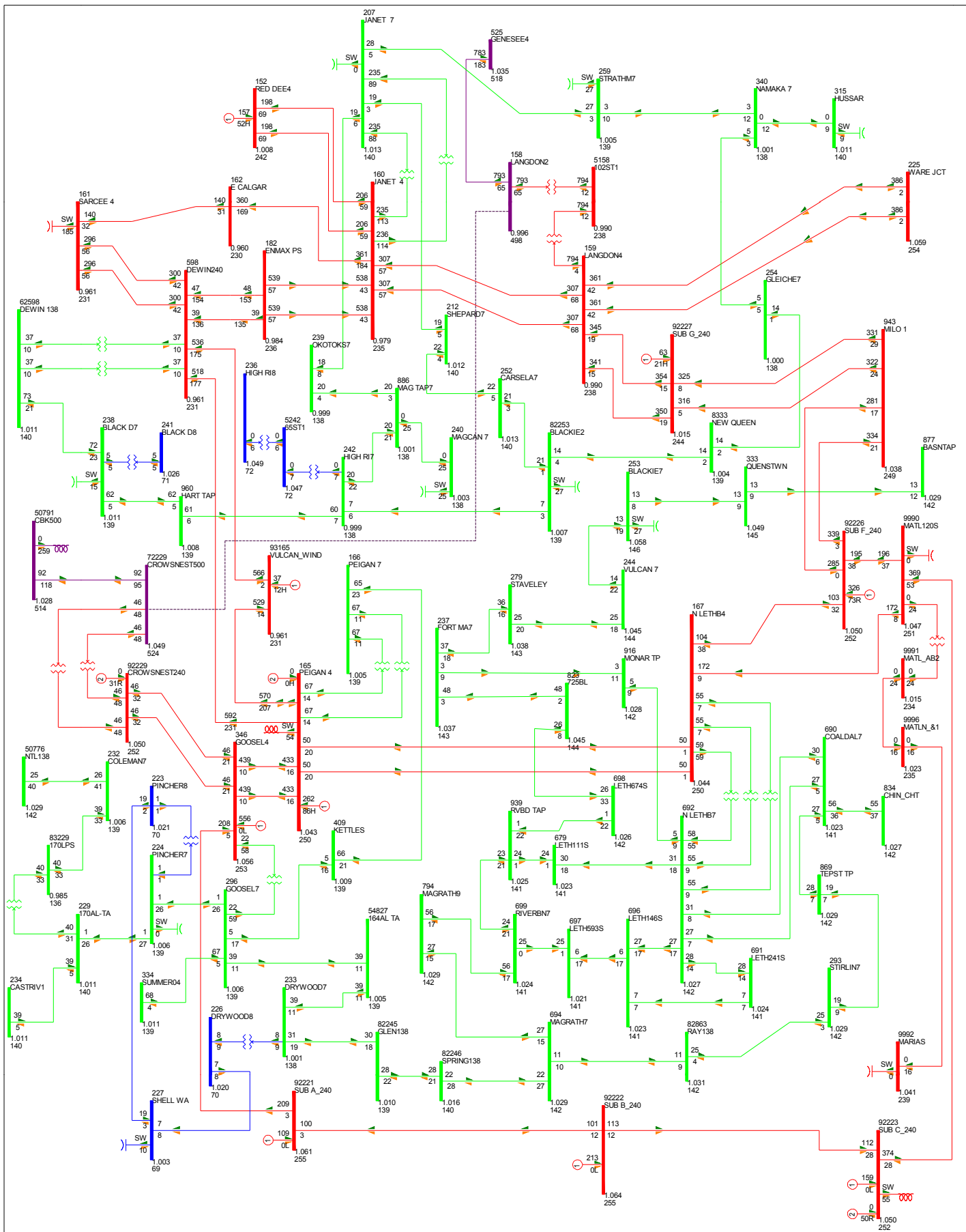


FIG 2017-1A-SP-4: LANGDON TO CROWSNEST 500 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:40

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=240.000 <=500.000 >500.000

BC Export: -142 MW

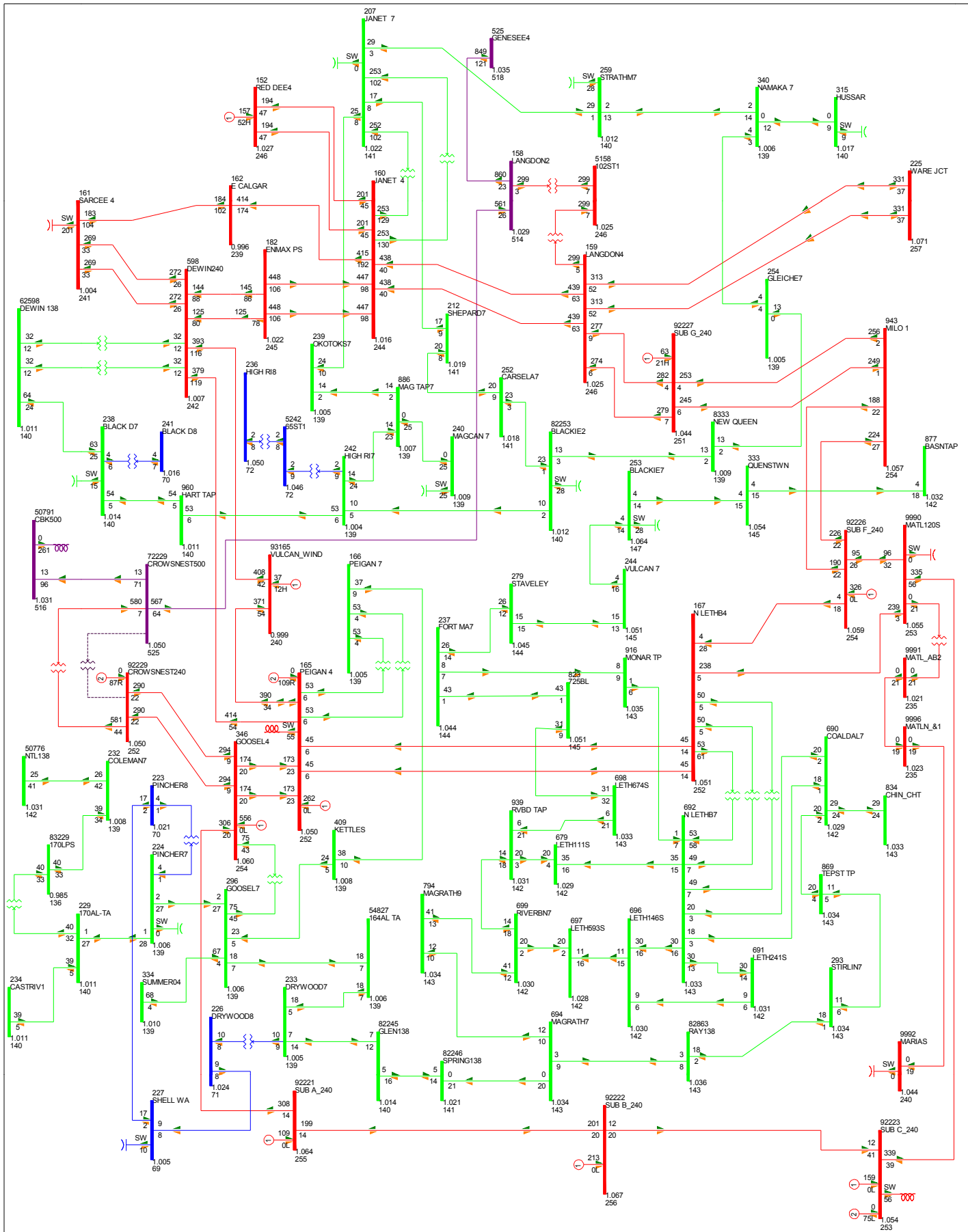


FIG 2017-1A-SP-6: CROWNSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 9 MW

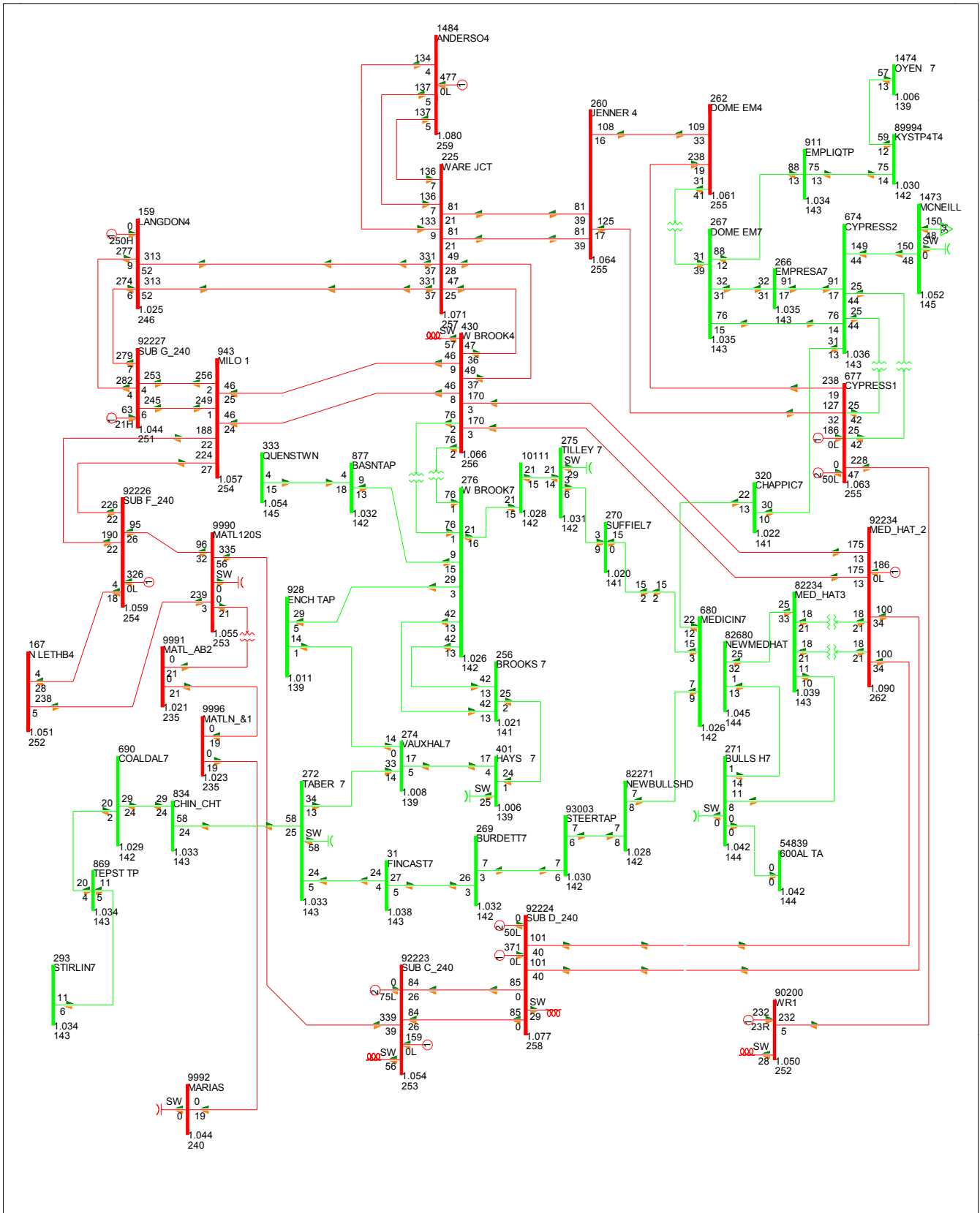


FIG 2017-1A-SP-7: CROWSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 9 MW

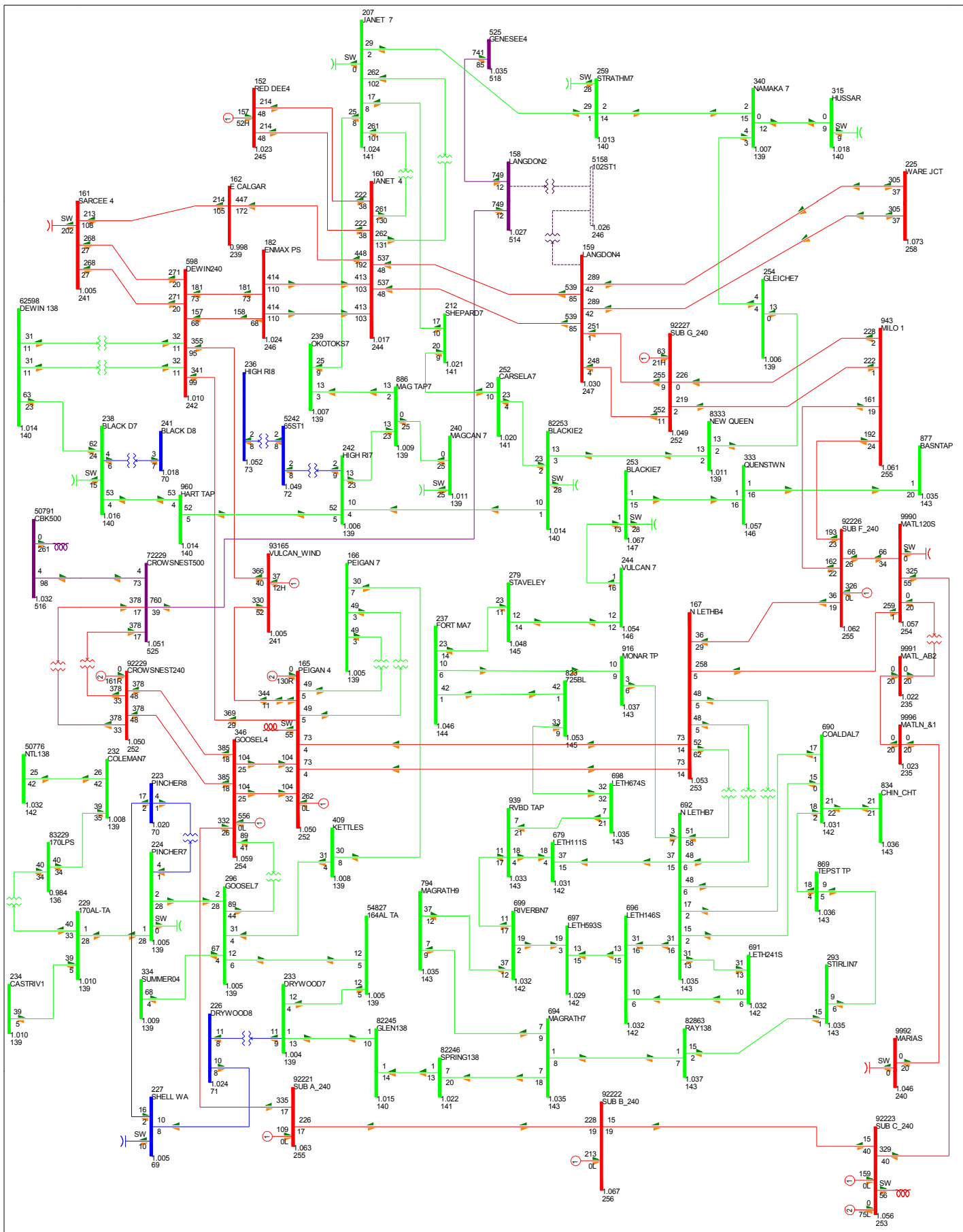


FIG 2017-1A-SP-8: LANGDON 500/240 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -2 MW

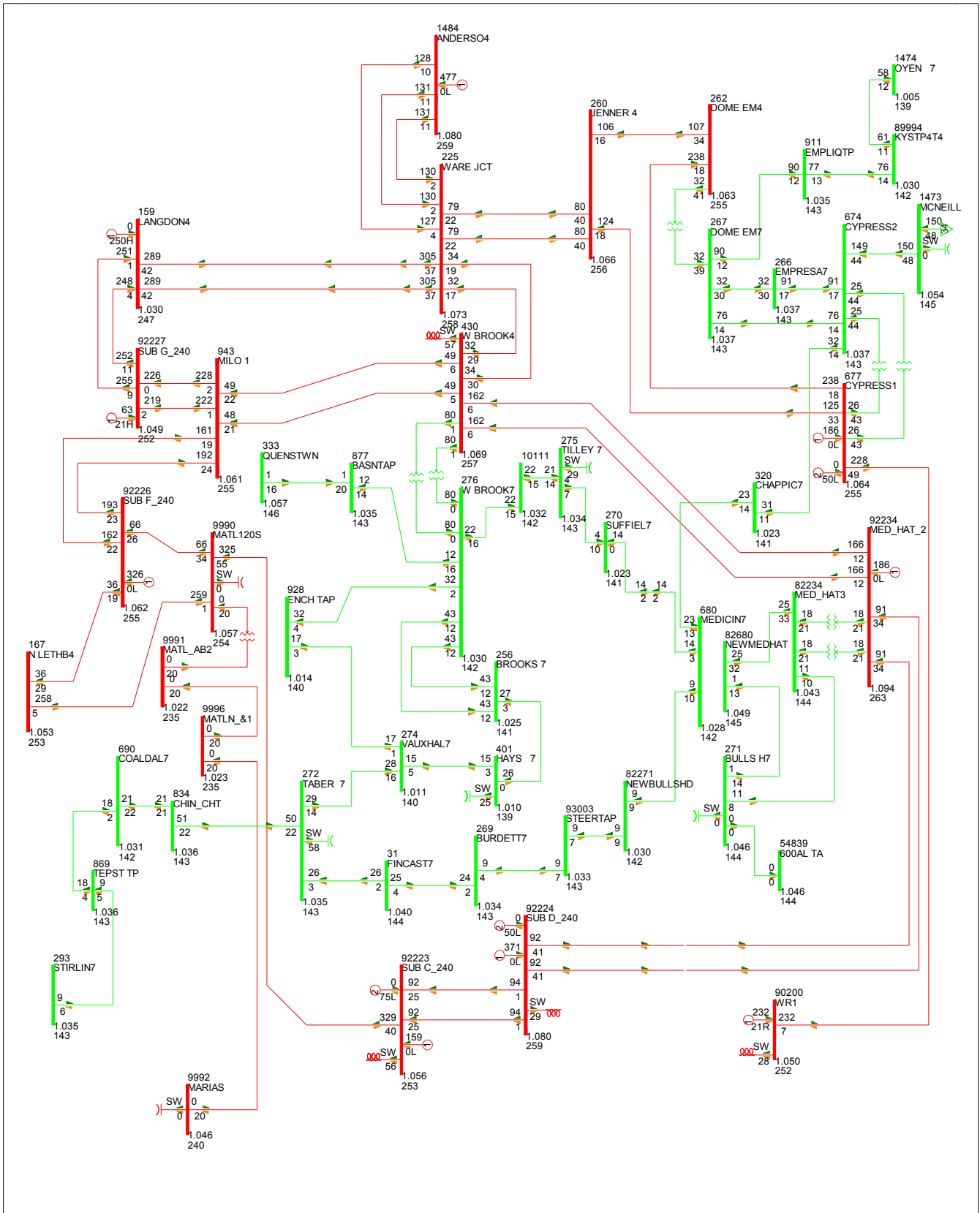


FIG 2017-1A-SP-9: LANGDON 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -2 MW

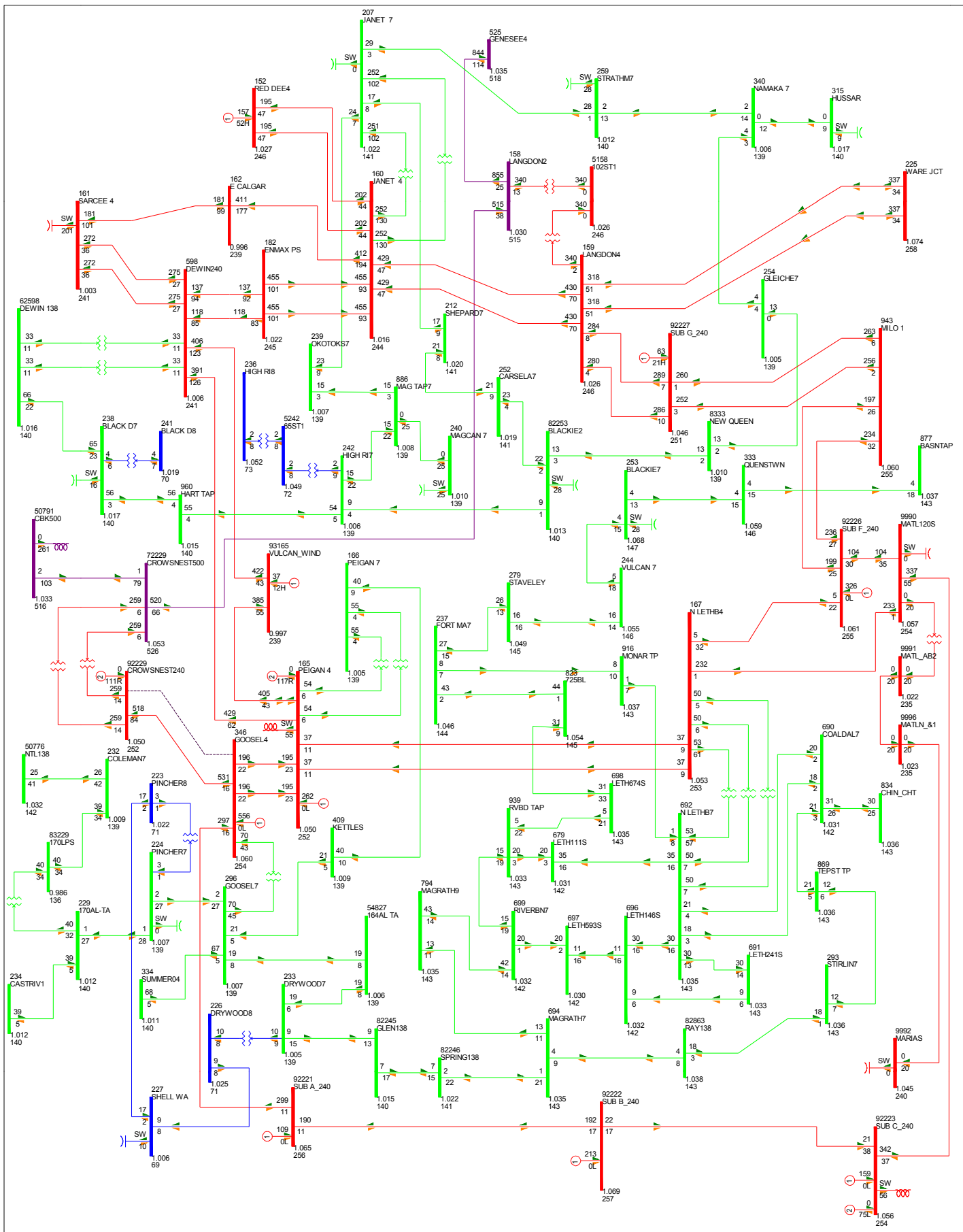


FIG 2017-1A-SP-10: CROWNSNEST TO GOOSELAKE 240KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -4 MW

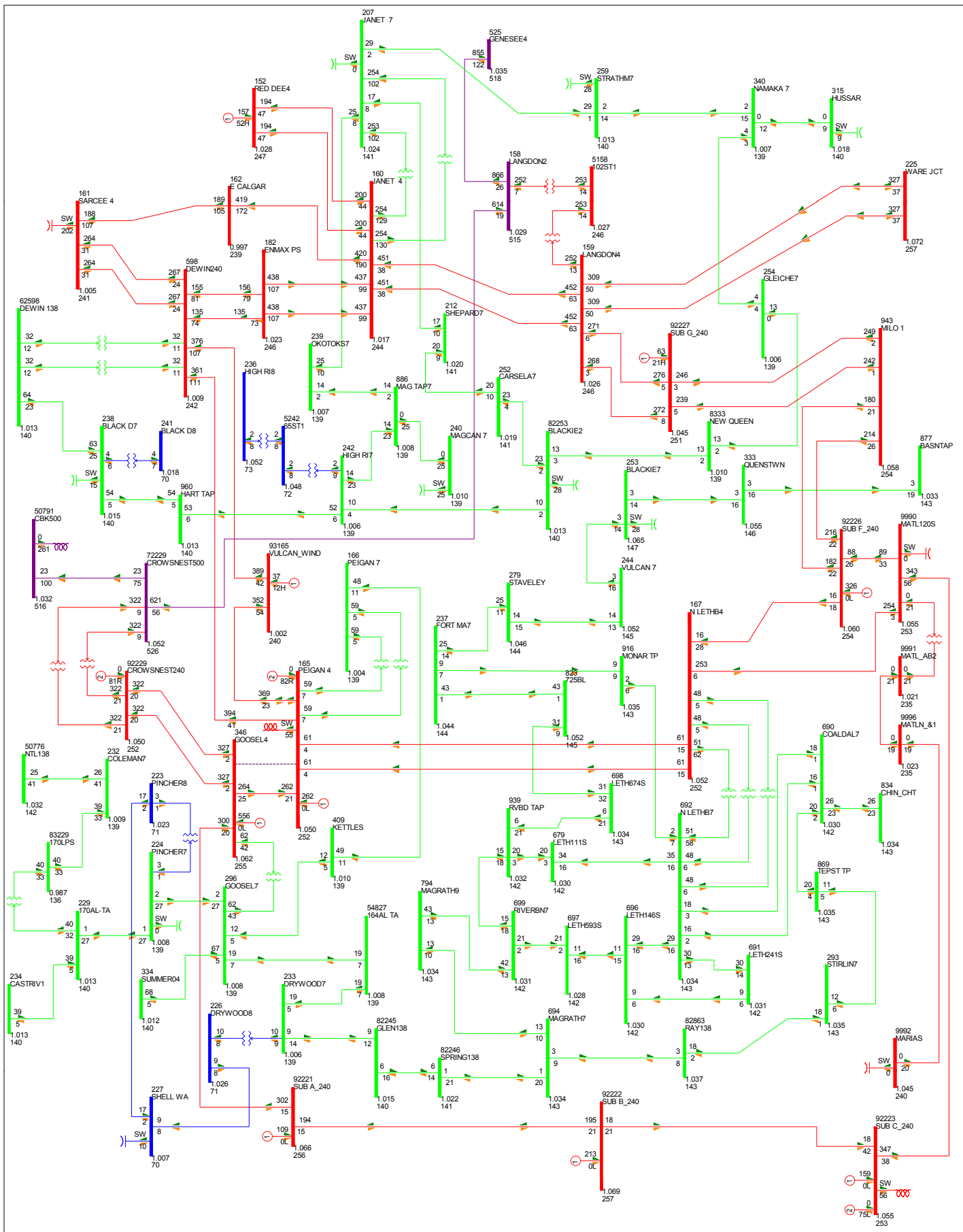


FIG 2017-1A-SP-12: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 17 MW

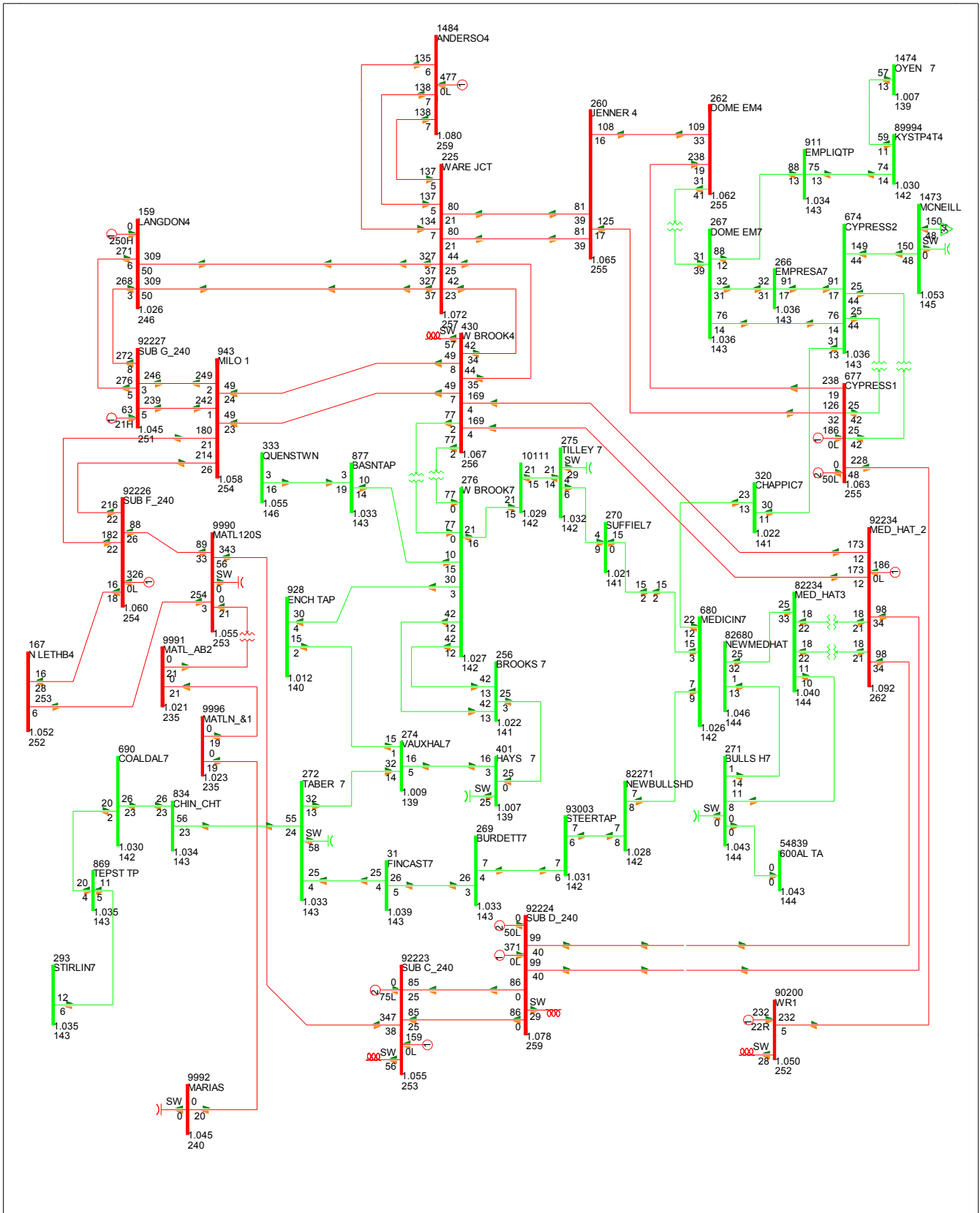


FIG 2017-1A-SP-13: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 17 MW

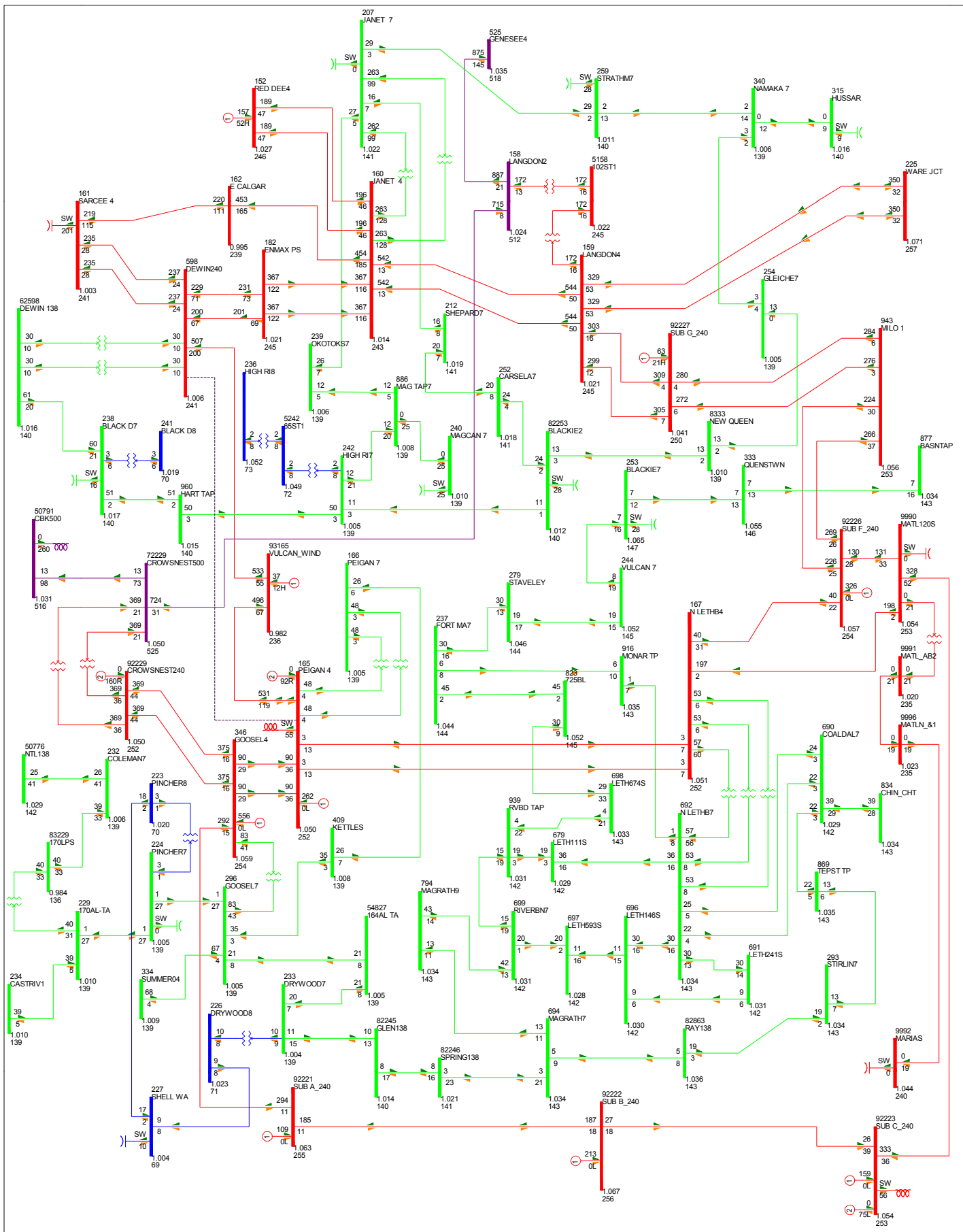


FIG 2017-1A-SP-14: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 0 MW

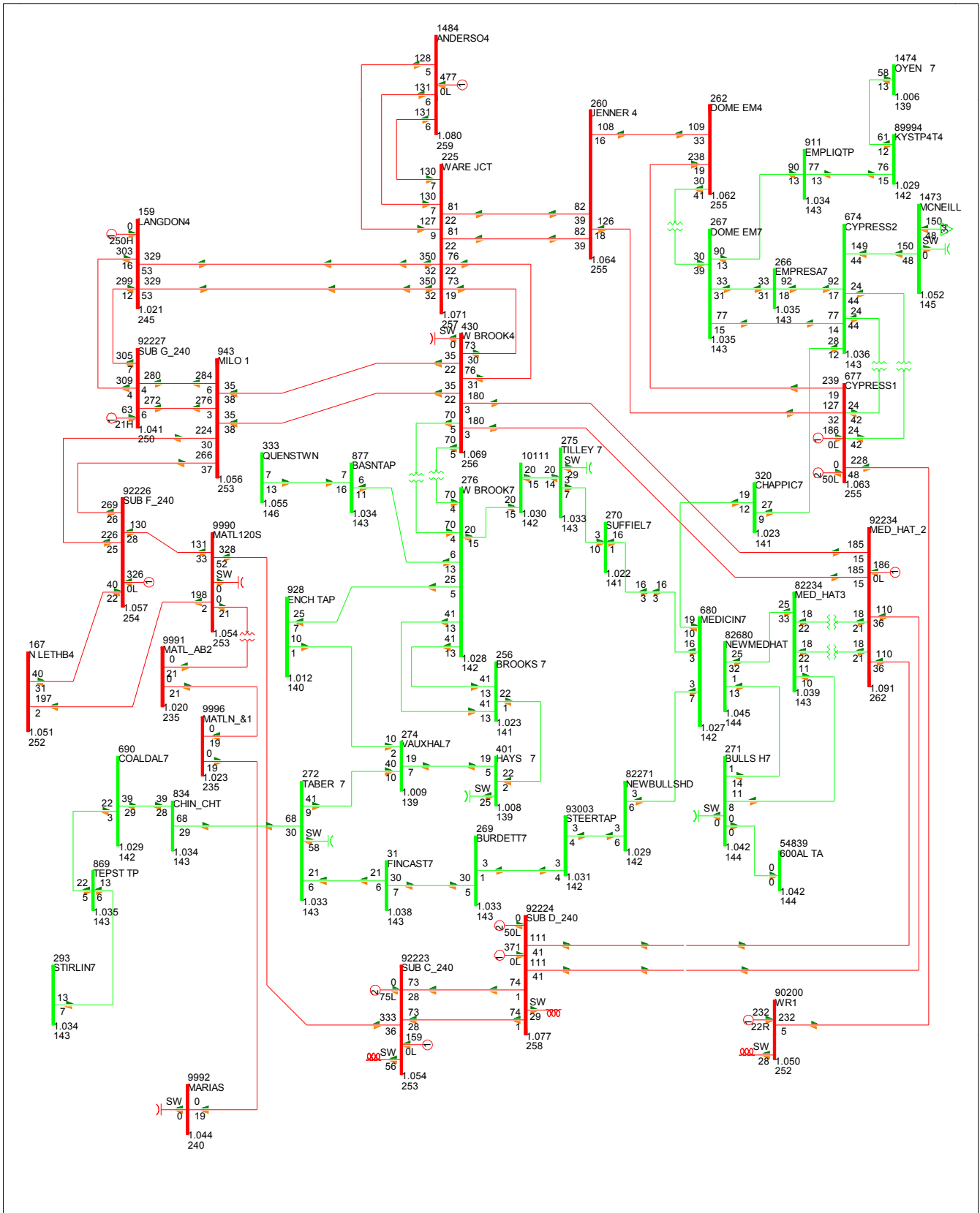


FIG 2017-1A-SP-15: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 0 MW

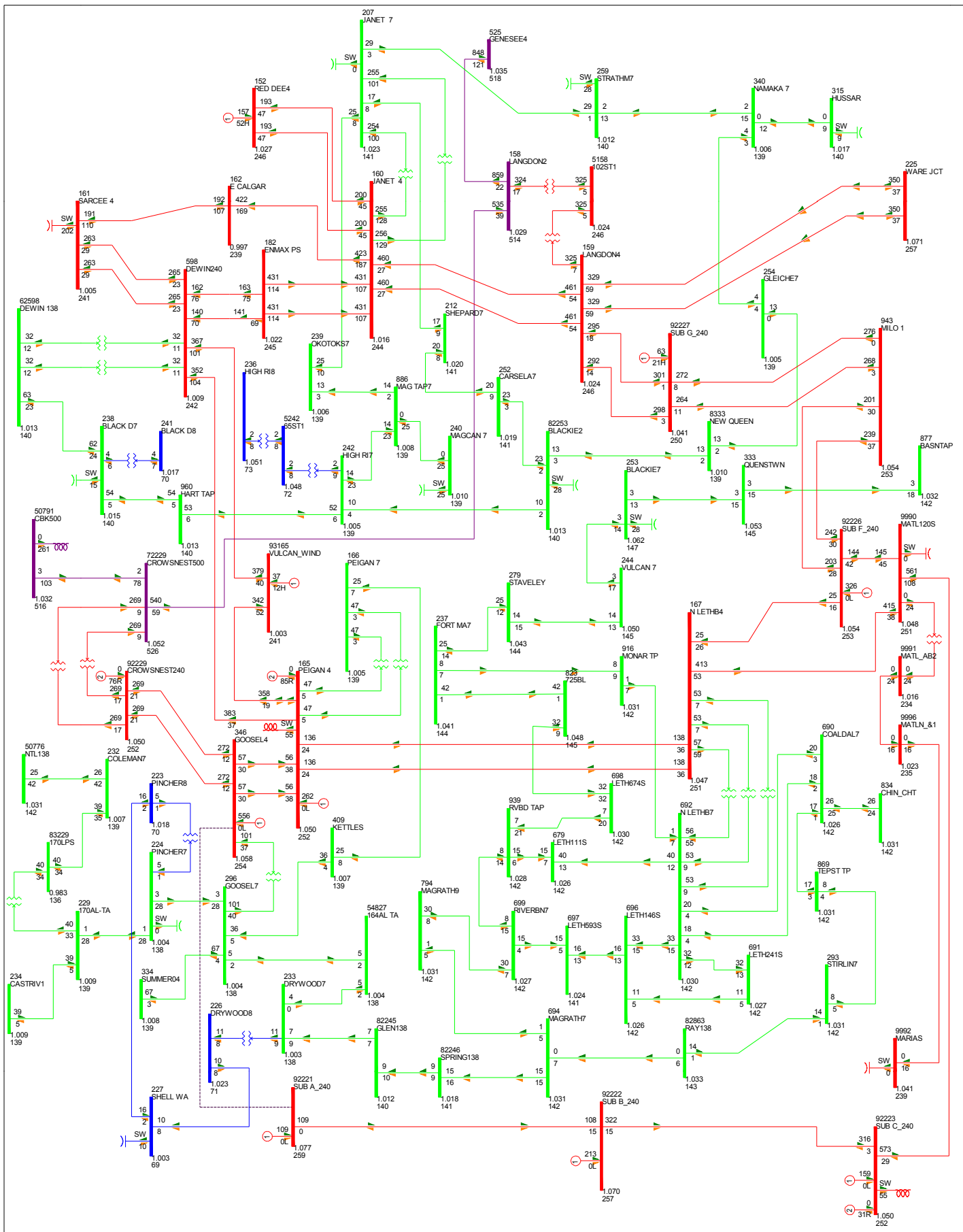


FIG 2017-1A-SP-16: GOOSELAKE TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000
 BC Export: -6 MW

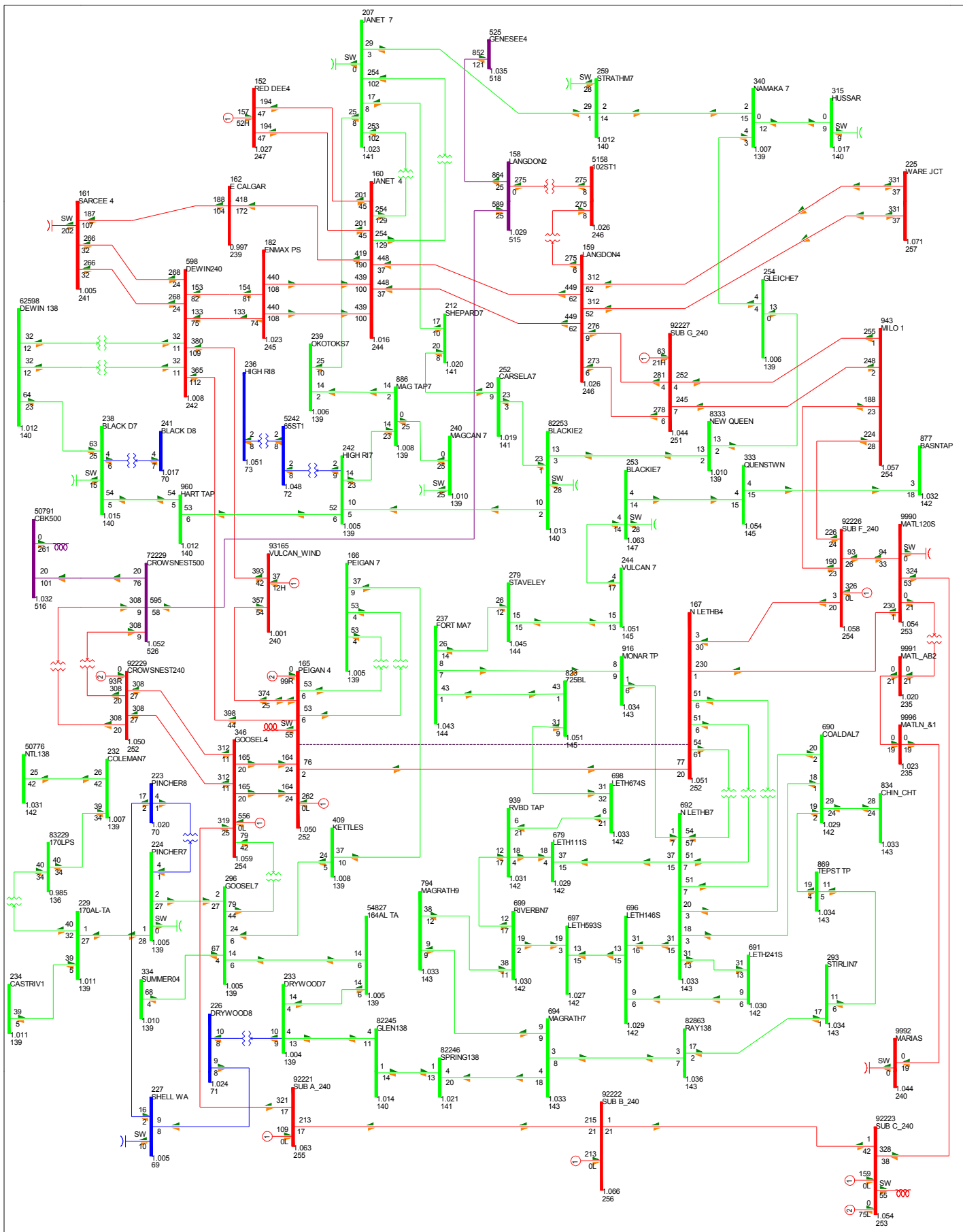


FIG 2017-1A-SP-18: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 >500.000
 BC Export: 15 MW

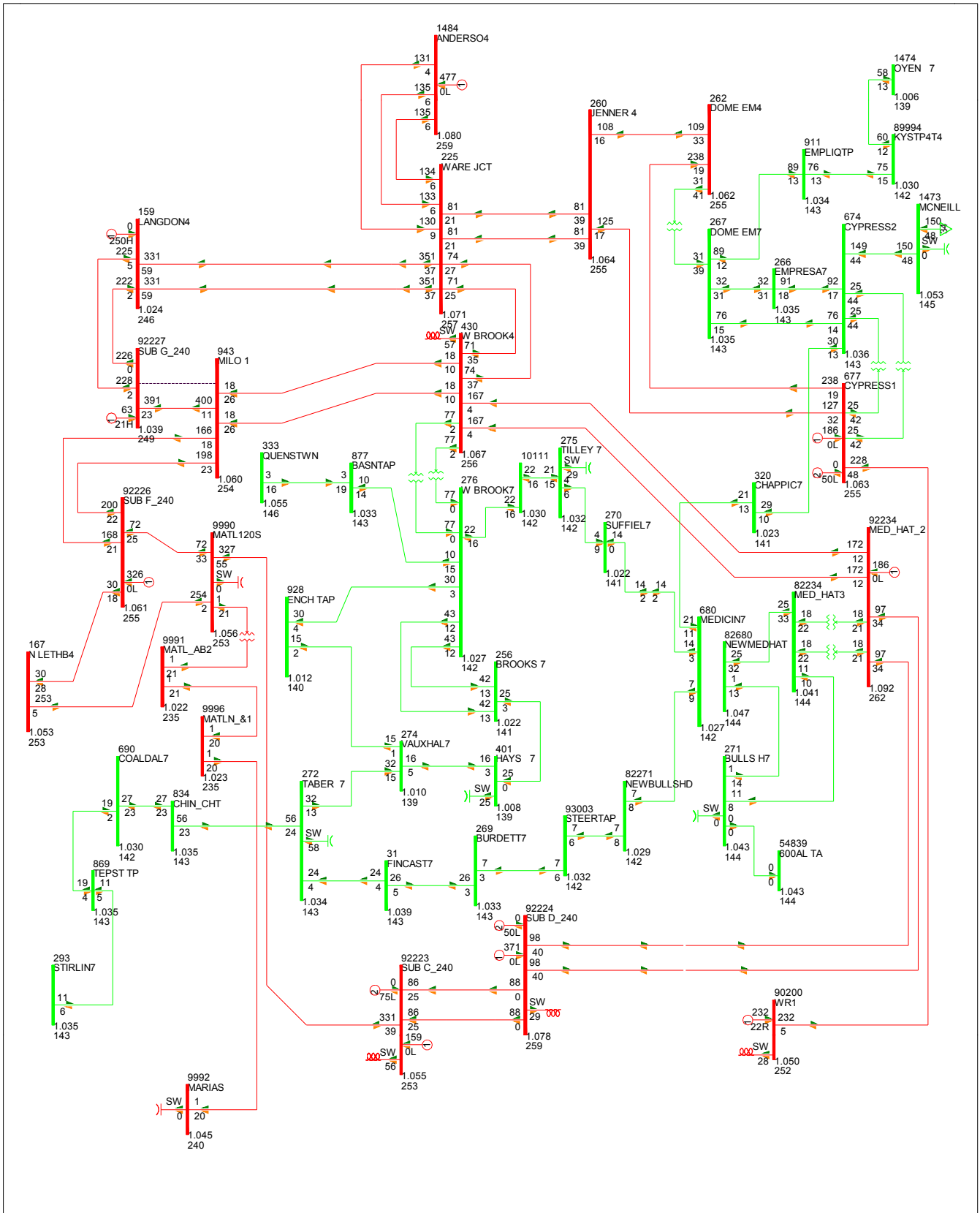


FIG 2017-1A-SP-21: MLO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 3 MW

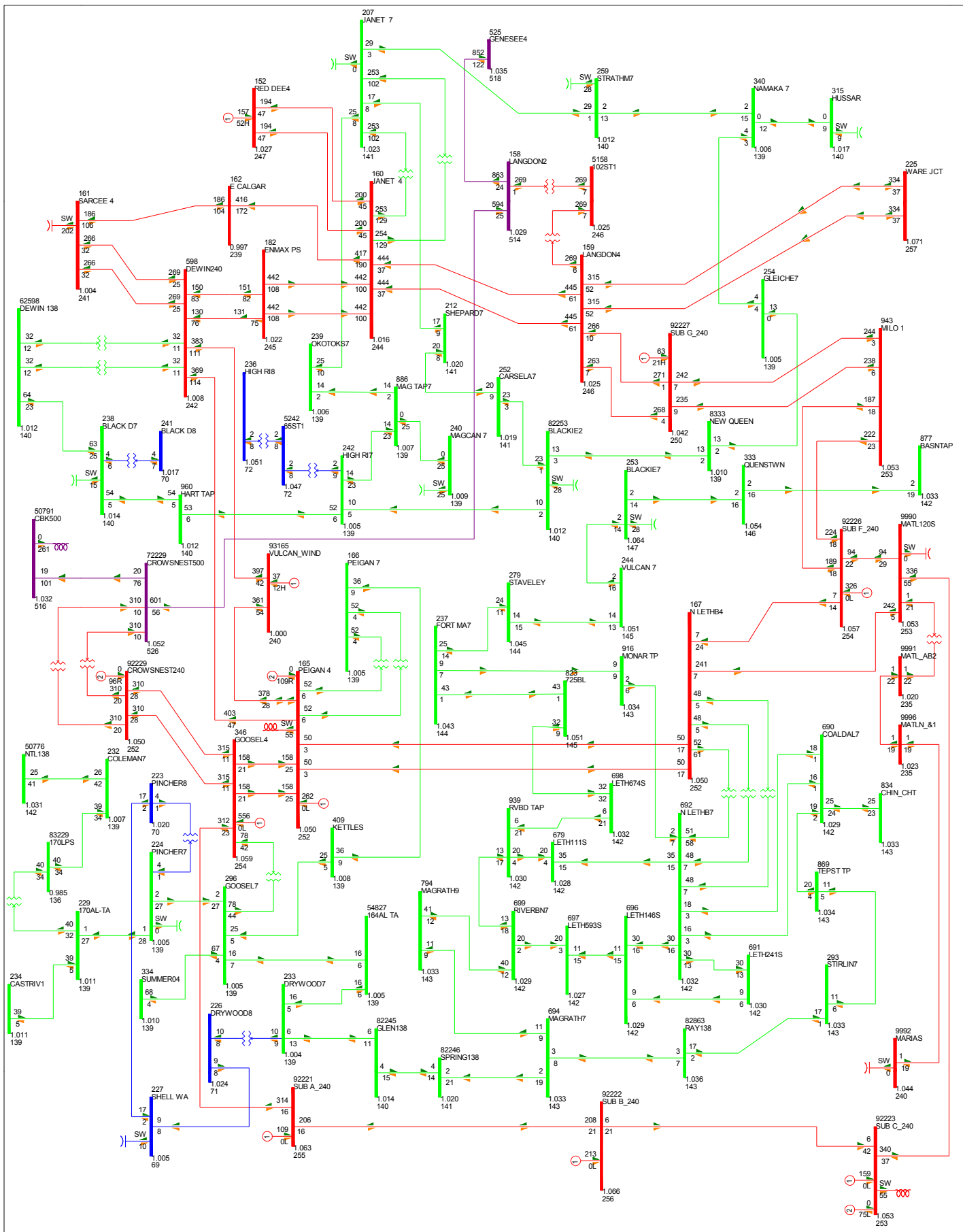


FIG 2017-1A-SP-22: MILO TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 14 MW

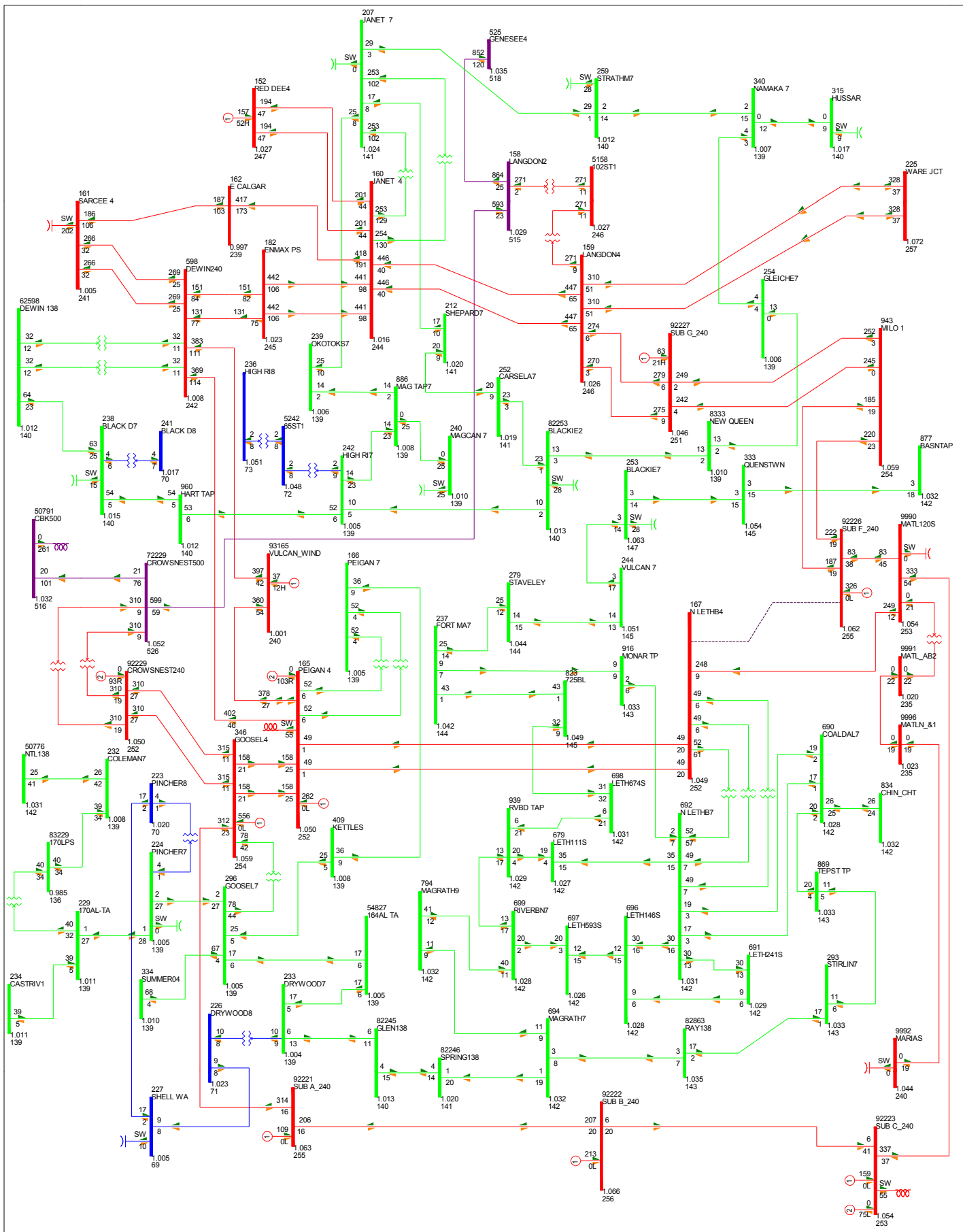


FIG 2017-1A-SP-24: N. LETHBRIDGE TO SUB F 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

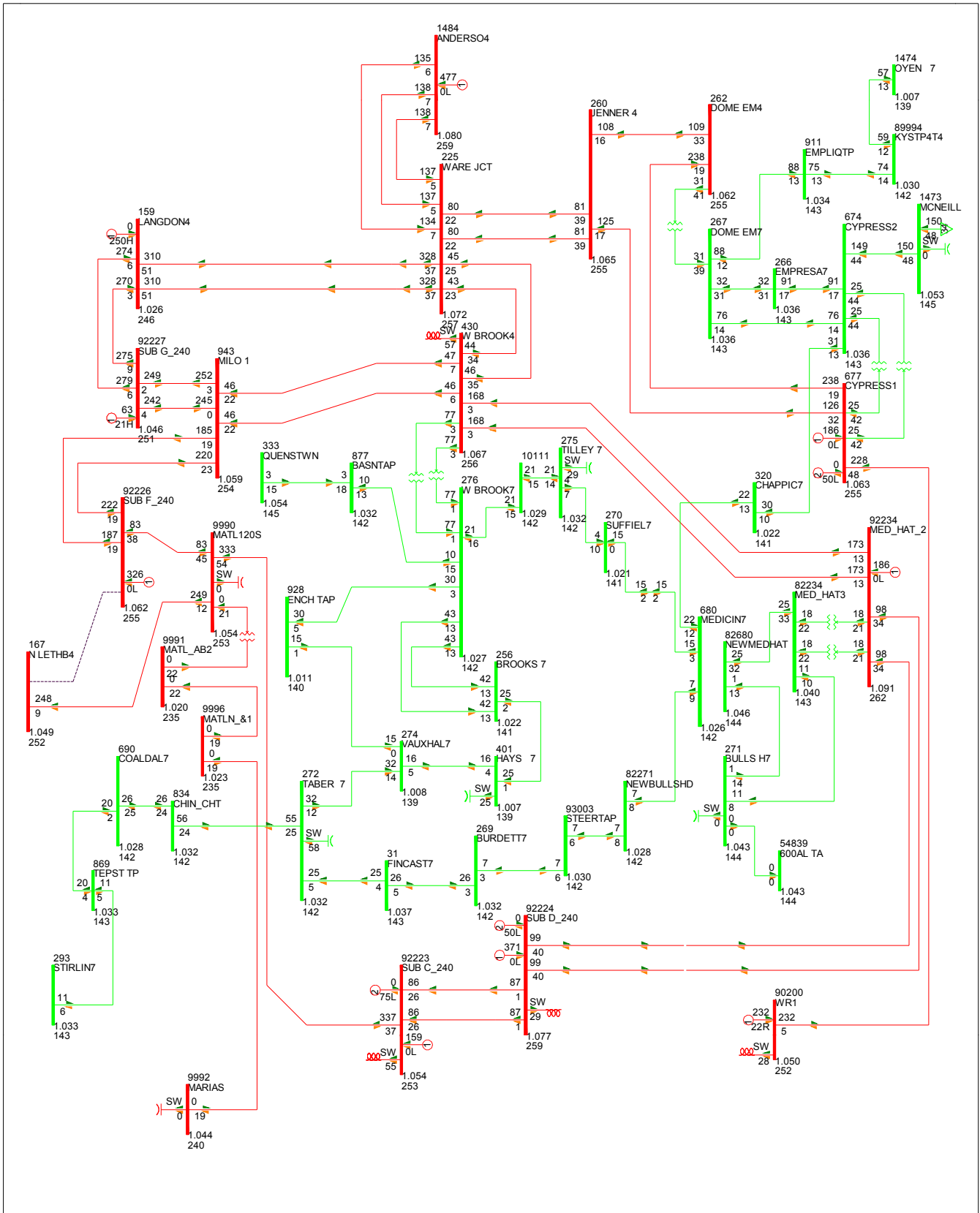


FIG 2017-1A-SP-25: N. LETHBRIDGE TO SUB F 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

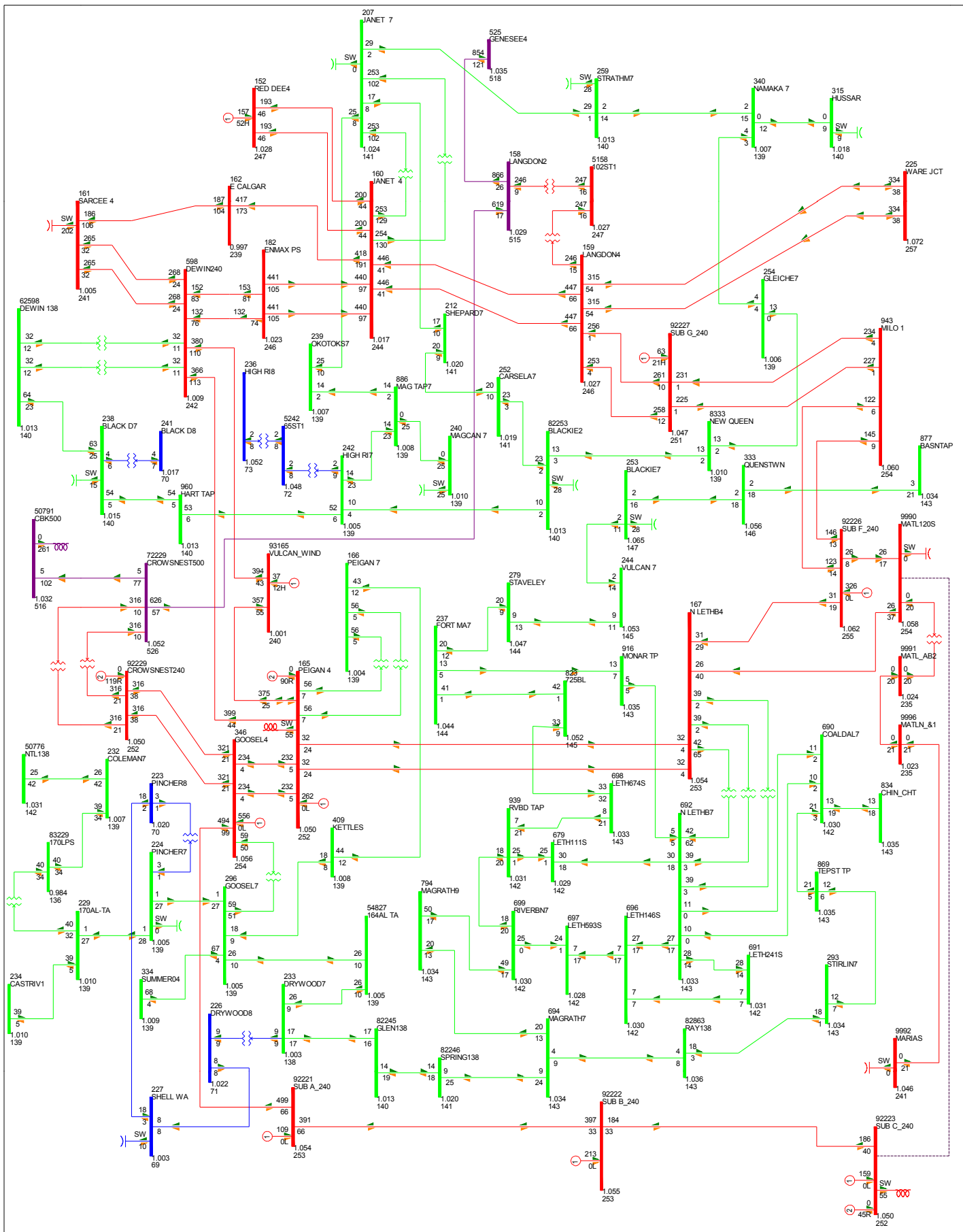


FIG 2017-1A-SP-26: MATL TO SUB C 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -1 MW

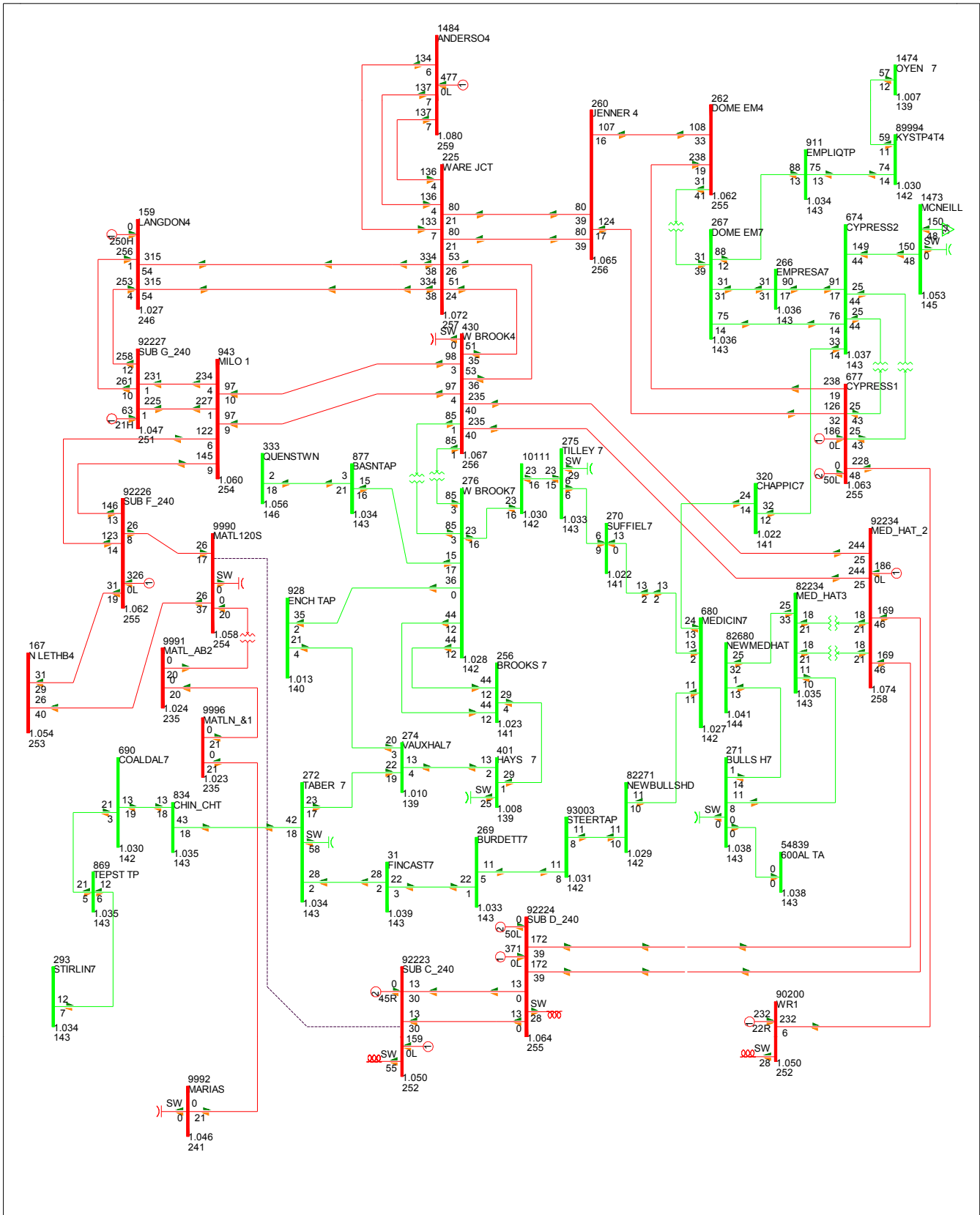


FIG 2017-1A-SP-27: MATL TO SUB C 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -1 MW

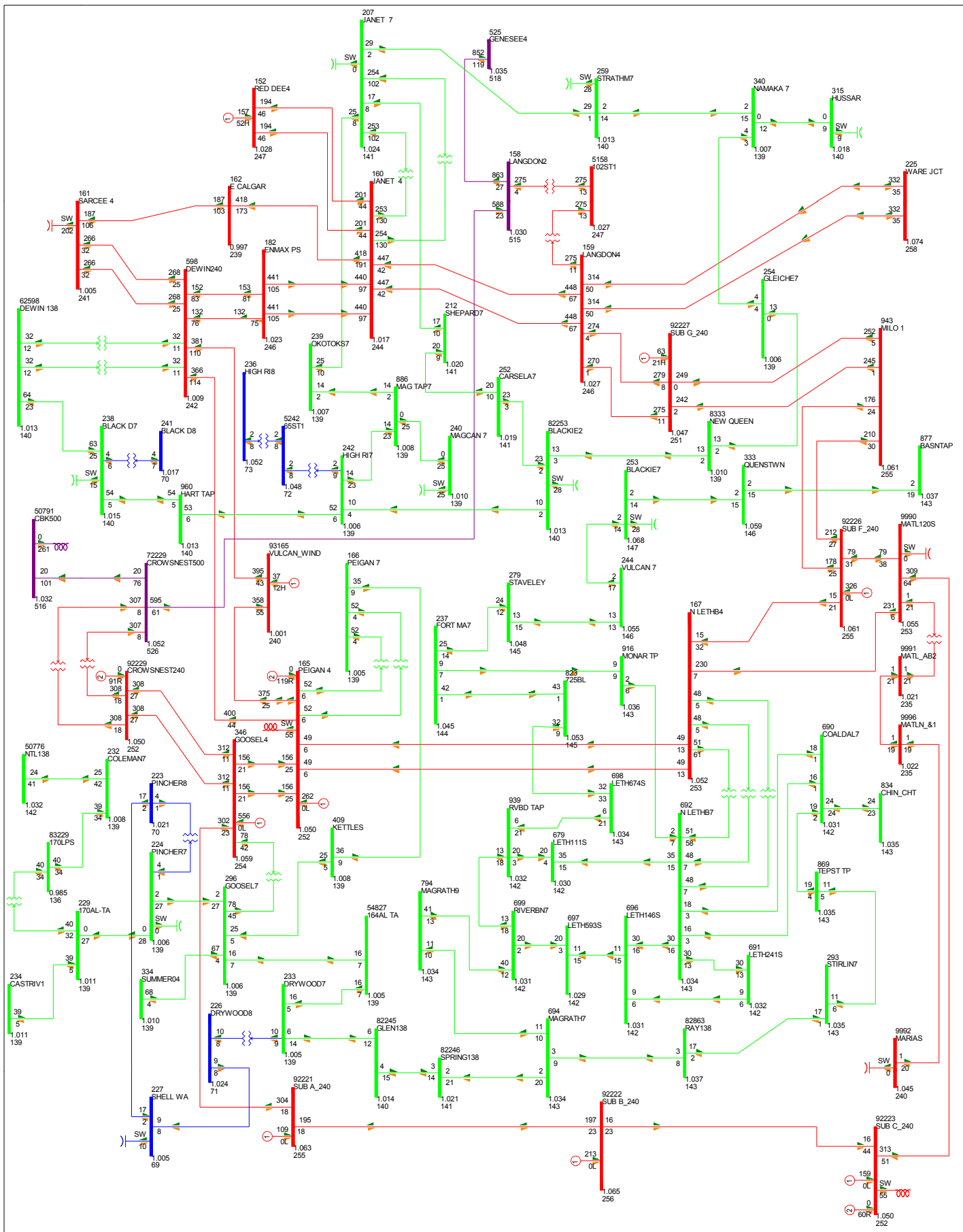


FIG 2017-1A-SP-28: SUB C TO SUB D 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

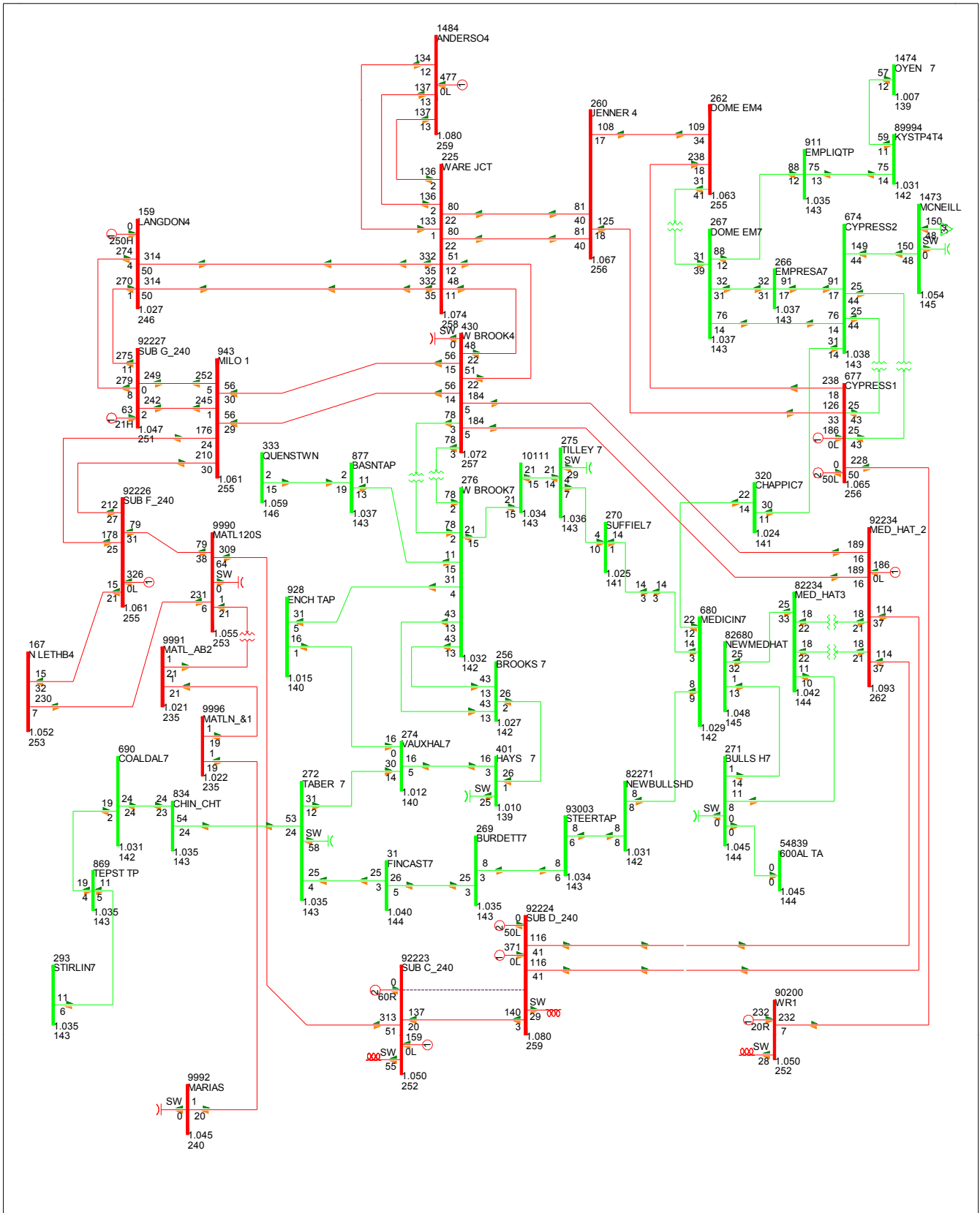


FIG 2017-1A-SP-29: SUB C TO SUB D 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

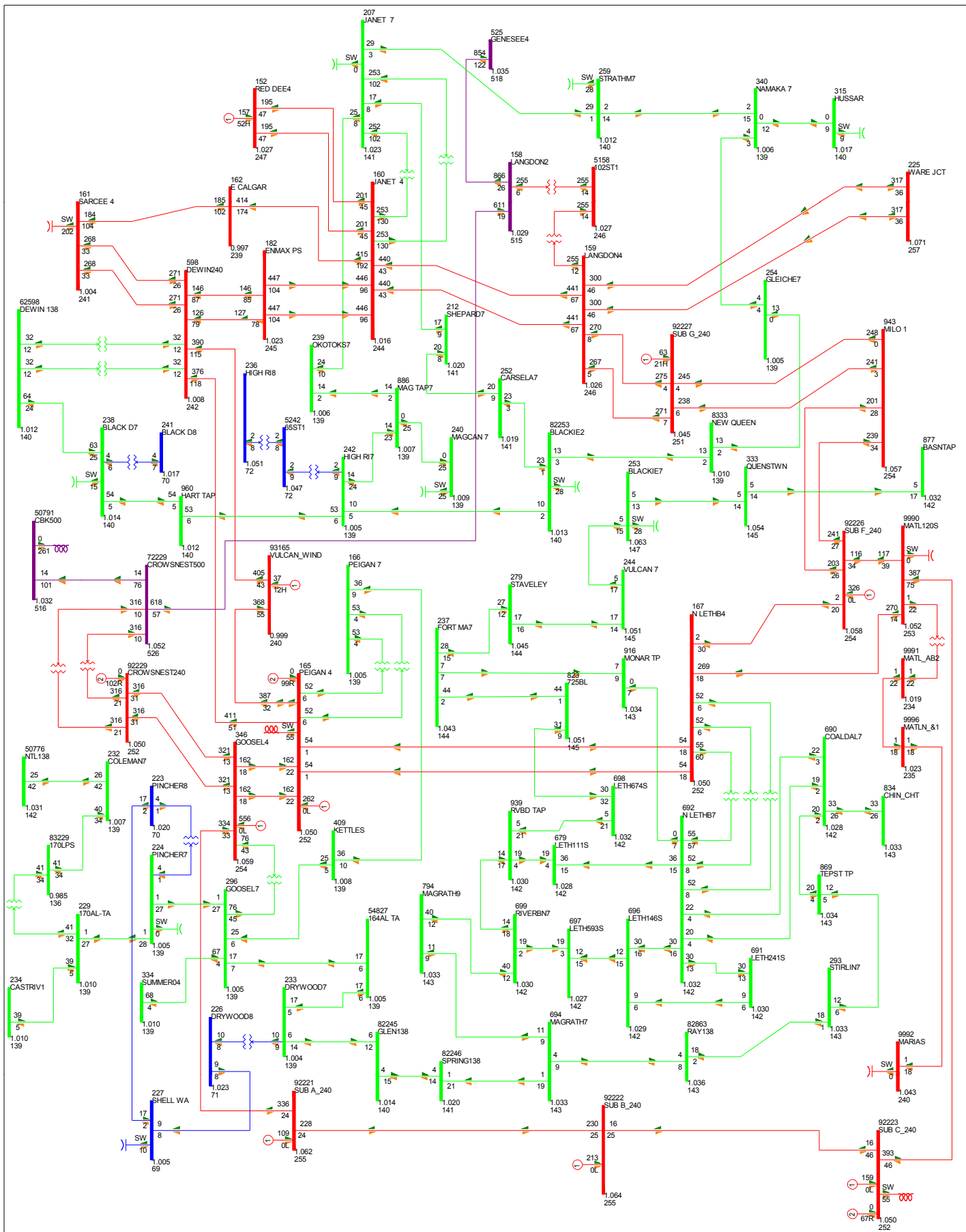


FIG 2017-1A-SP-30: WESTBROOKS TO MEDHAT2 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 > 500.000
 BC Export: 8 MW

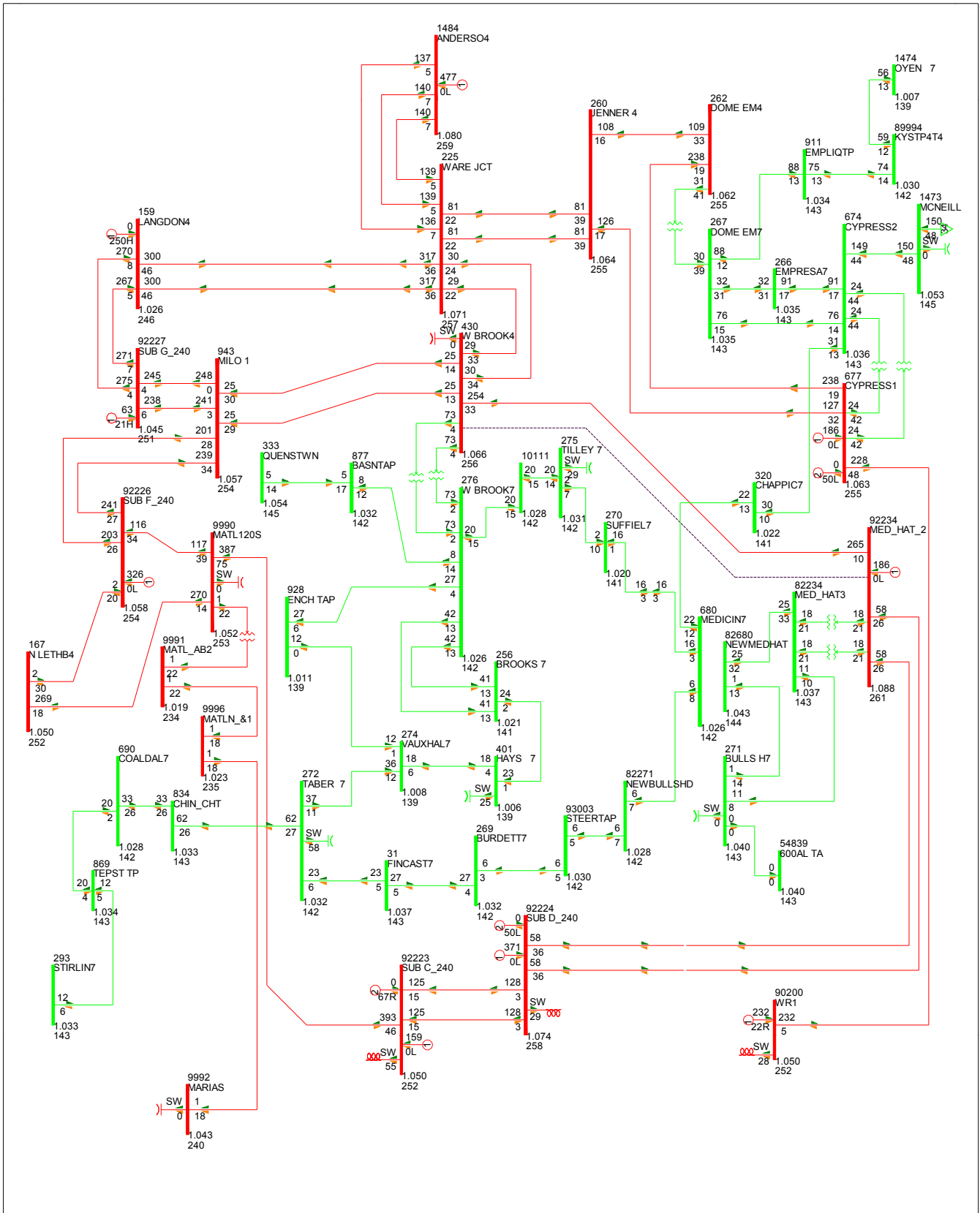


FIG 2017-1A-SP-31: WESTBROOKS TO MEDHAT2 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 8 MW

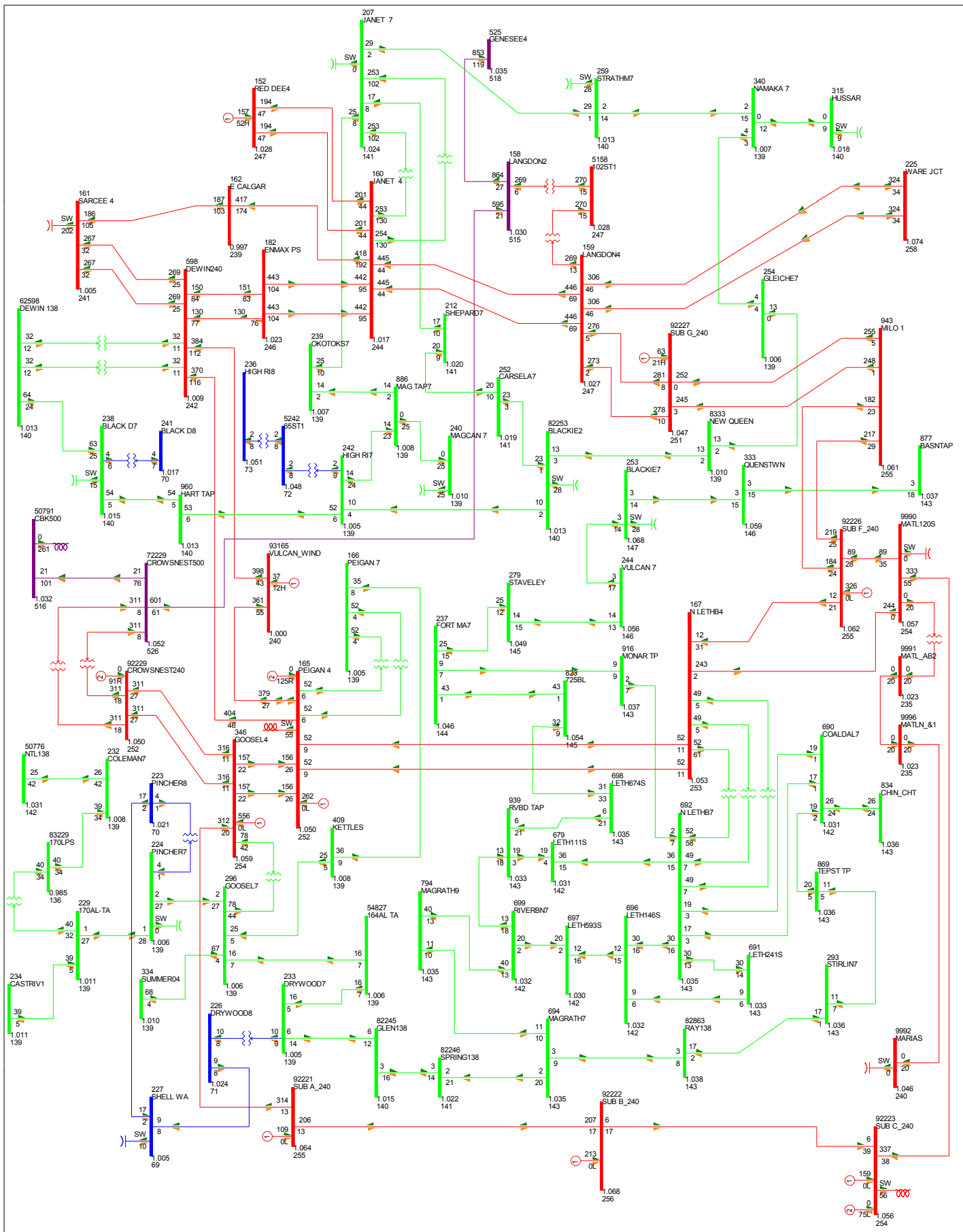


FIG 2017-1A-SP-32: WAREJUNC TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 16 MW

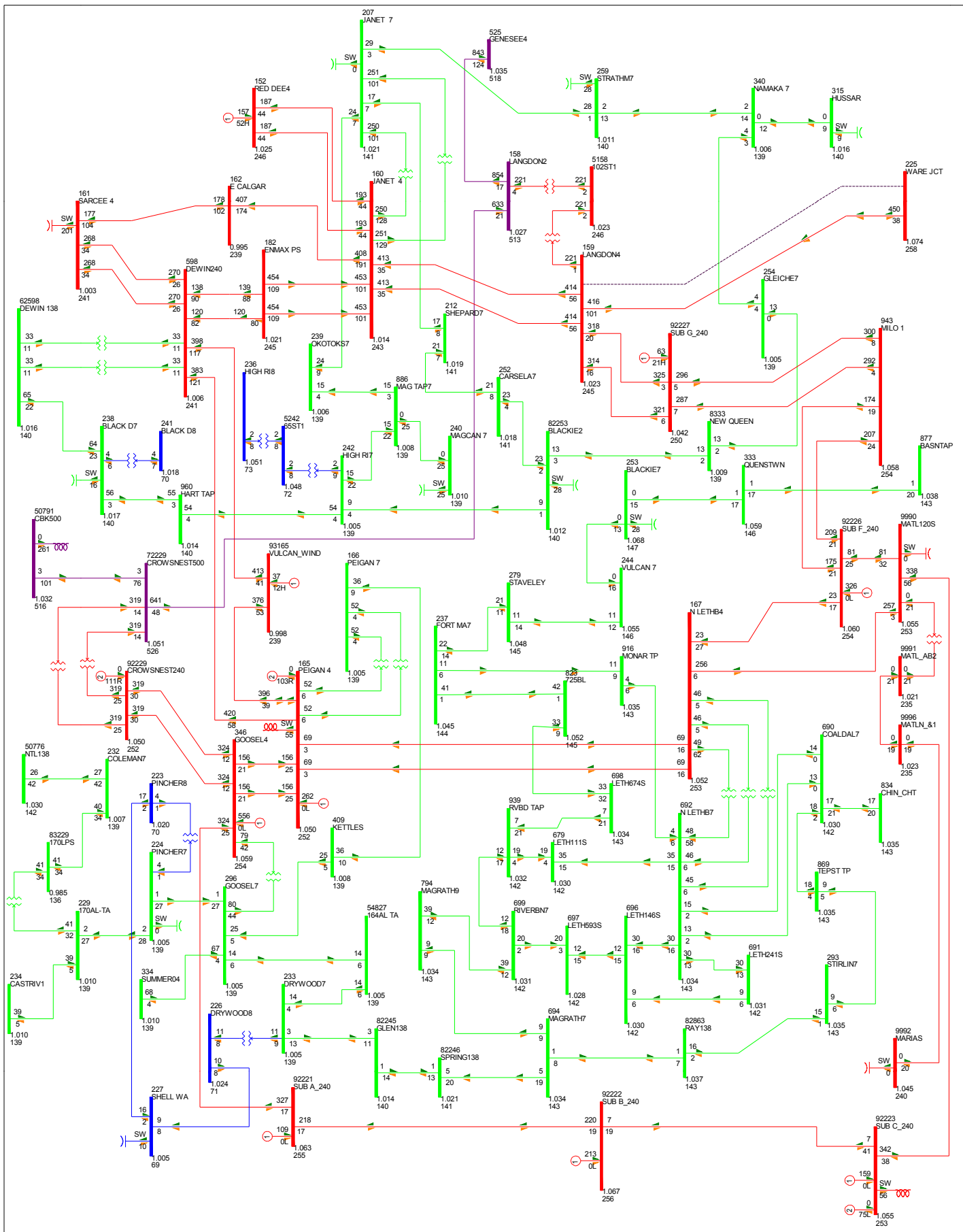


FIG 2017-1A-SP-34: WAREJUNC TO LANGDON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -9 MW

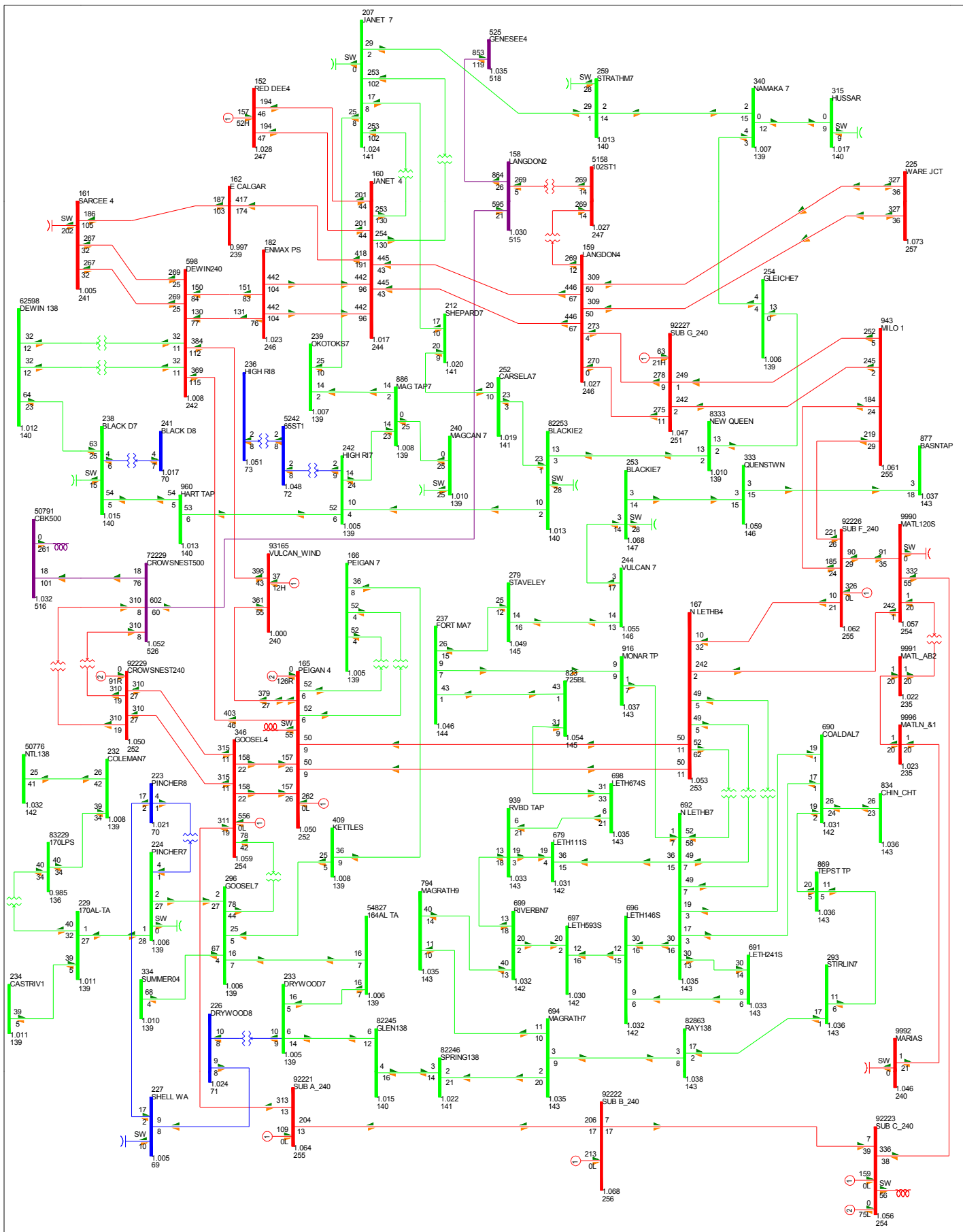


FIG 2017-1A-SP-36: DOME EMPRESS TO CYPRESS 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 13 MW

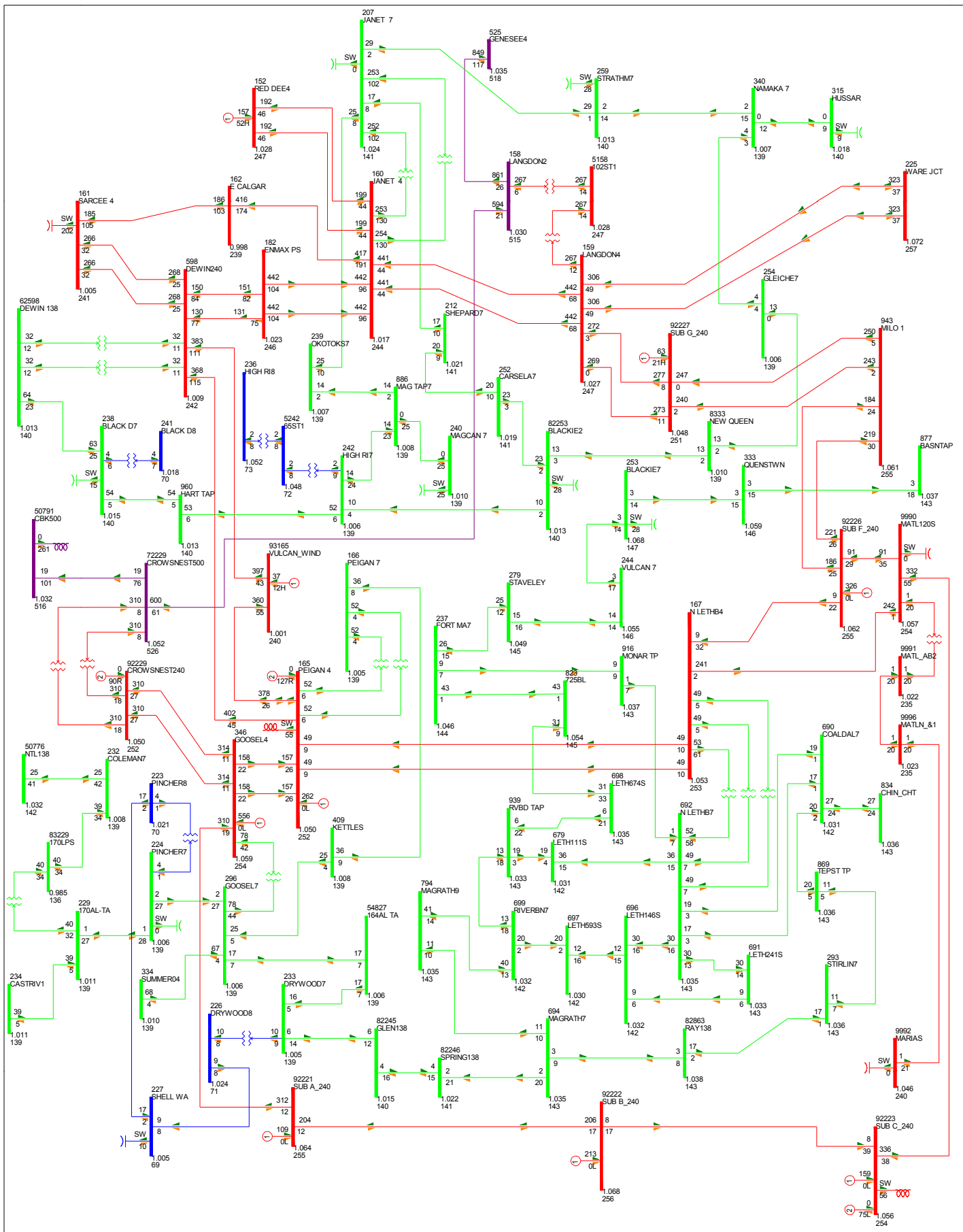


FIG 2017-1A-SP-38: WAREJUNC TO ANDERSON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 14 MW

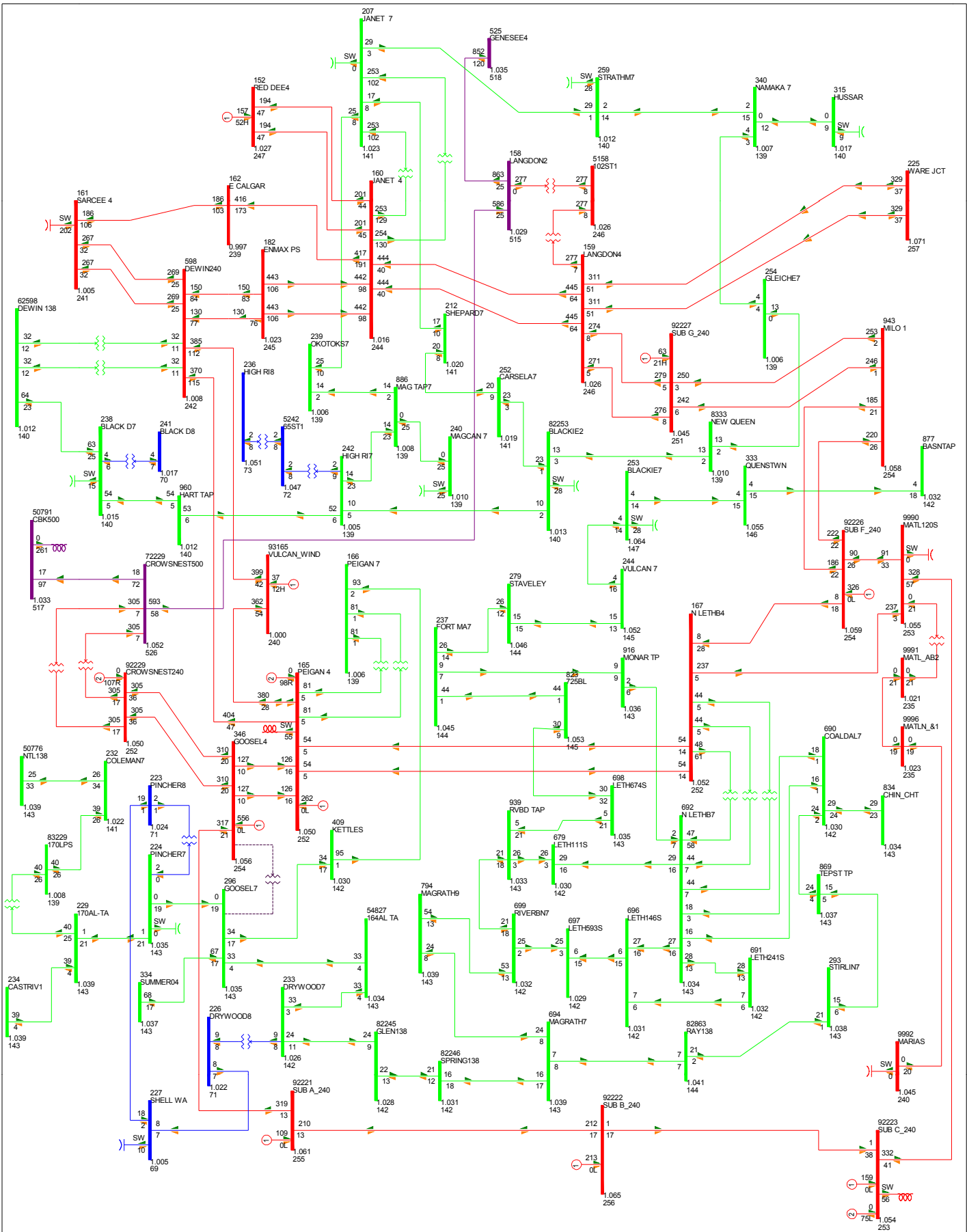


FIG 2017-1A-SP-40: GOOSE LAKE 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 > 500.000
 BC Export: 12 MW

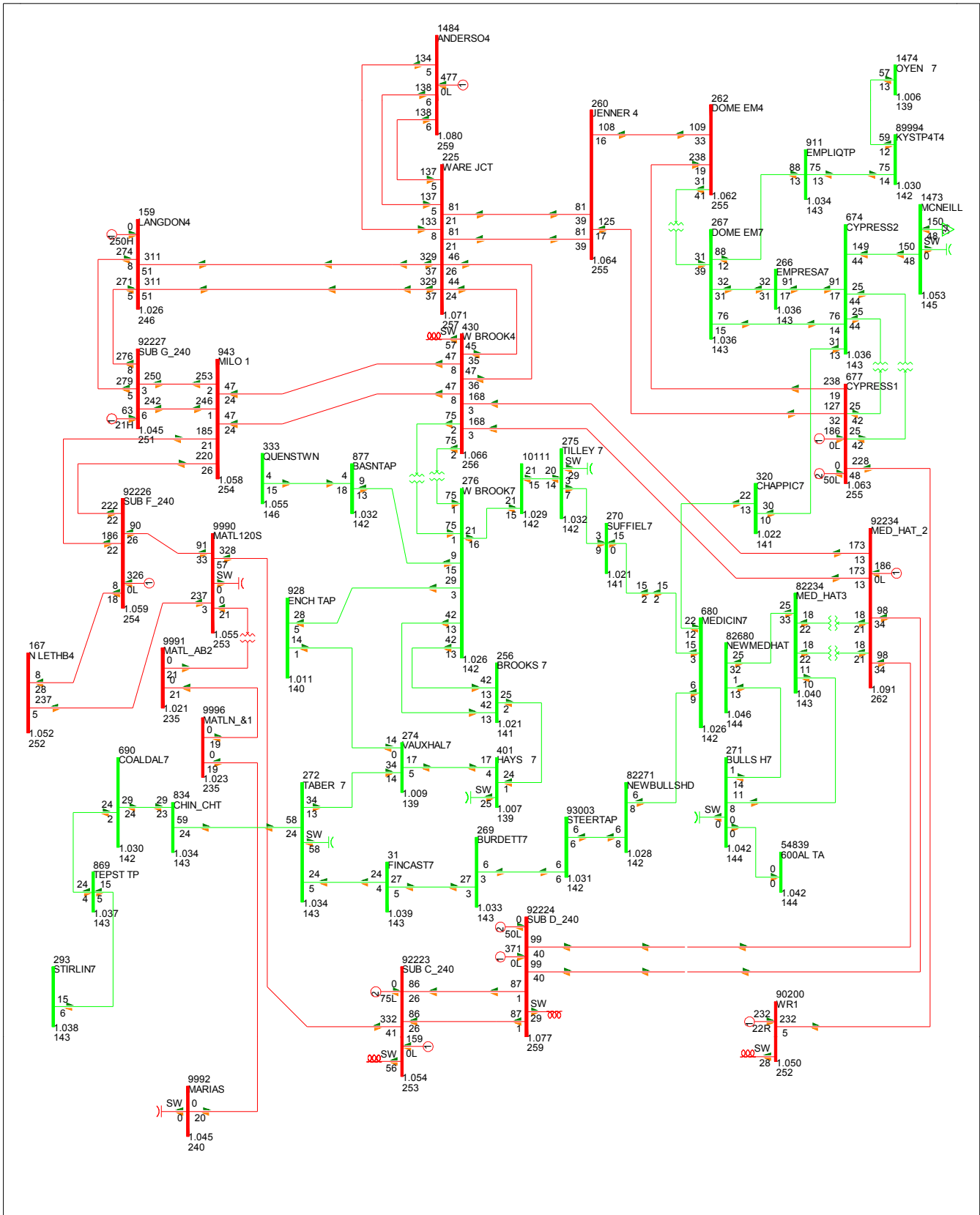


FIG 2017-1A-SP-41: GOOSE LAKE 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 12 MW

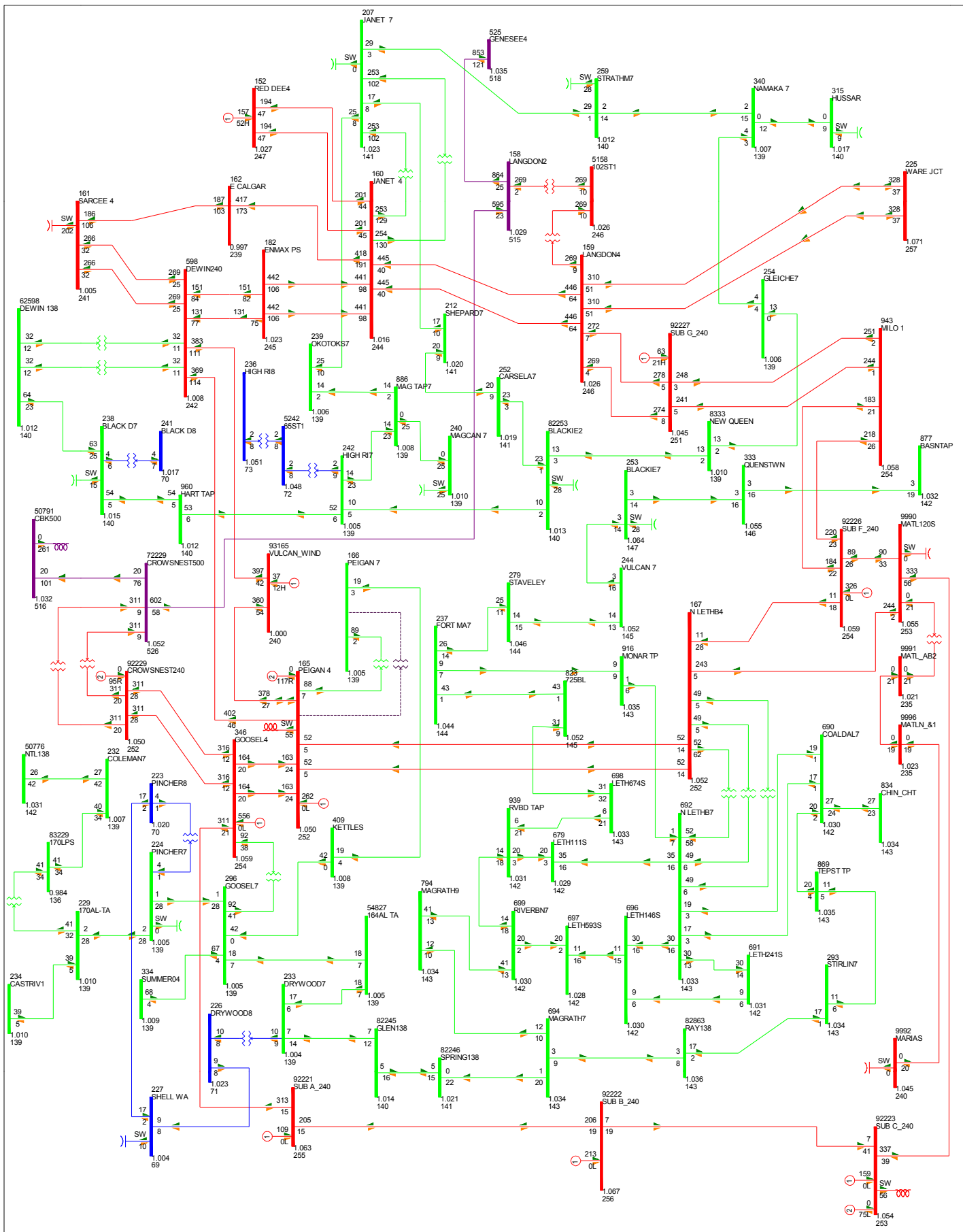


FIG 2017-1A-SP-42: PEIGAN 240/138 KV XMR

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

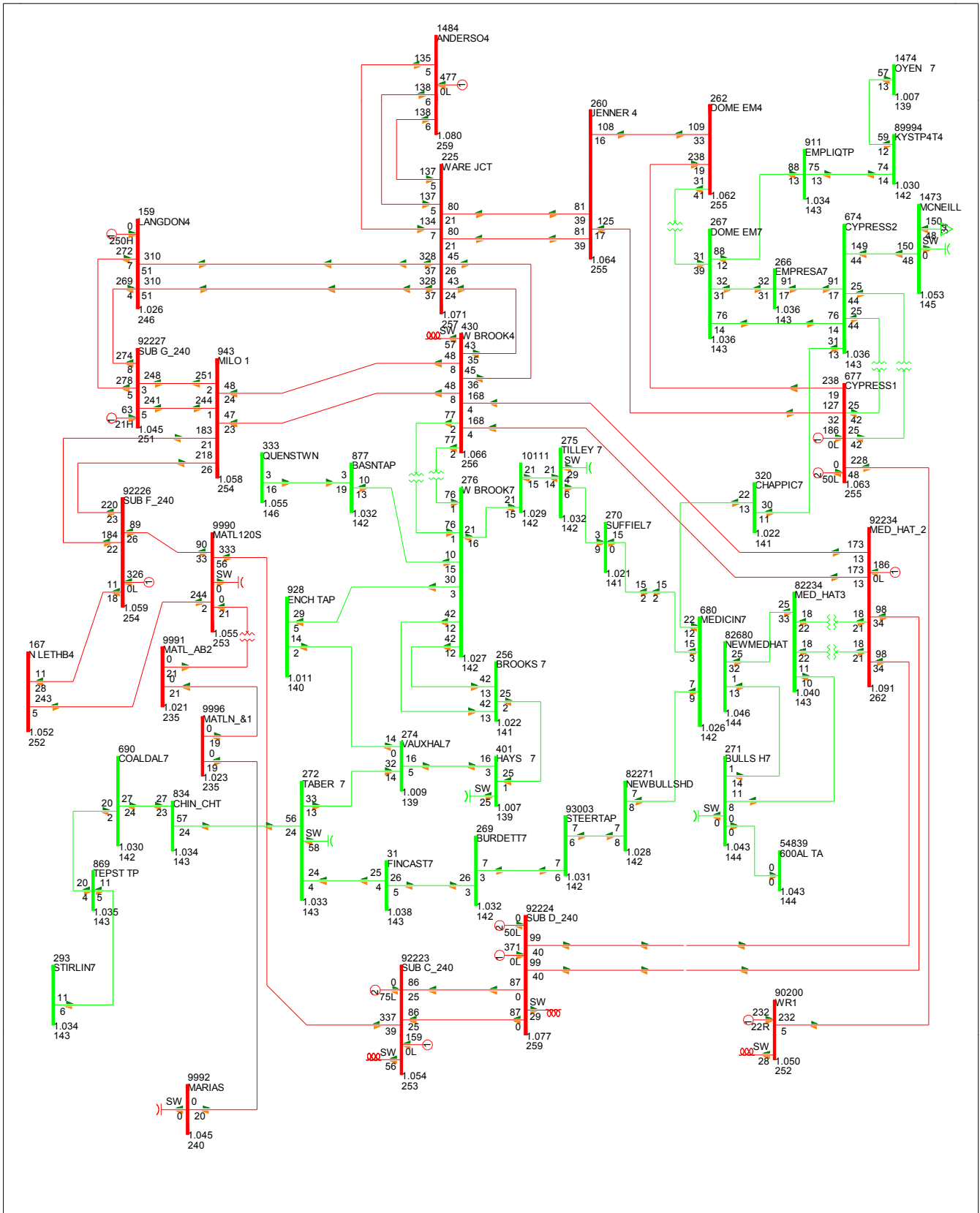


FIG 2017-1A-SP-43: PEIGAN 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

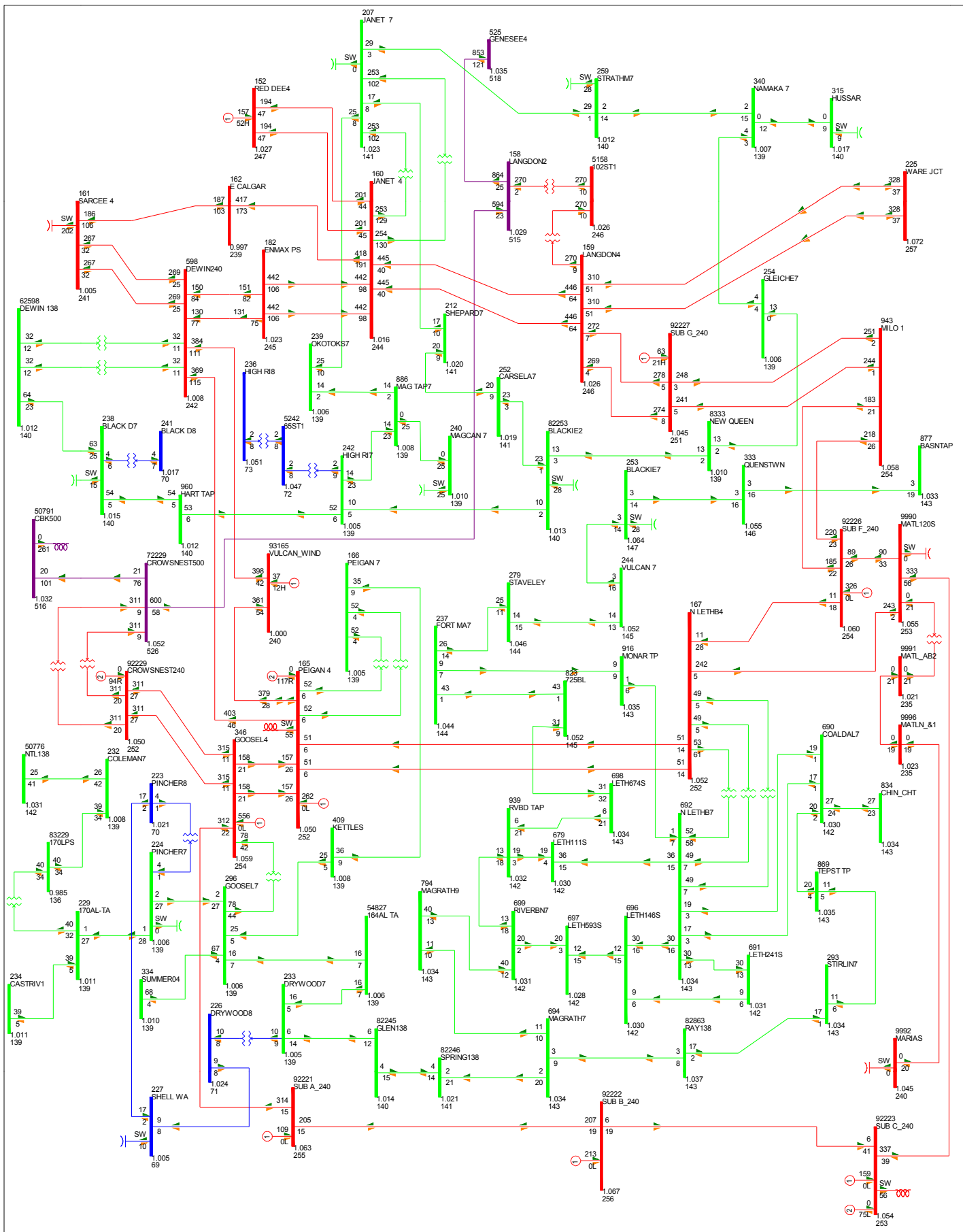


FIG 2017-1A-SP-44: DOME EMPRESS 240/138 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

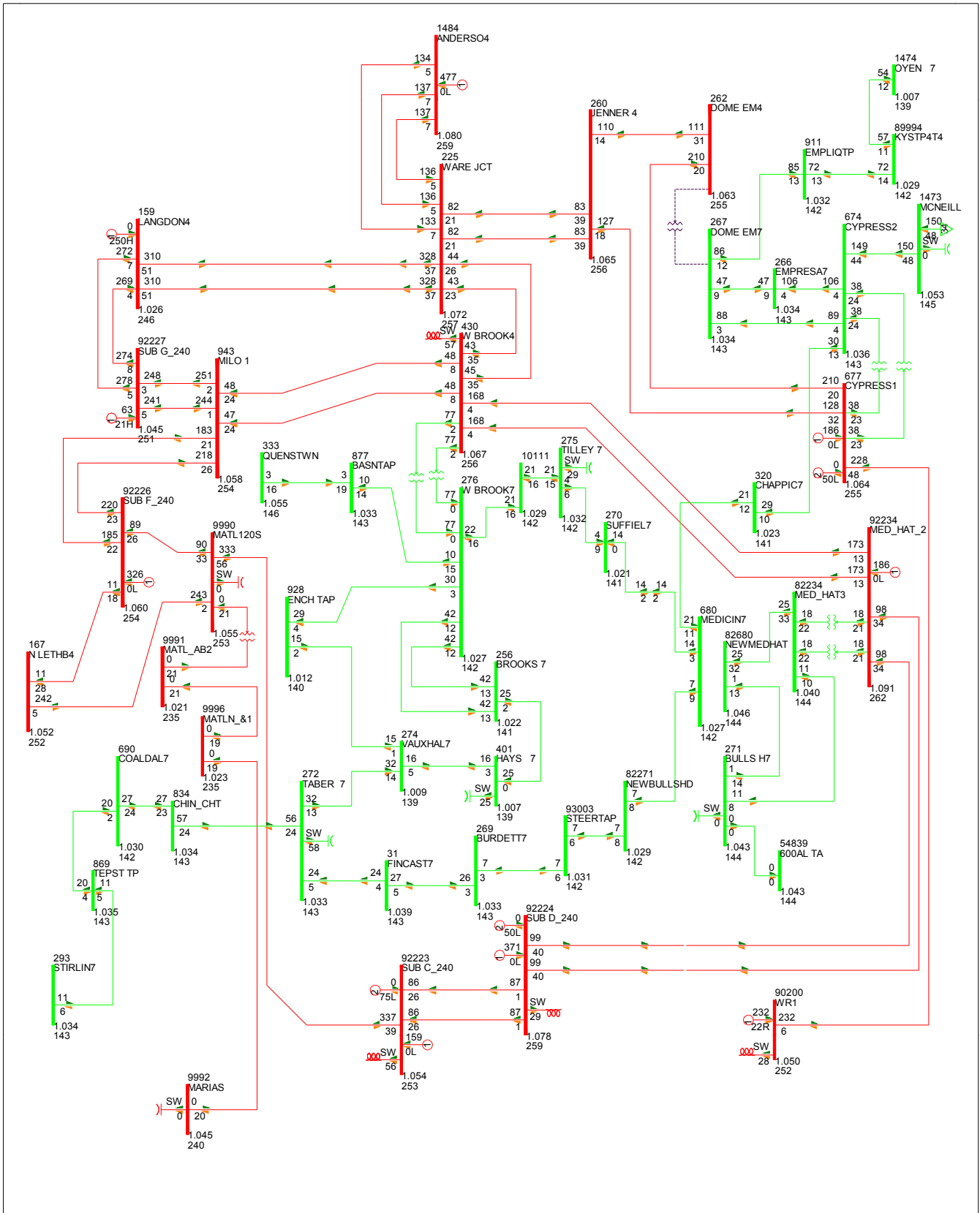


FIG 2017-1A-SP-45: DOME EMPRESS 240/138 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

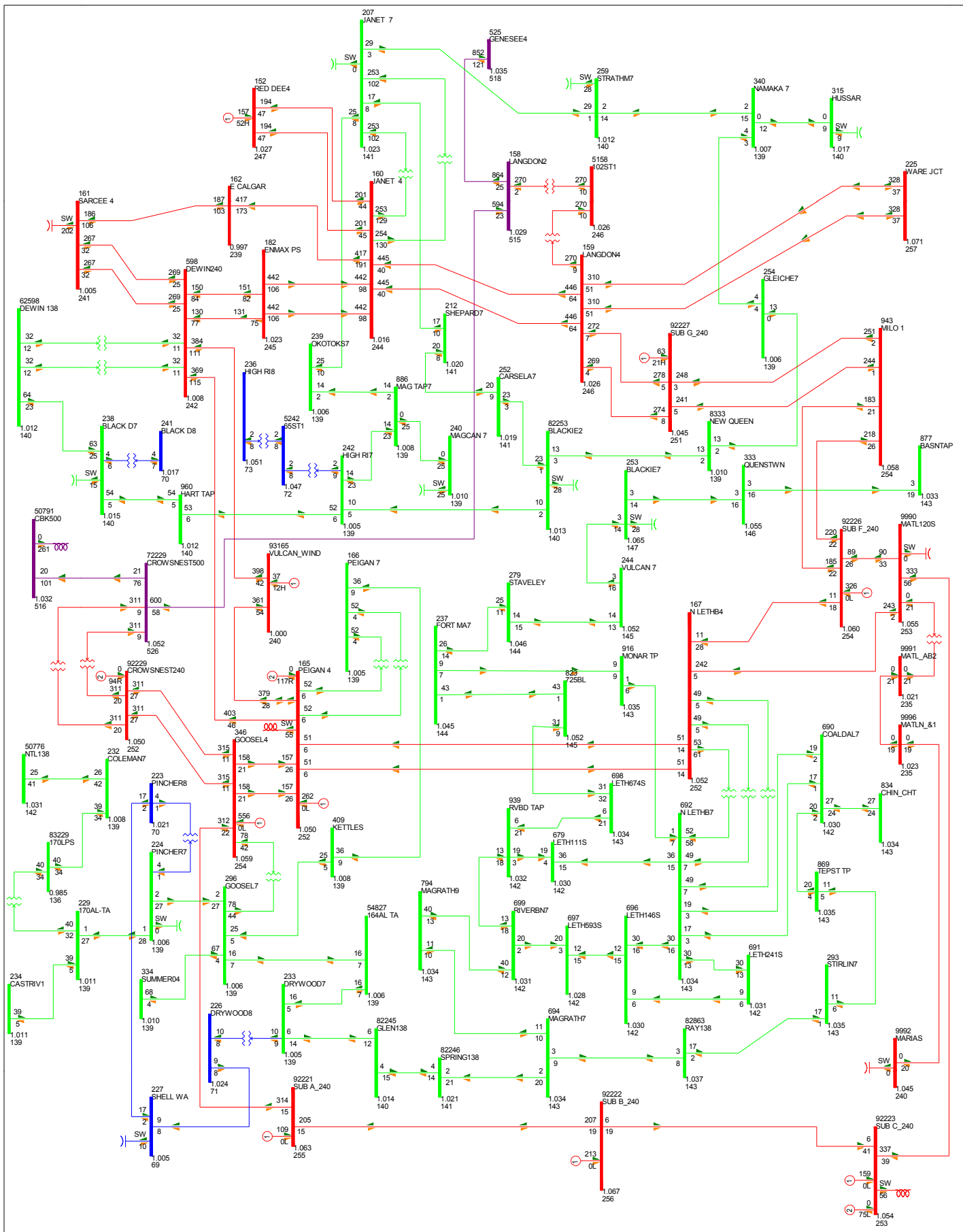


FIG 2017-1A-SP-46: CYPRESS 240/138 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 15 MW

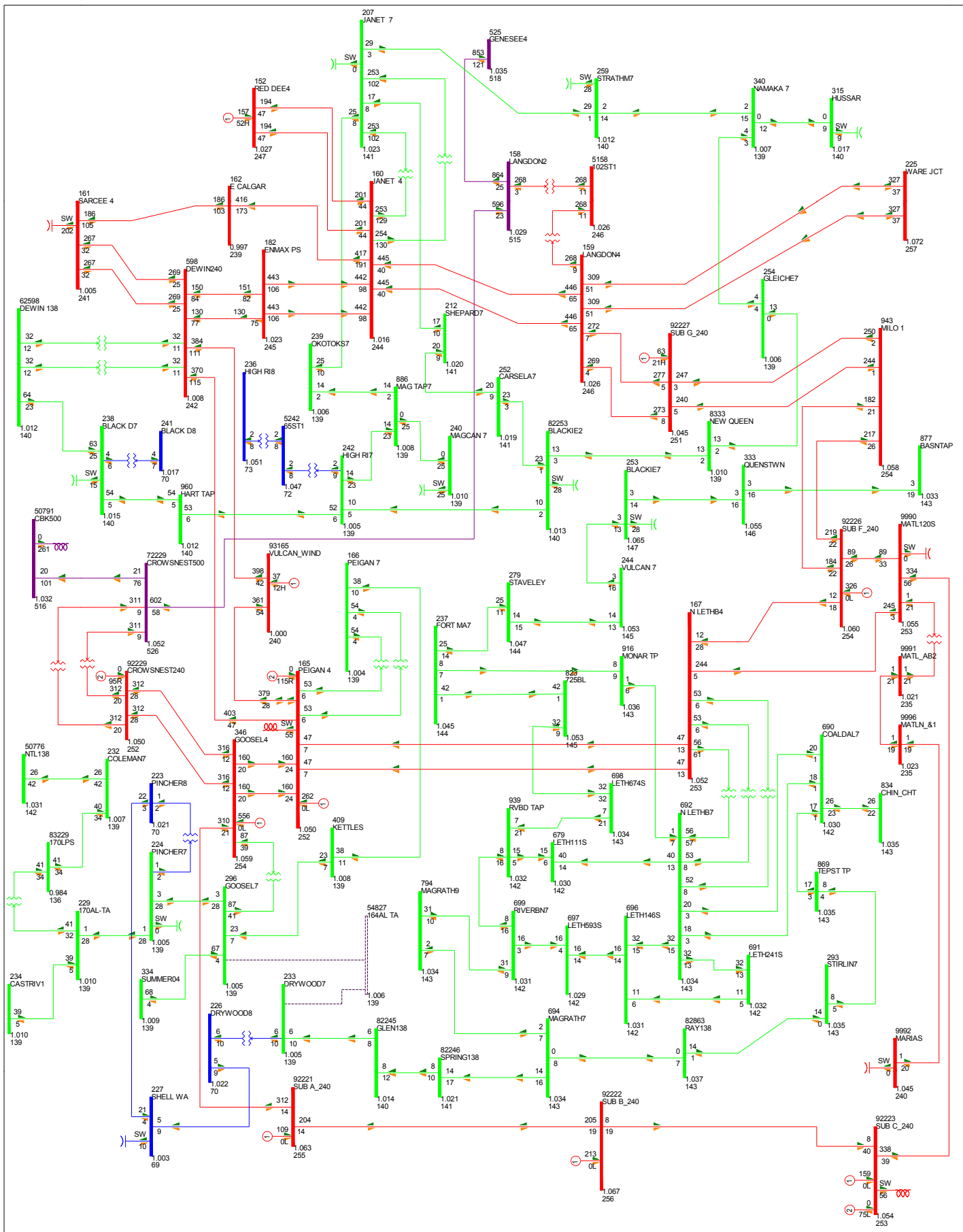


FIG 2017-1A-SP-48: GOOSELAKE TO DRYWOOD 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 16 MW

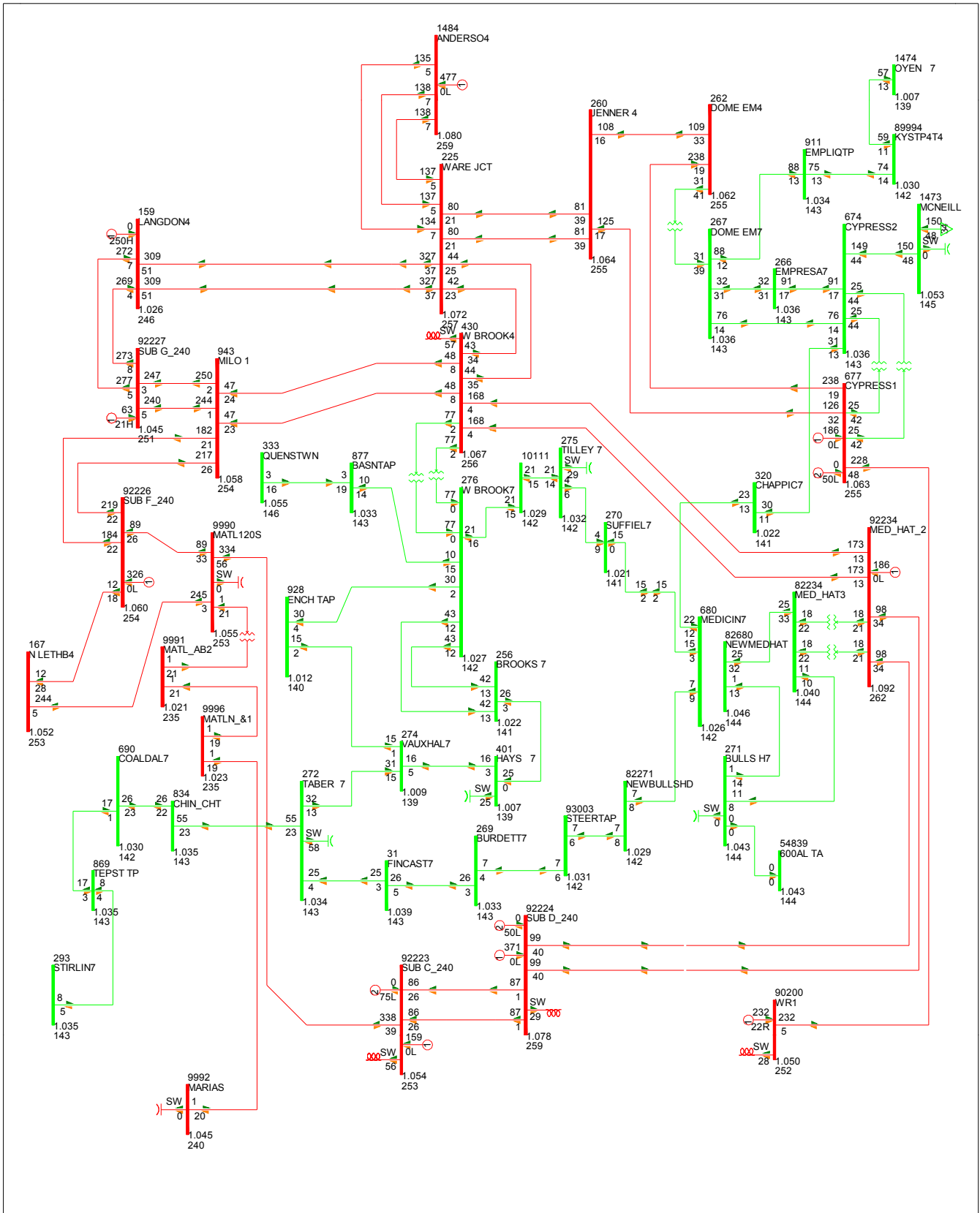


FIG 2017-1A-SP-49: GOOSELAKE TO DRYWOOD 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 16 MW

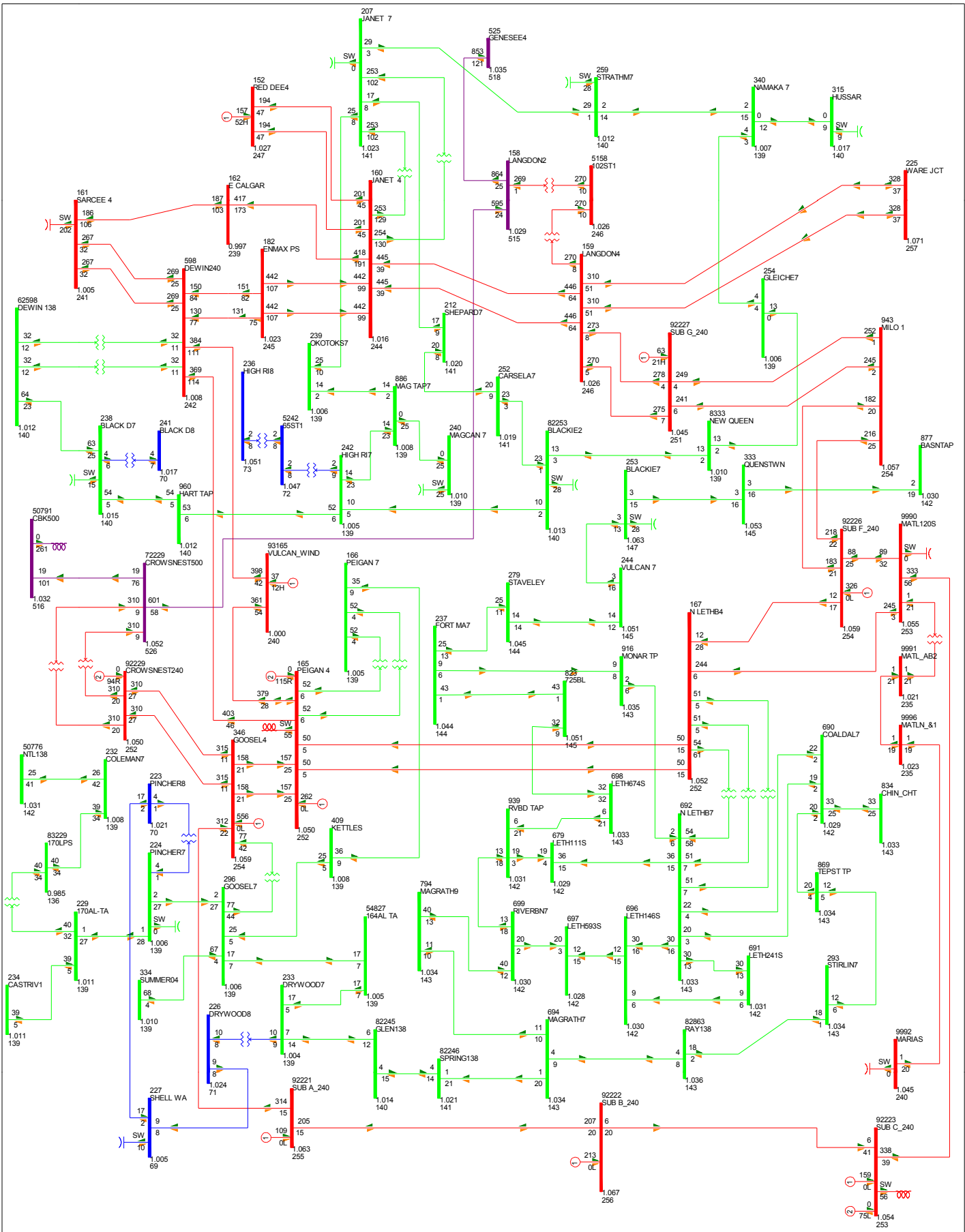


FIG 2017-1A-SP-50: WESTBROOKS TO TILLEY 138 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 > 500.000

BC Export: 14 MW

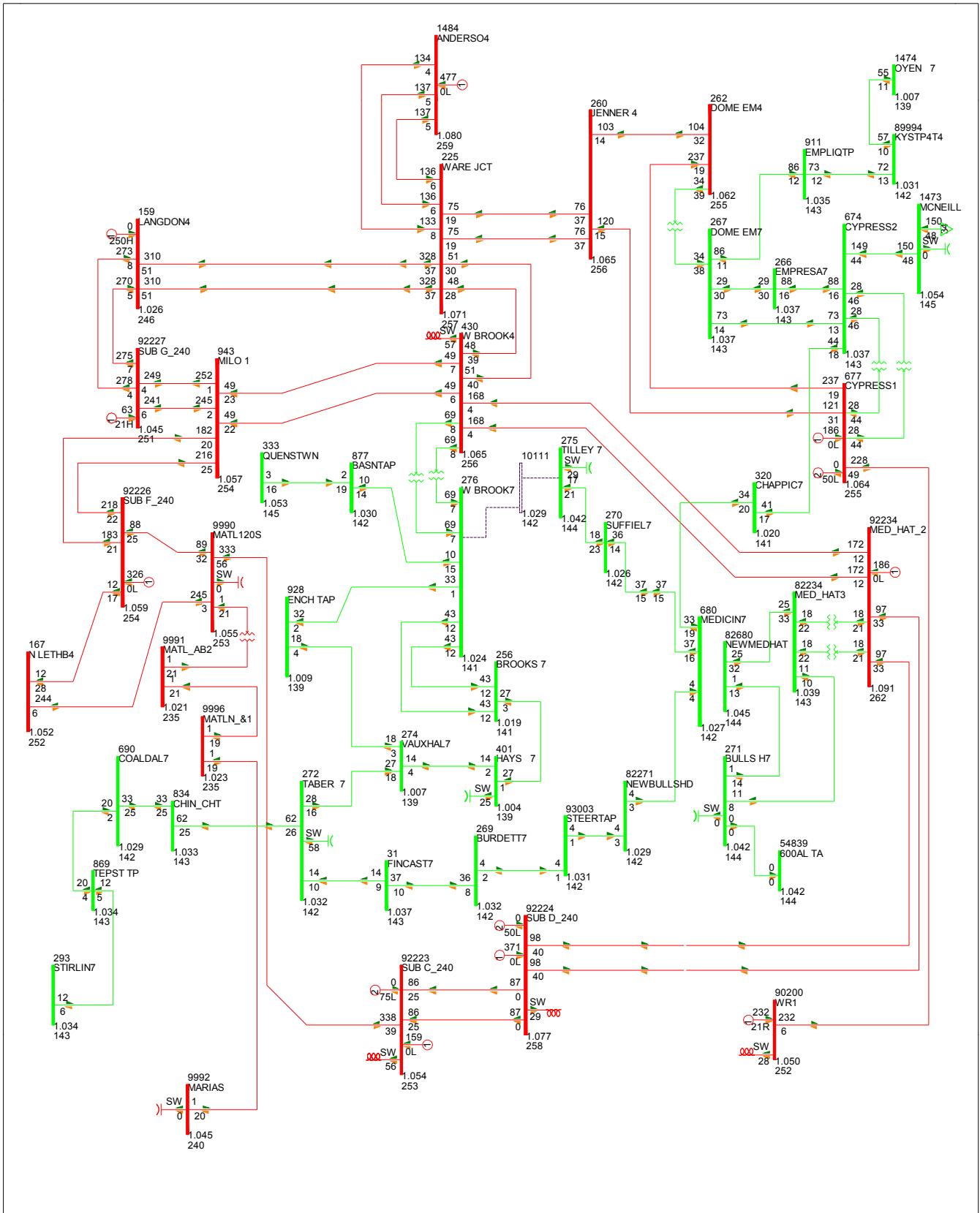


FIG 2017-1A-SP-51: WESTBROOKS TO TILLEY 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 14 MW

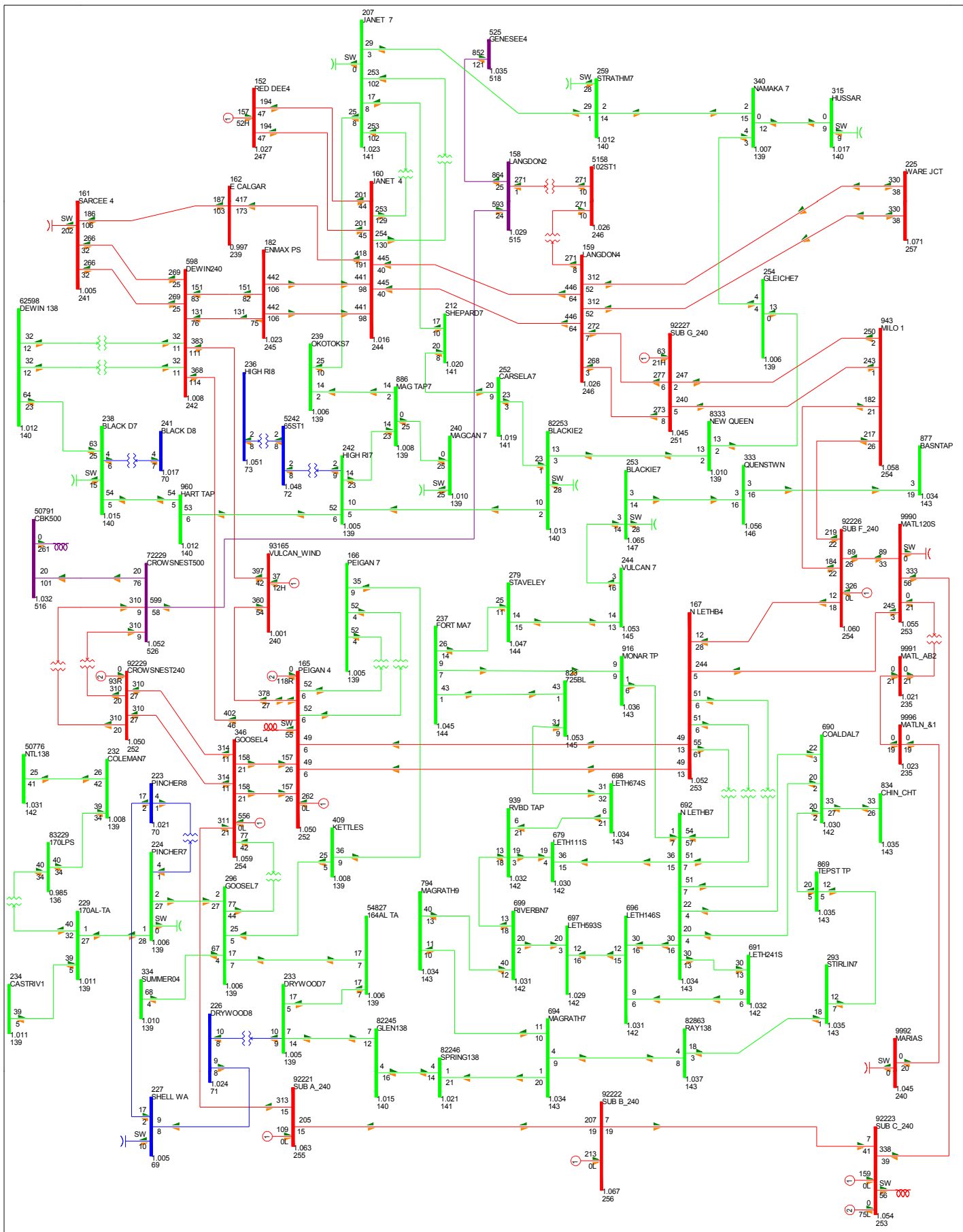


FIG 2017-1A-SP-52: MEDHAT TO CHAPPICE LAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

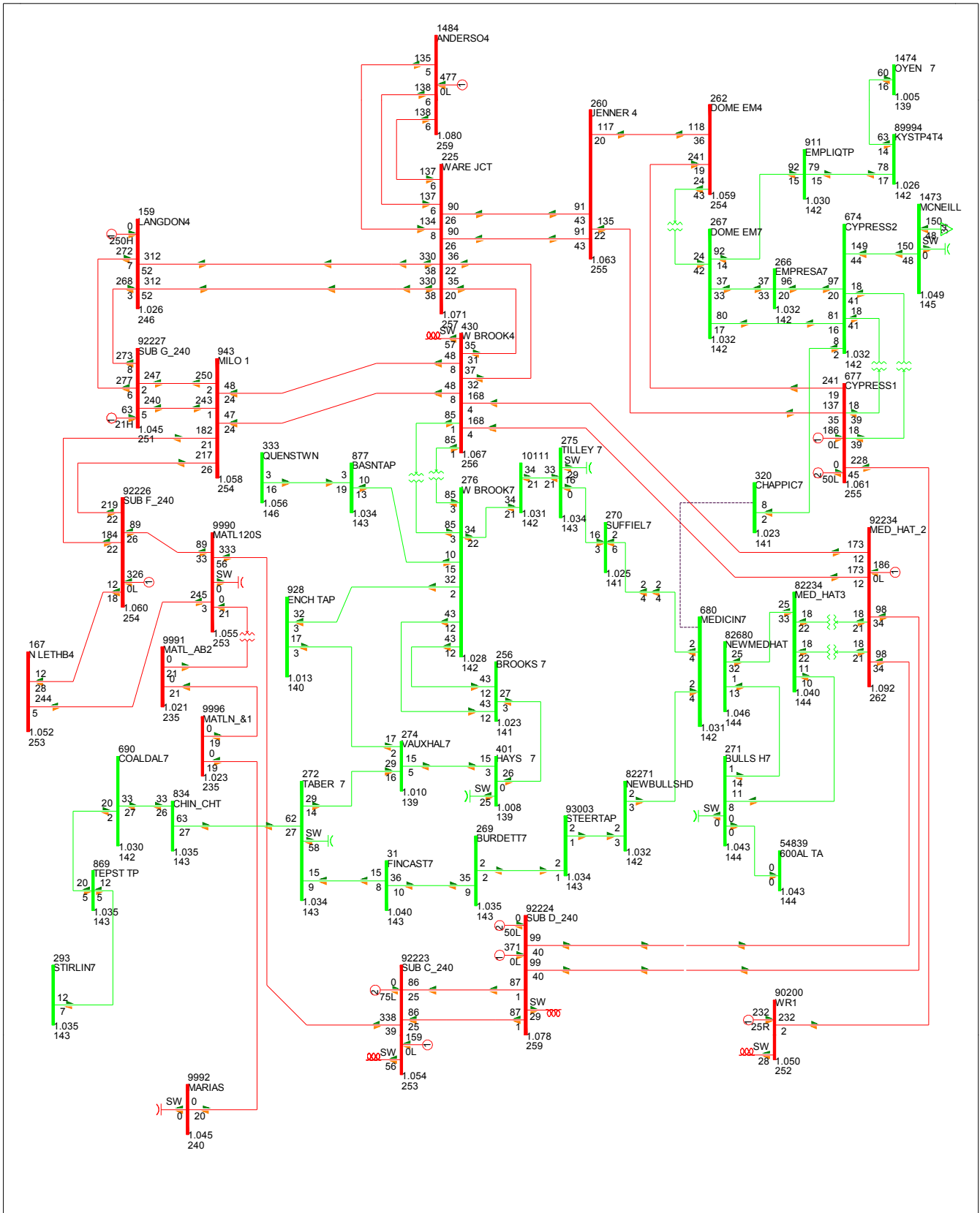


FIG 2017-1A-SP-53: MEDHAT TO CHAPPICE LAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

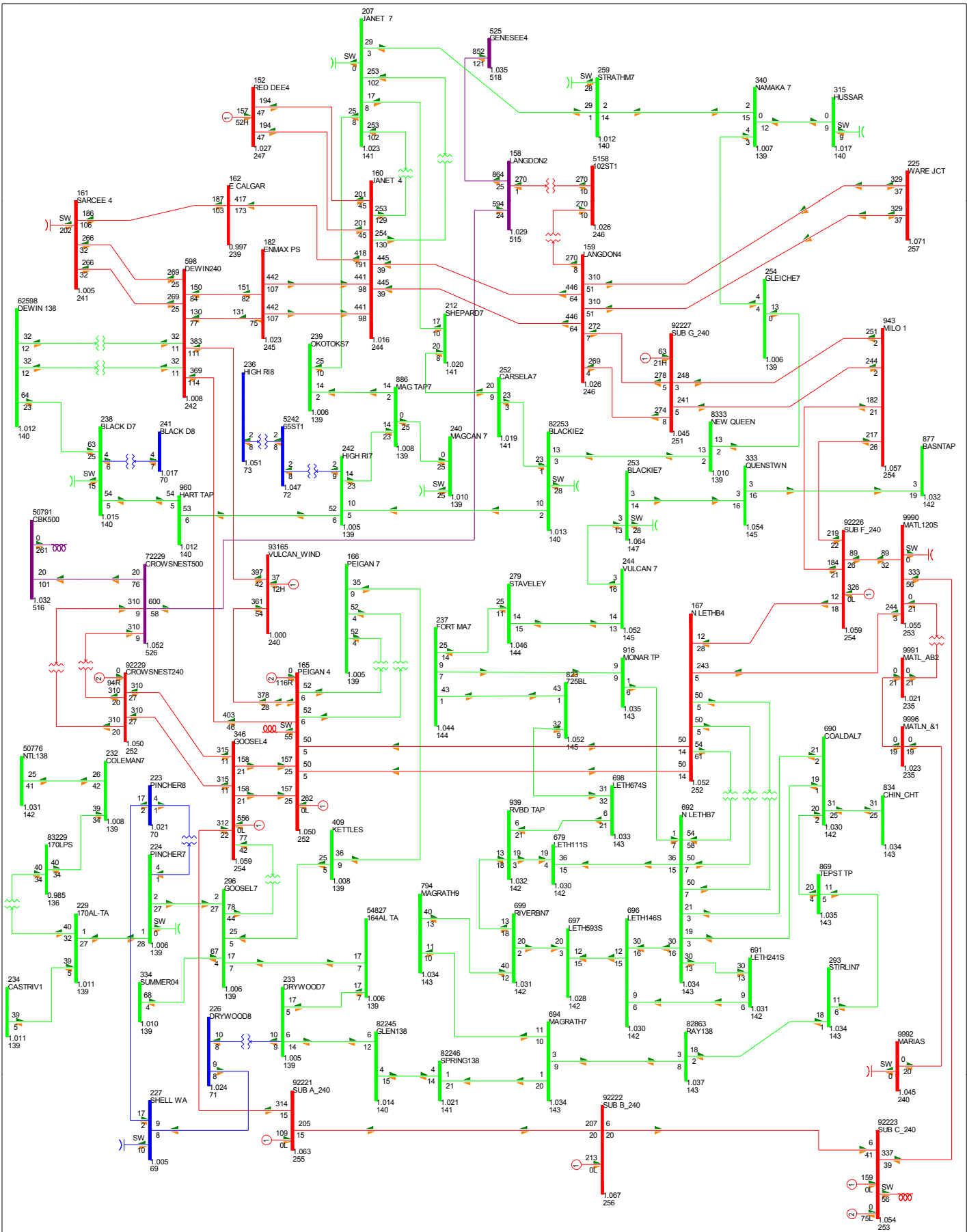


FIG 2017-1A-SP-54: MEDHAT TO BURDETTE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

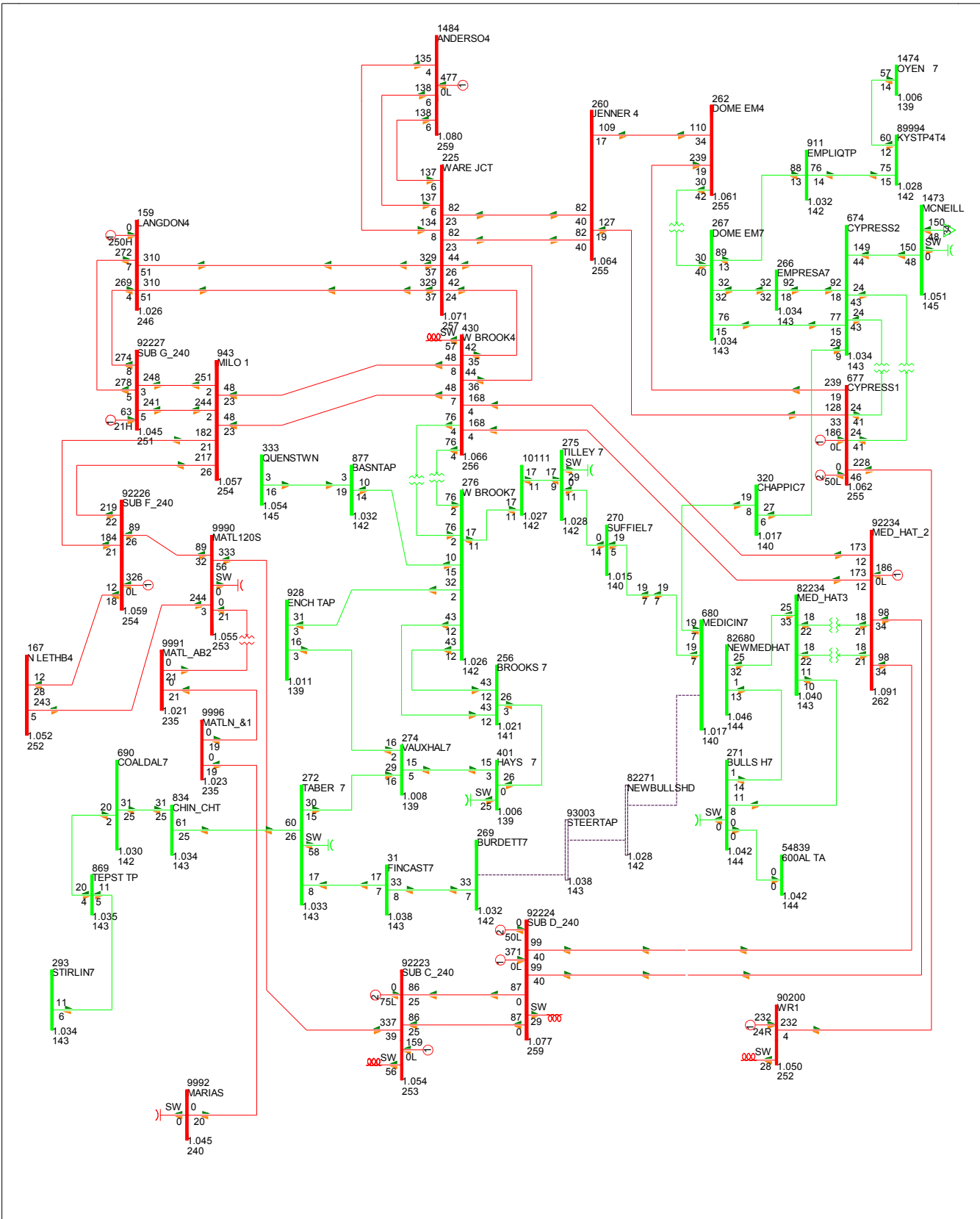


FIG 2017-1A-SP-55: MEDHAT TO BURDETTE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

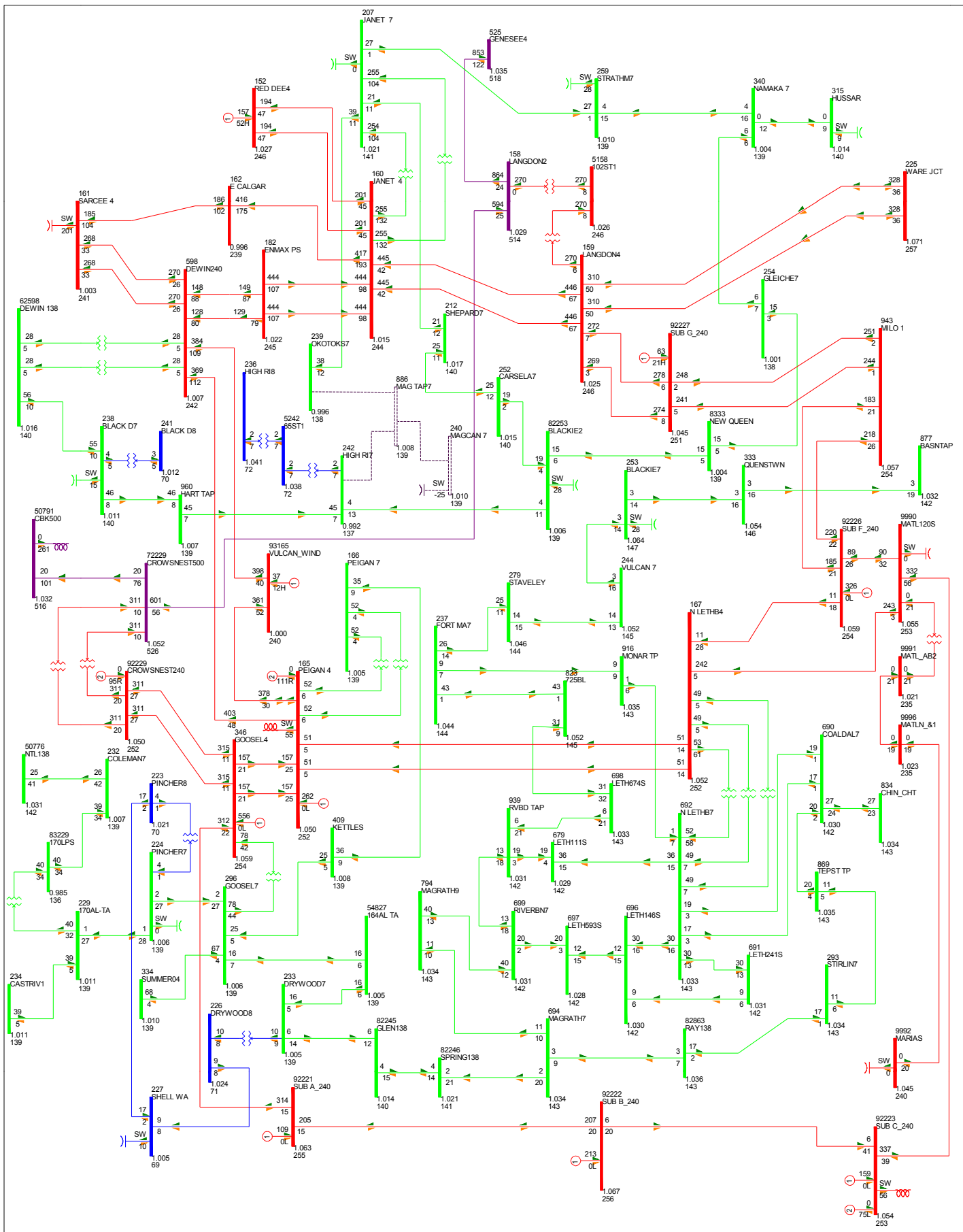


FIG 2017-1A-SP-56: HIGH RIVER TO OKOTOKS 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

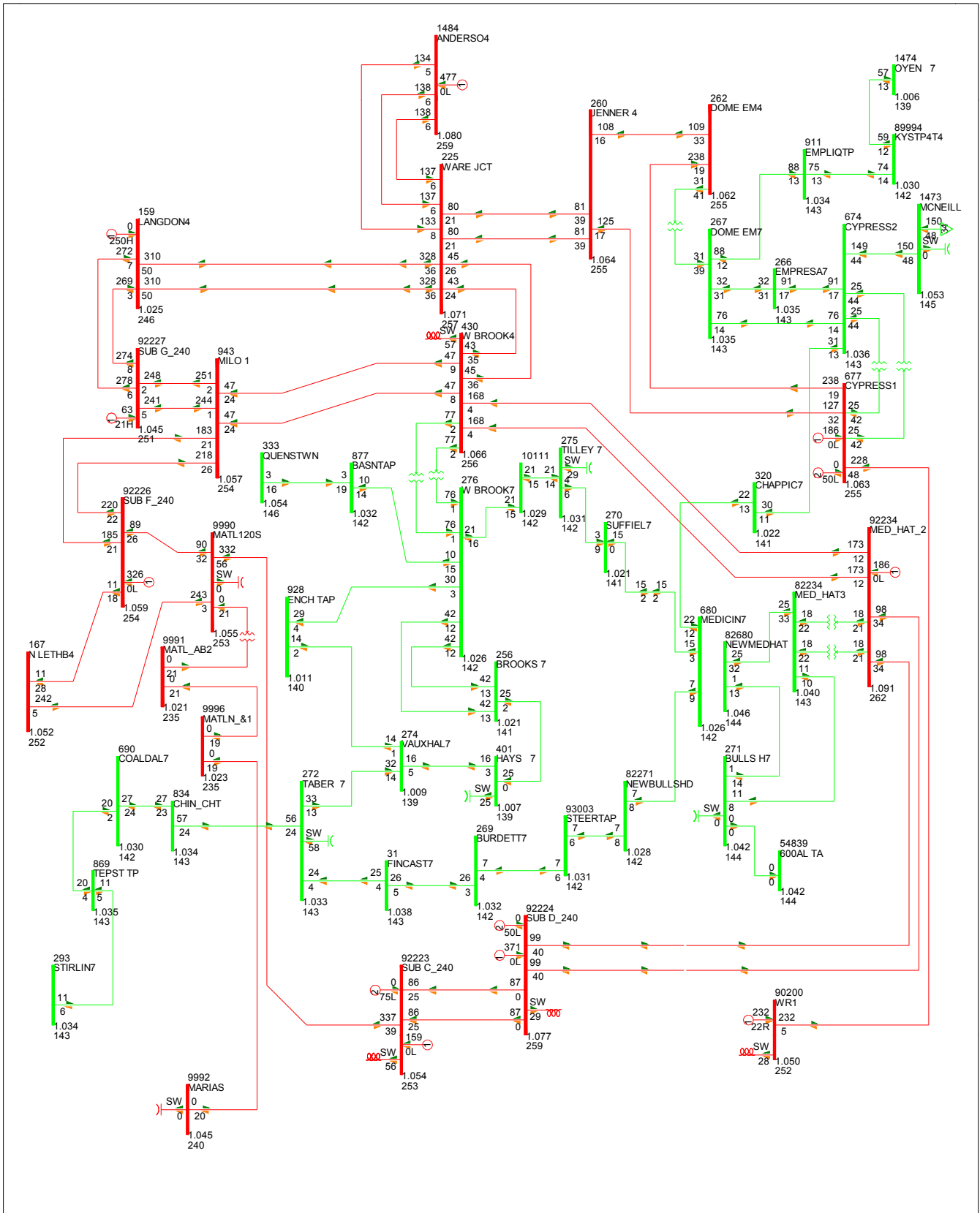


FIG 2017-1A-SP-57: HIGH RIVER TO OKOTOKS 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

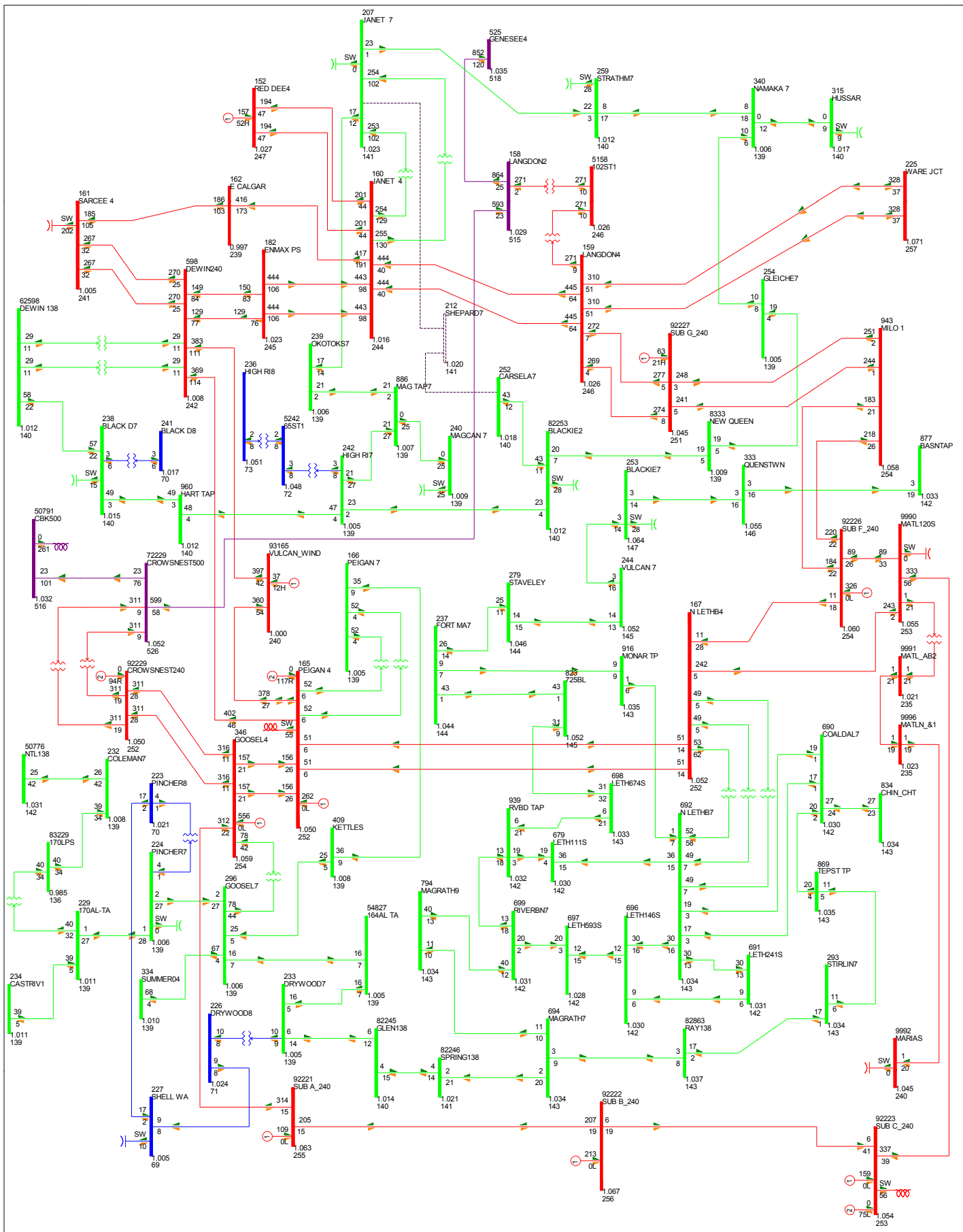


FIG 2017-1A-SP-58: JANET TO CARSELAND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, DEC 01 2008 16:15

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 18 MW

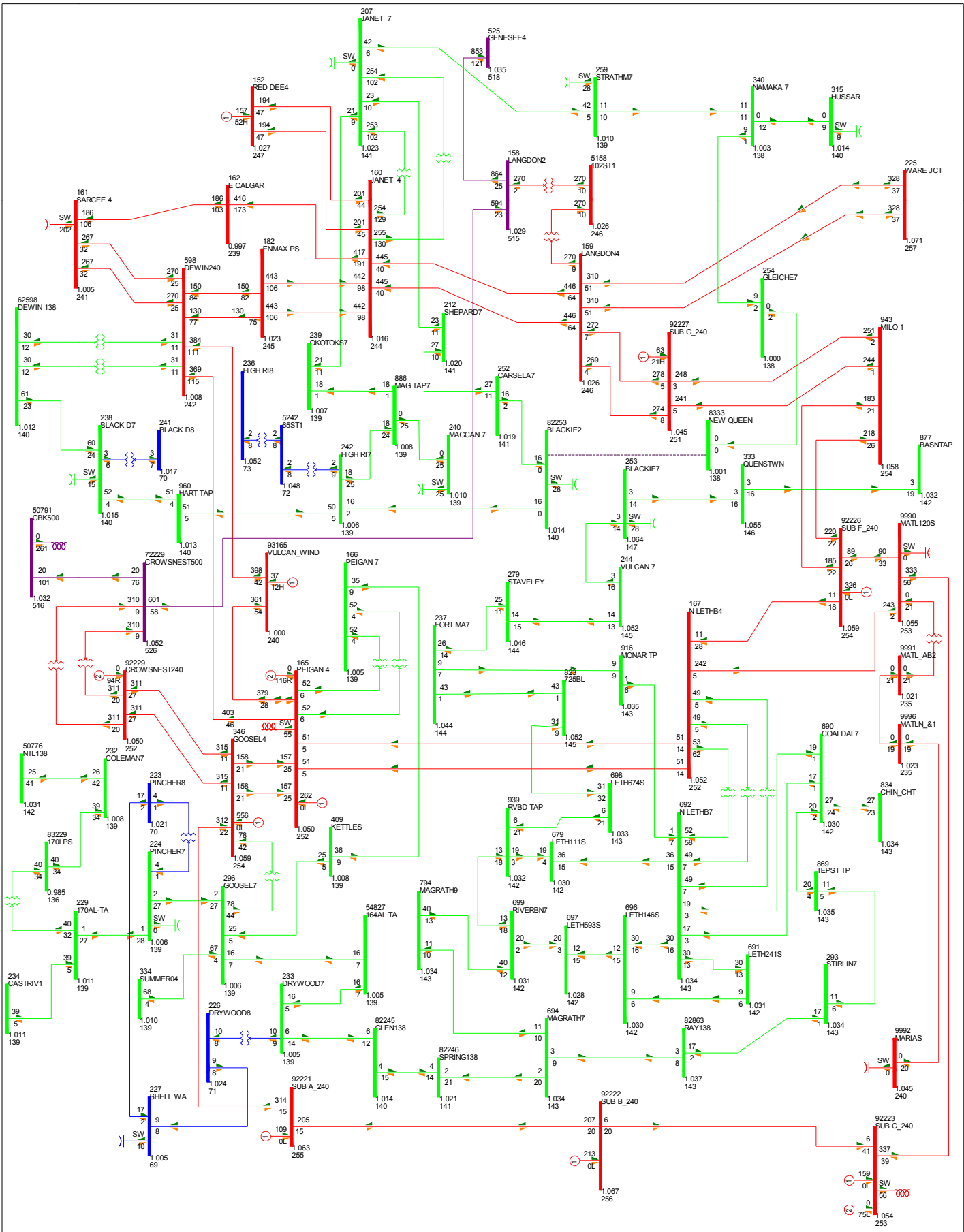


FIG 2017-1A-SP-60: BLACKIE TO NEW QUEENSTOWN 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

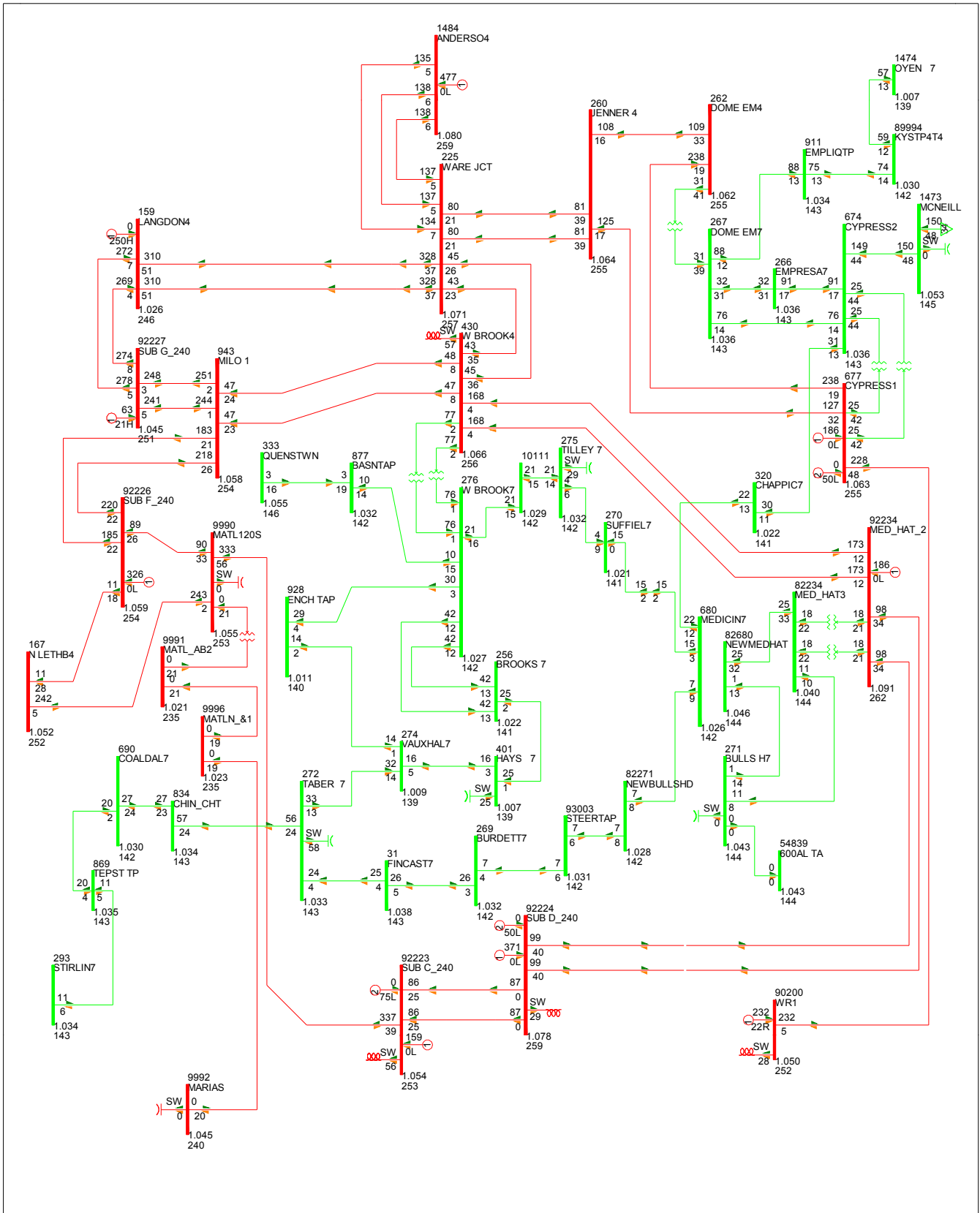


FIG 2017-1A-SP-61: BLACKIE TO NEW QUEENSTOWN 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 15 MW

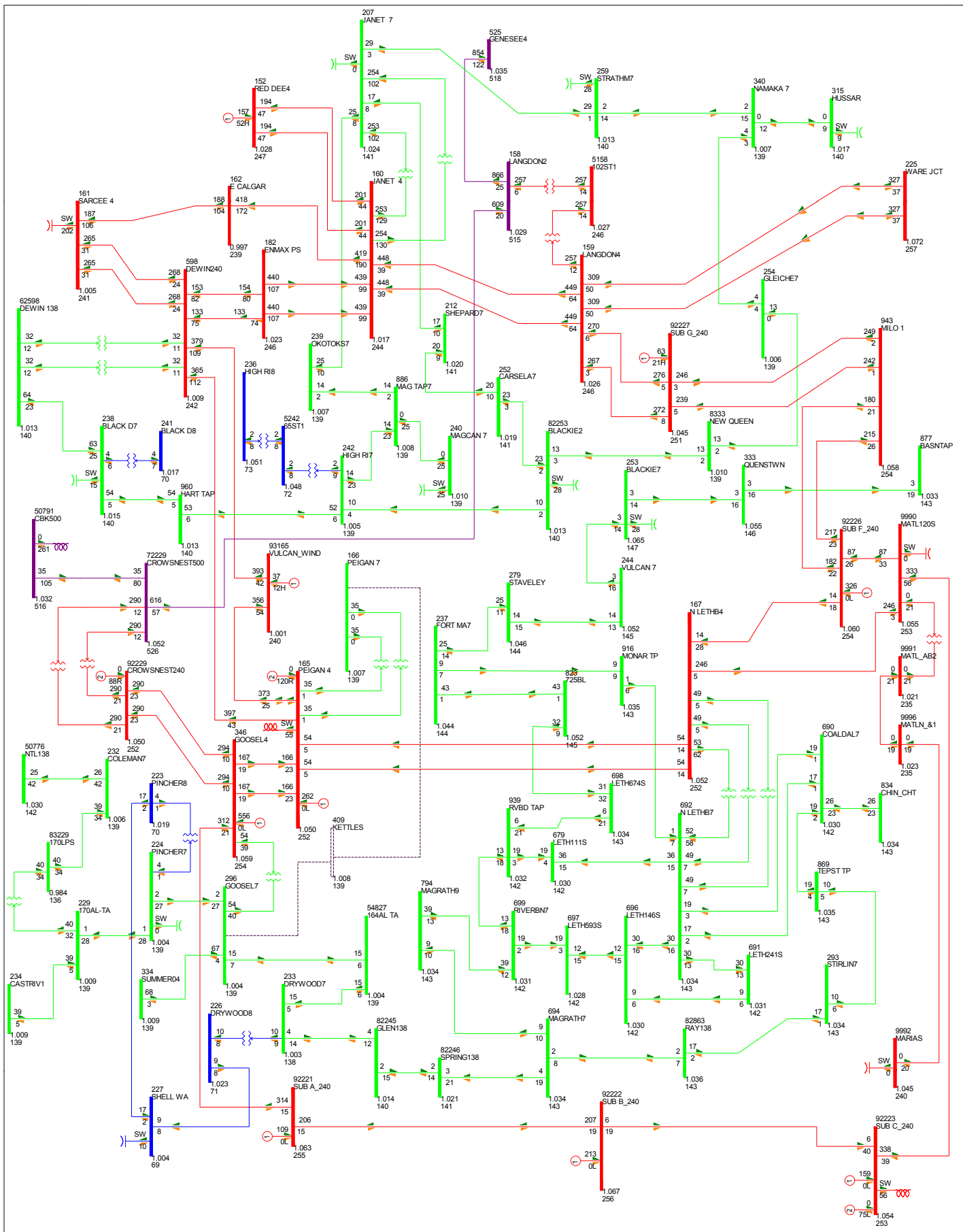


FIG 2017-1A-SP-62: PEIGAN TO GOOSELAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -42 MW

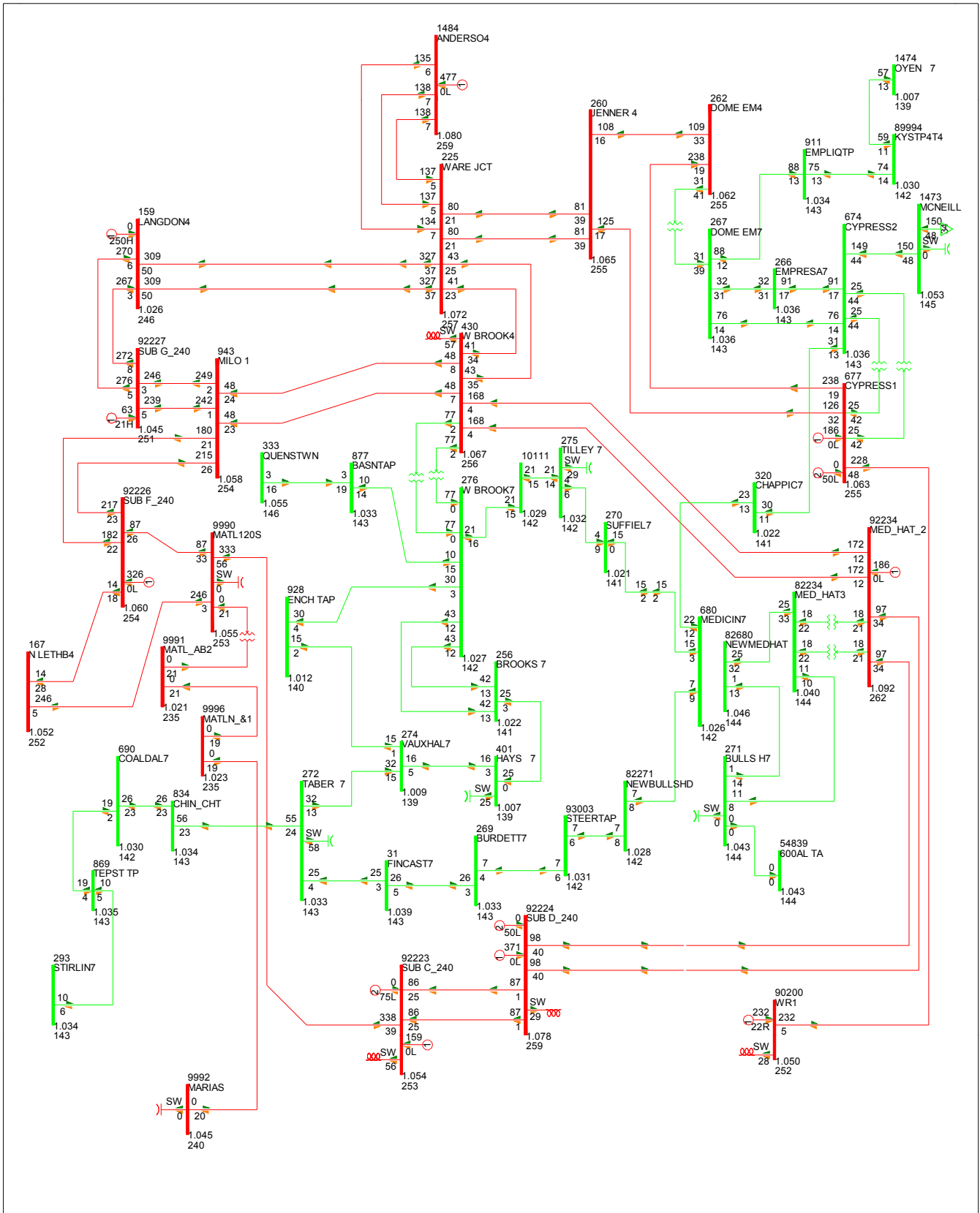


FIG 2017-1A-SP-63: PEIGAN TO GOOSELAKE 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -42 MW

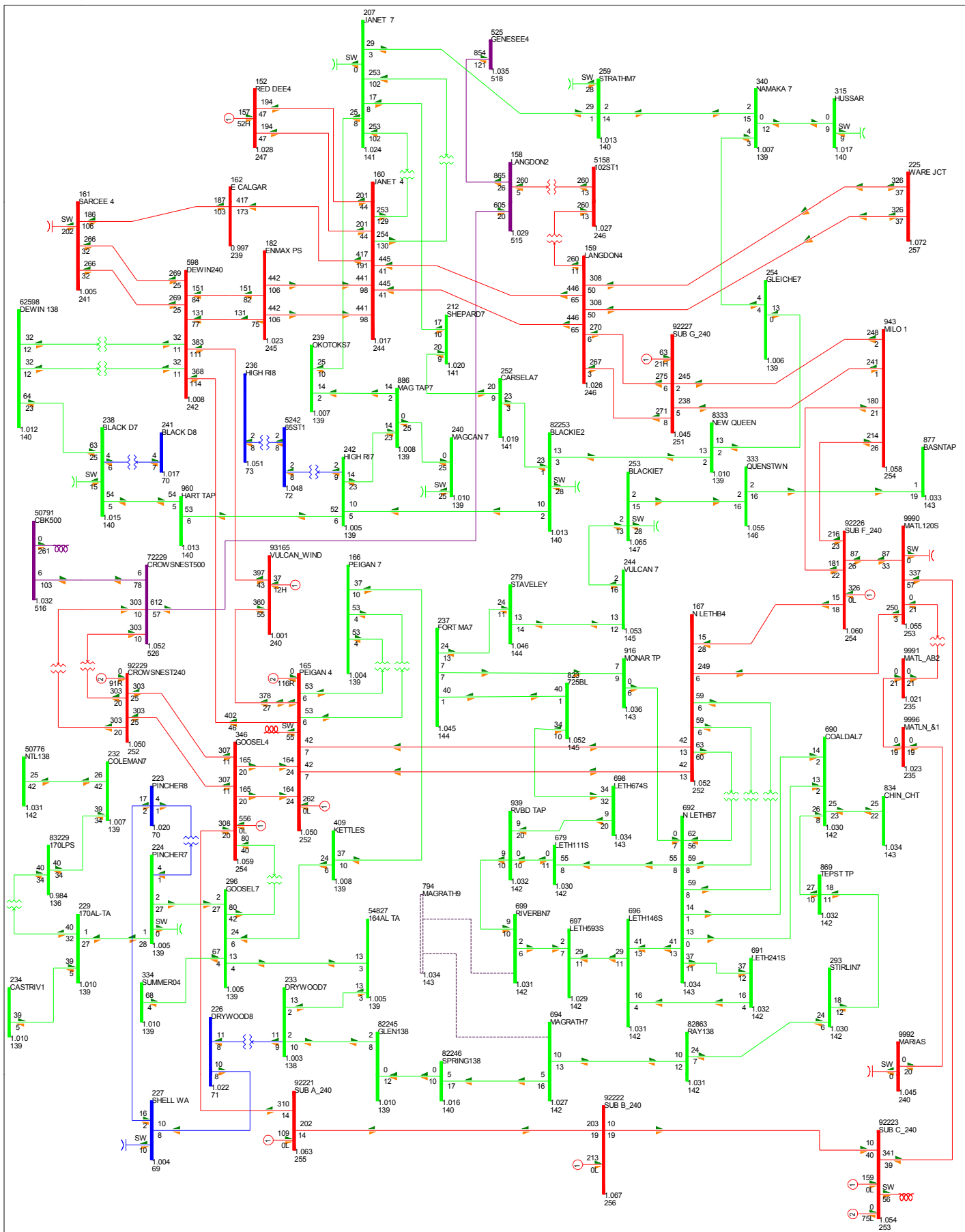


FIG 2017-1A-SP-64: MAGRATH TO RIVERBEND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -12 MW

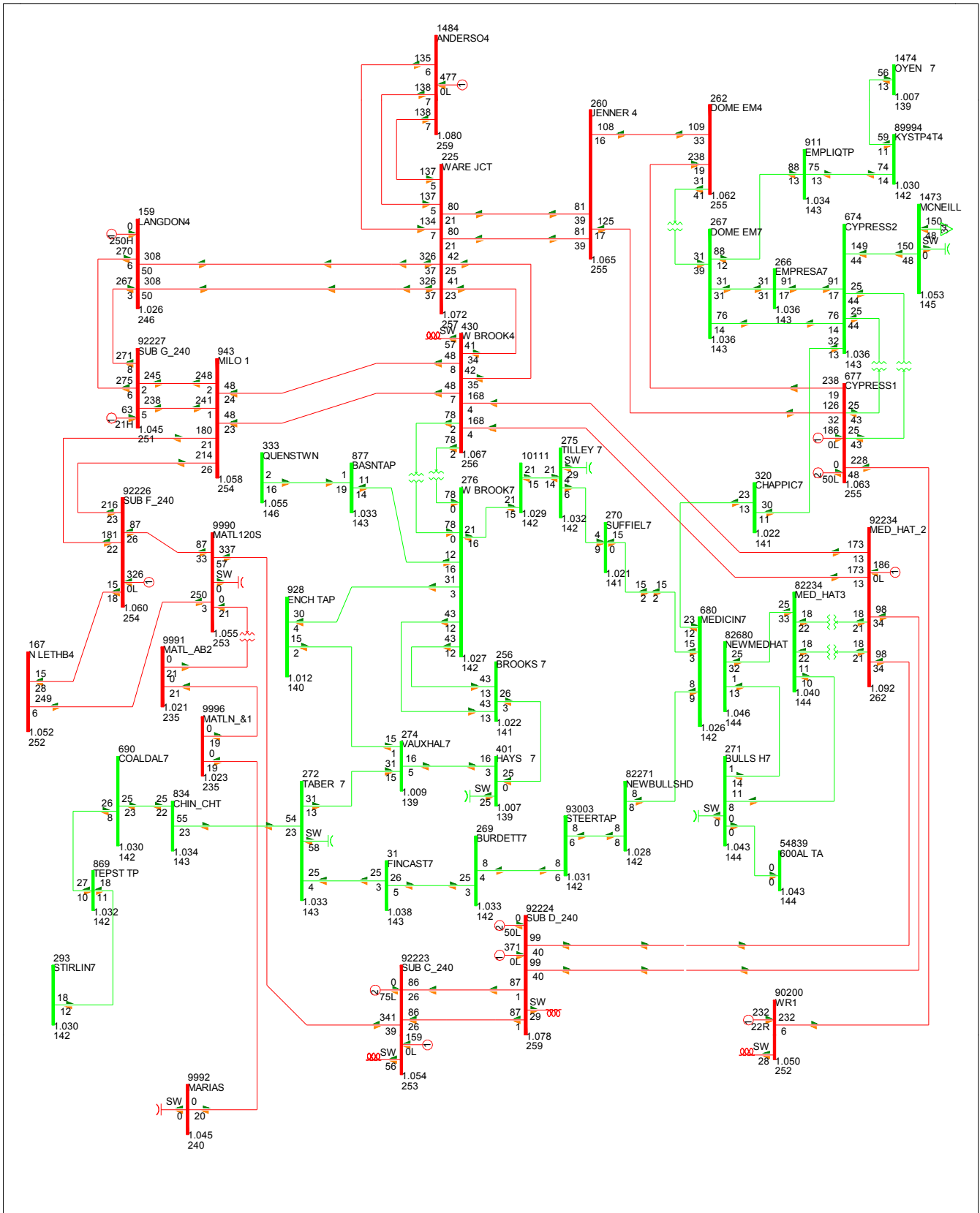


FIG 2017-1A-SP-65: MAGRATH TO RIVERBEND 138 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -12 MW

GENERATION DISPATCH REPORT

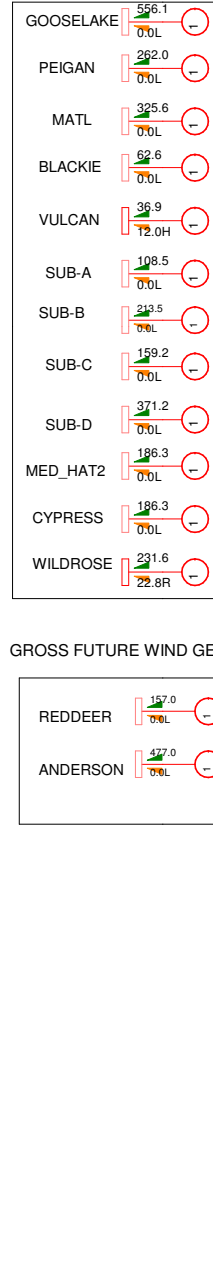
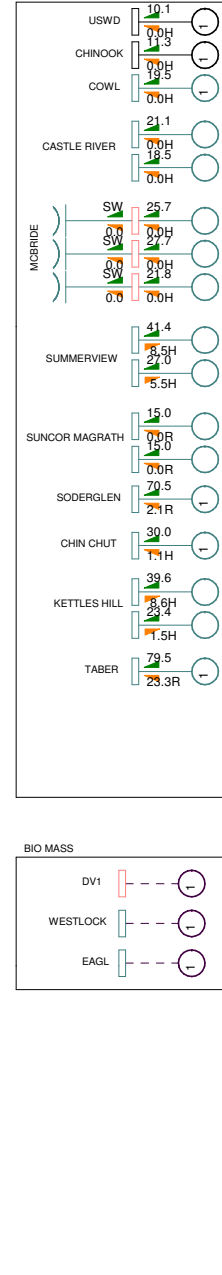
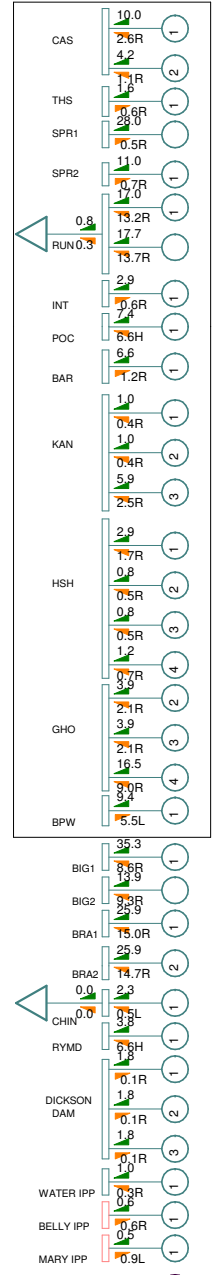
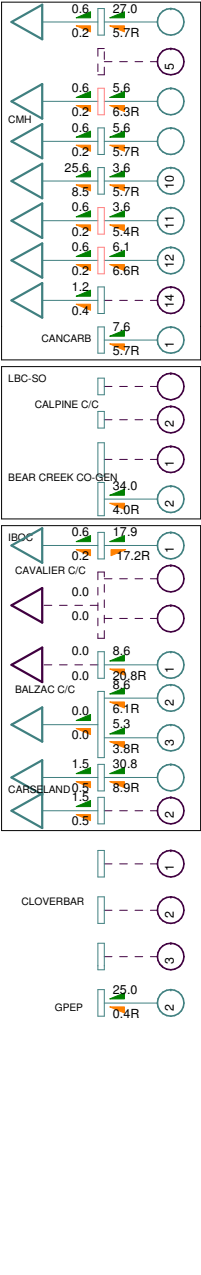
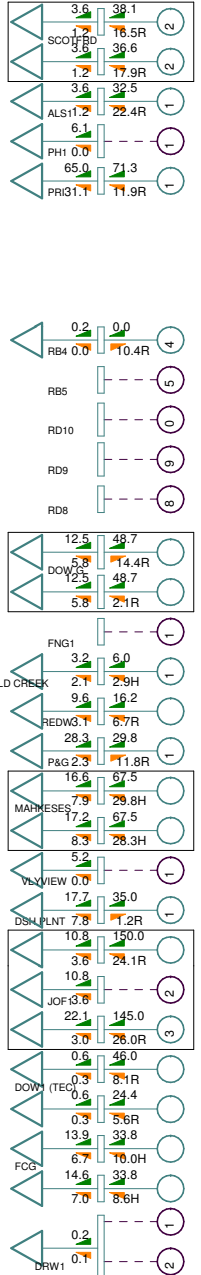
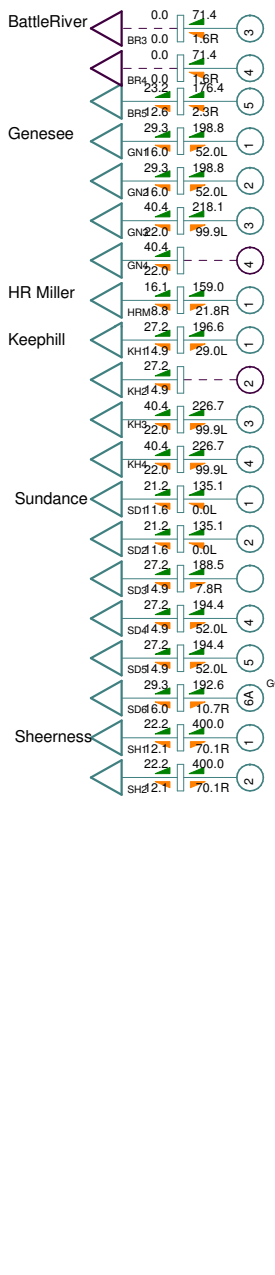
GROSS COAL GEN. 3584.0 MW

GAS GENERATION

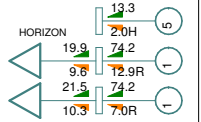
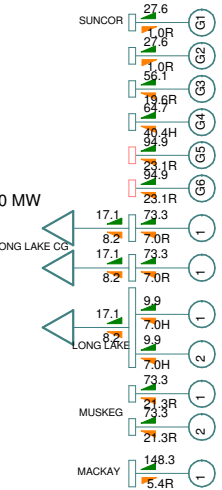
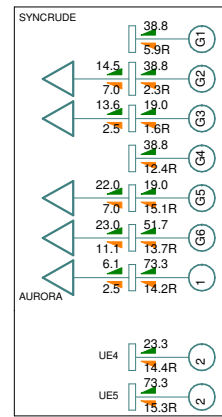
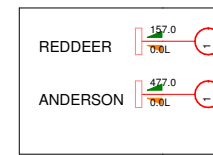
HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



GROSS FUTURE WIND GEN. IN CENTRAL 634.0 MW



2017 SUMMER LIGHT CASE

MON, NOV 24 2008 14:43

Bus - NONE
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%PATEA
 1.050OV 0.950UV
 KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1B-SL-1

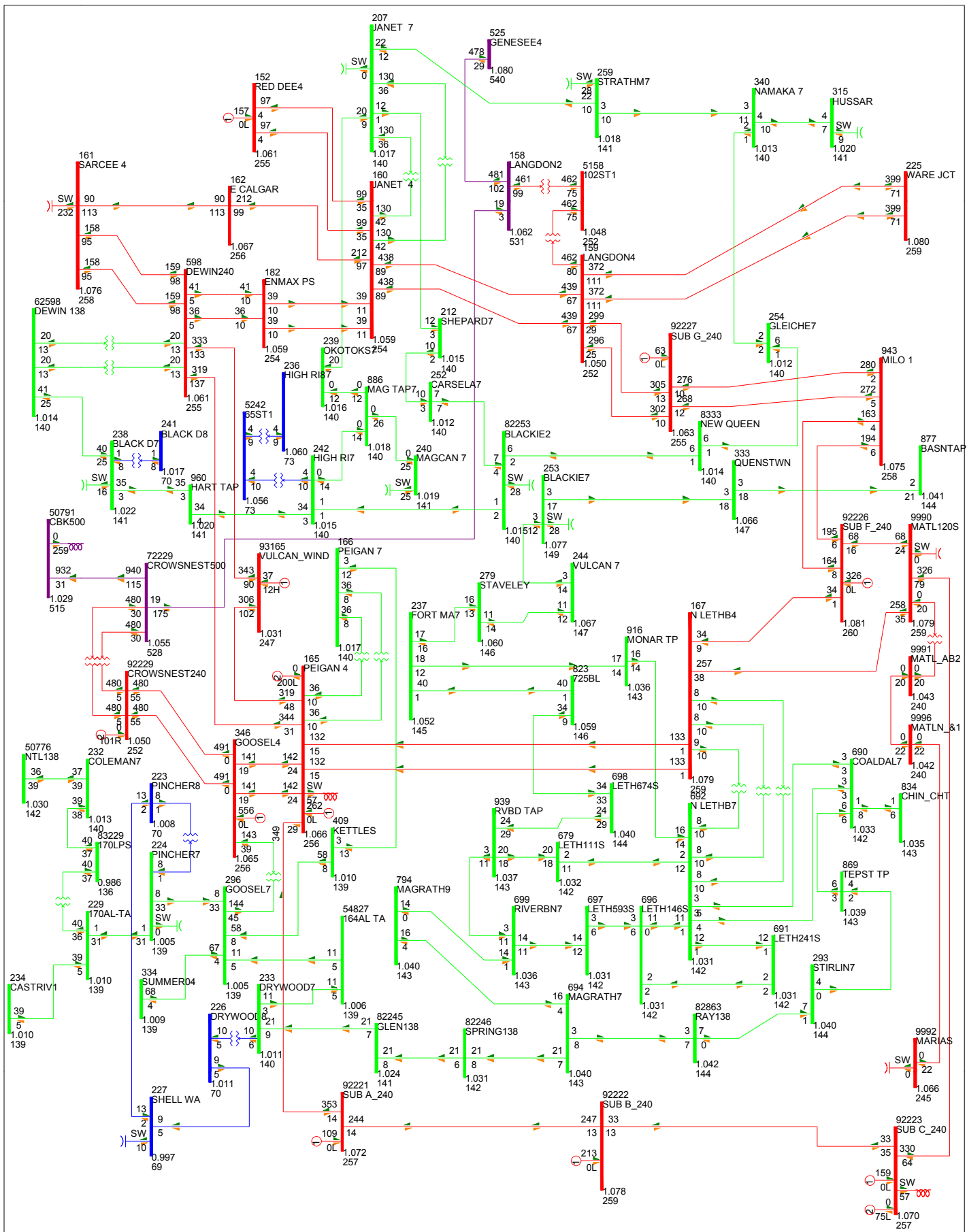


FIG 2017-1B-SL-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:41

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

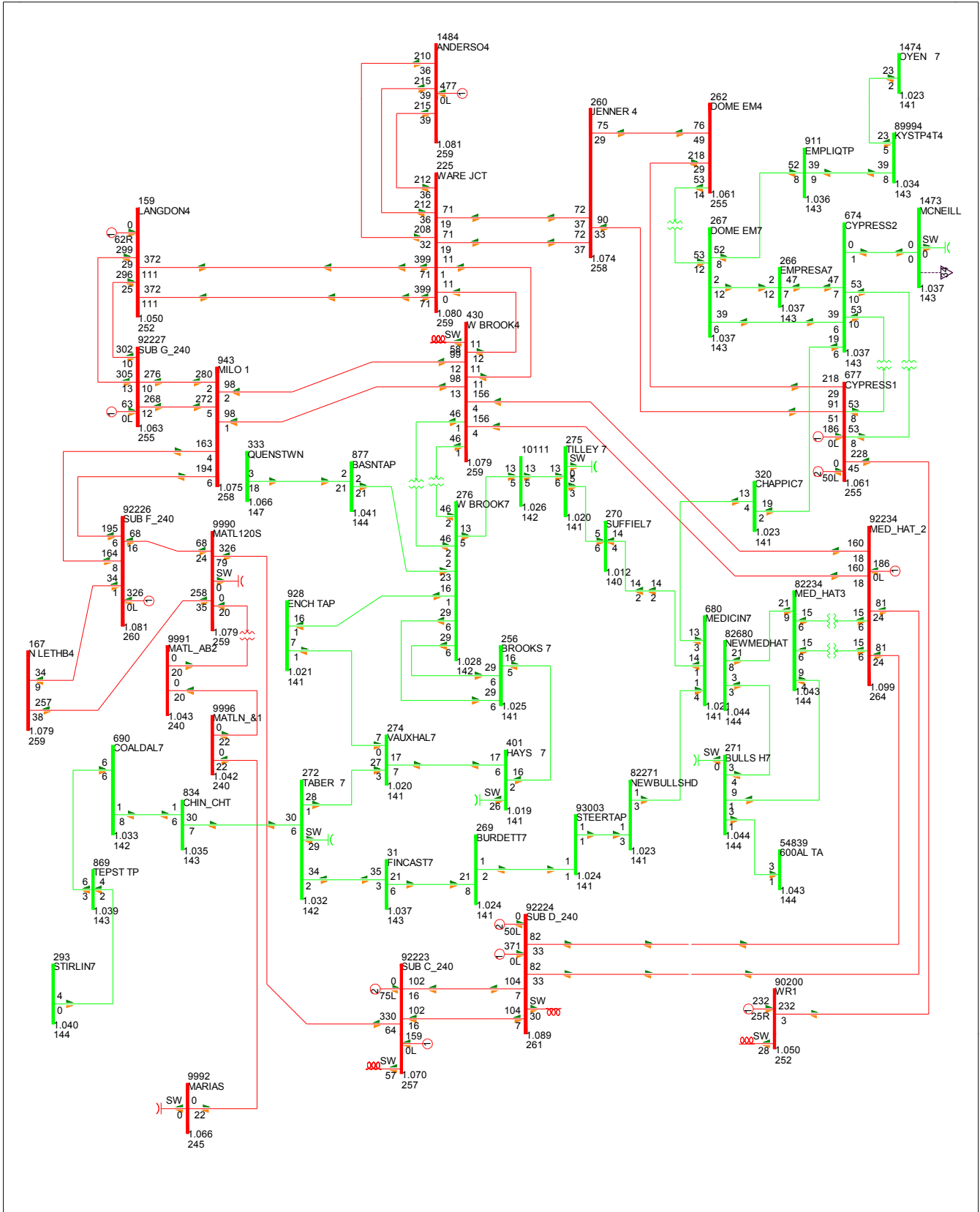


FIG 2017-1B-SL-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

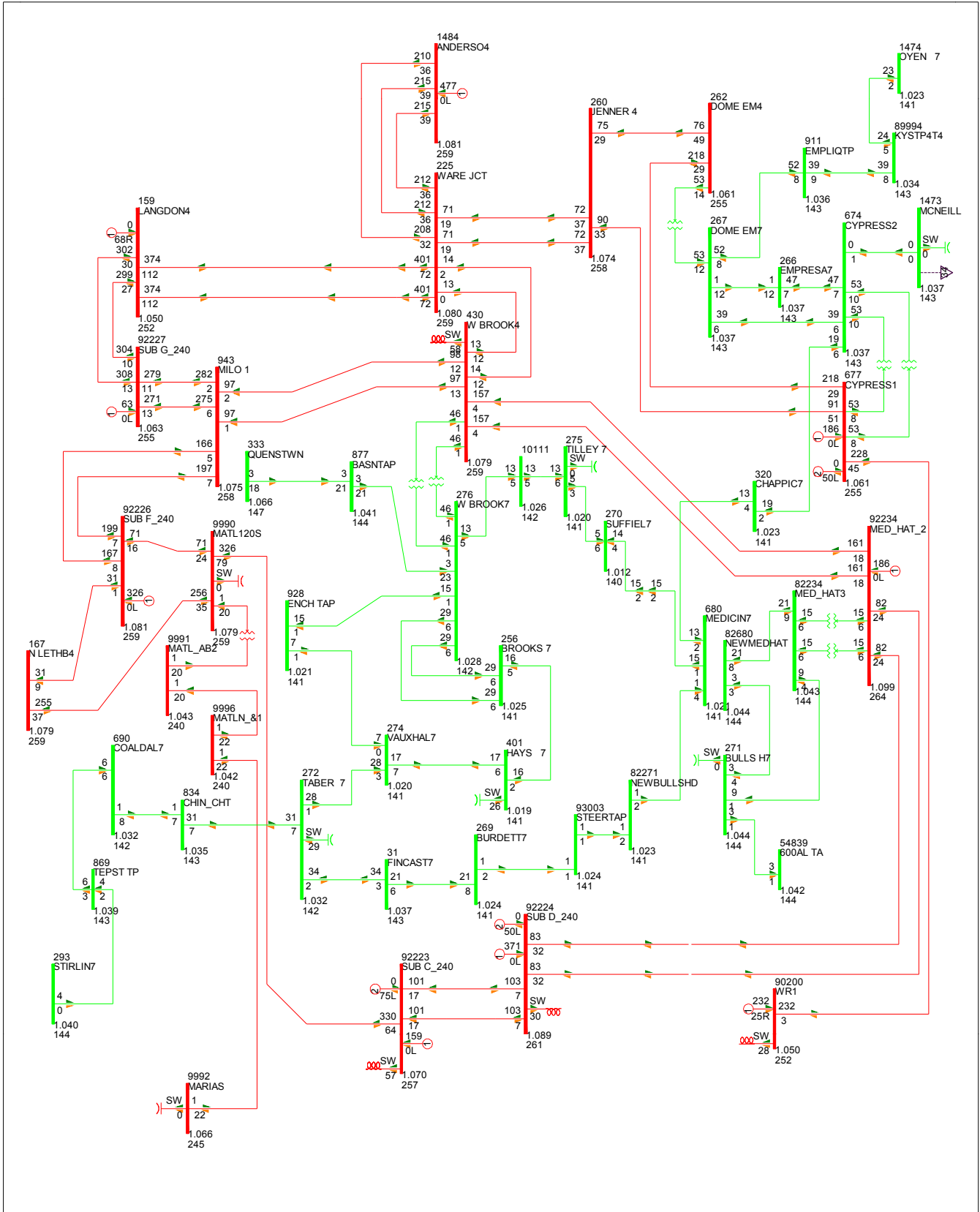


FIG 2017-1B-SL-5: LANGDON TO CROWNSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:11

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

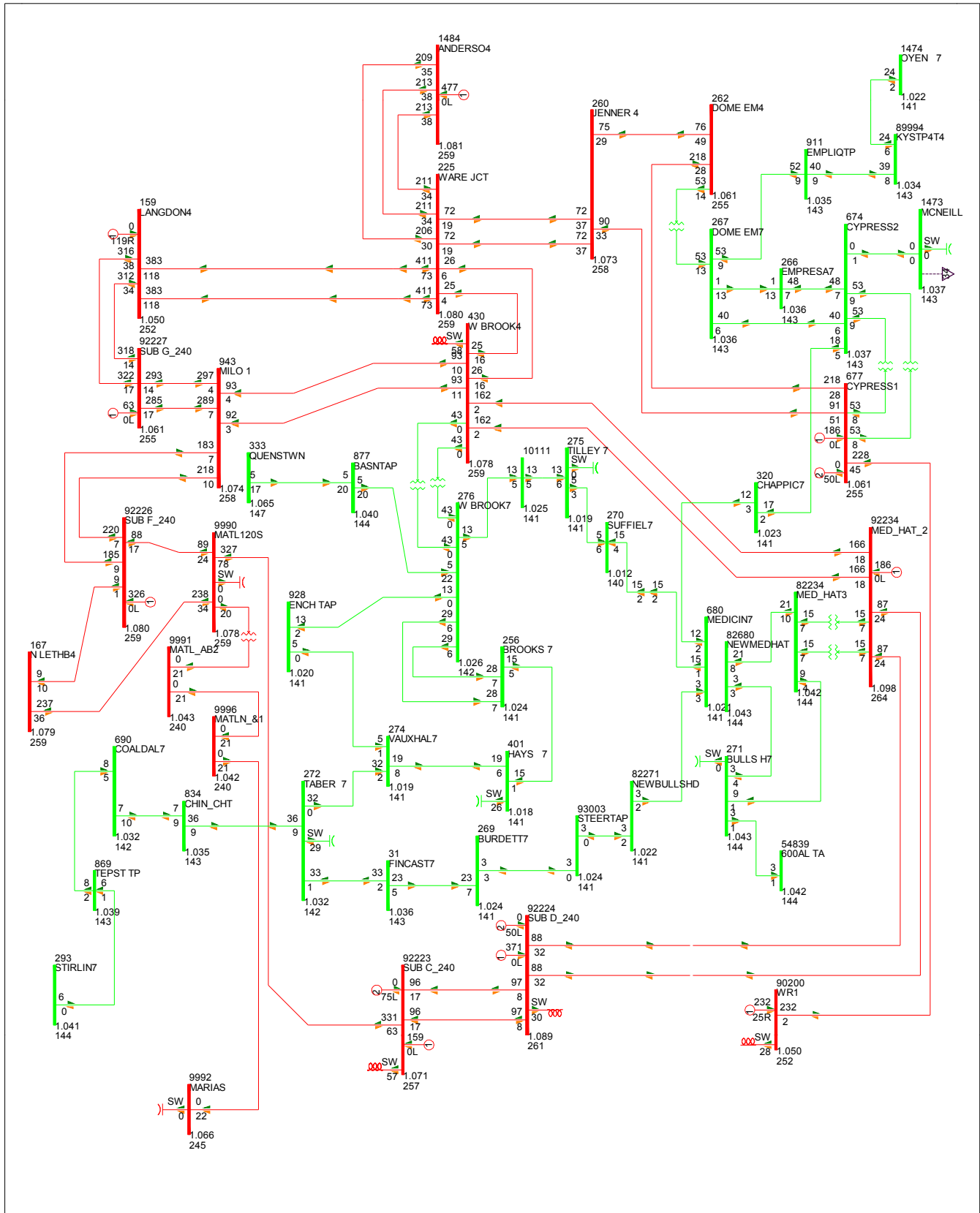


FIG 2017-1B-SL-7: CROSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:41

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 970 MW

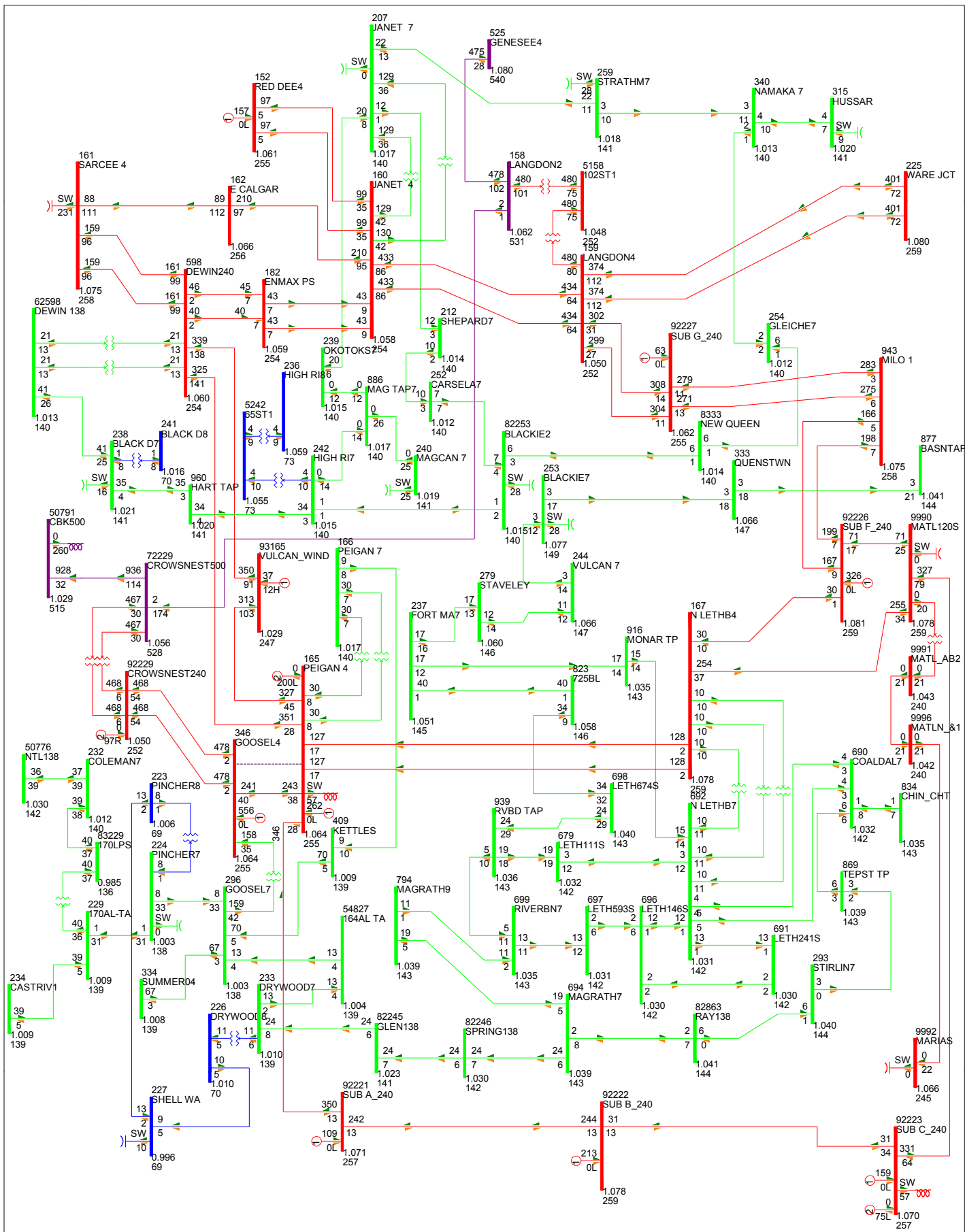


FIG 2017-1B-SL-8: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 997 MW

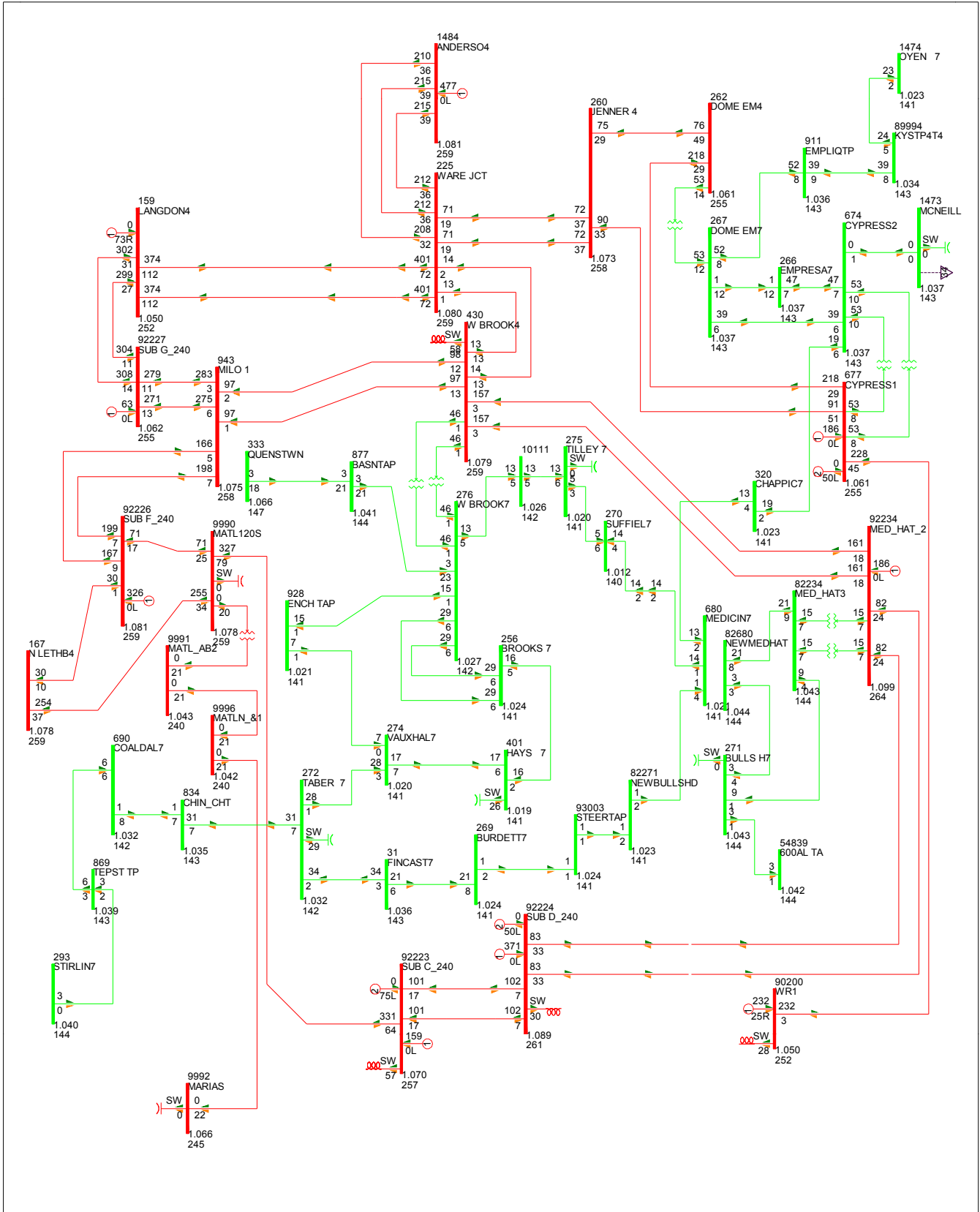


FIG 2017-1B-SL-9: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 997 MW

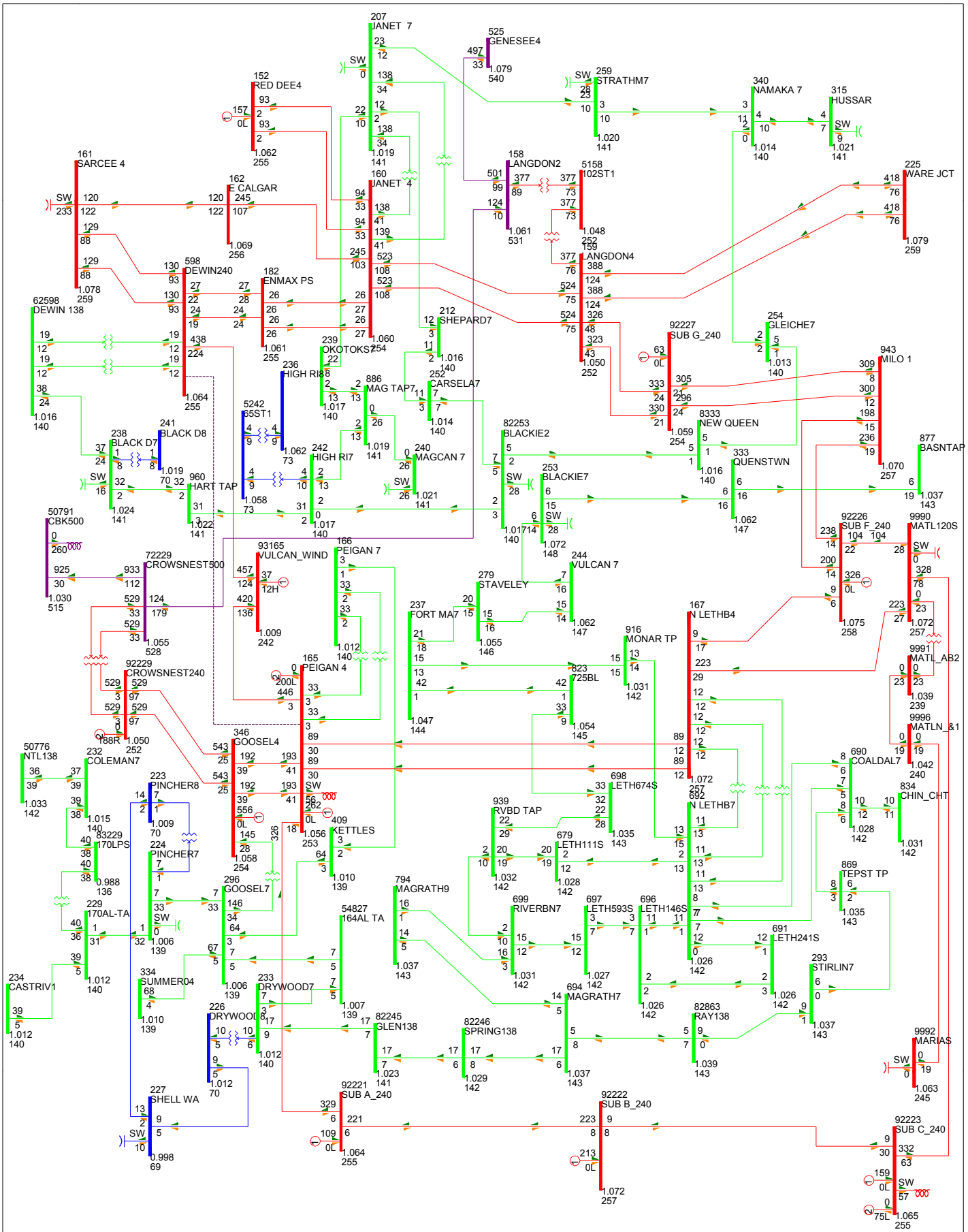


FIG 2017-1B-SL-10: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 986 MW

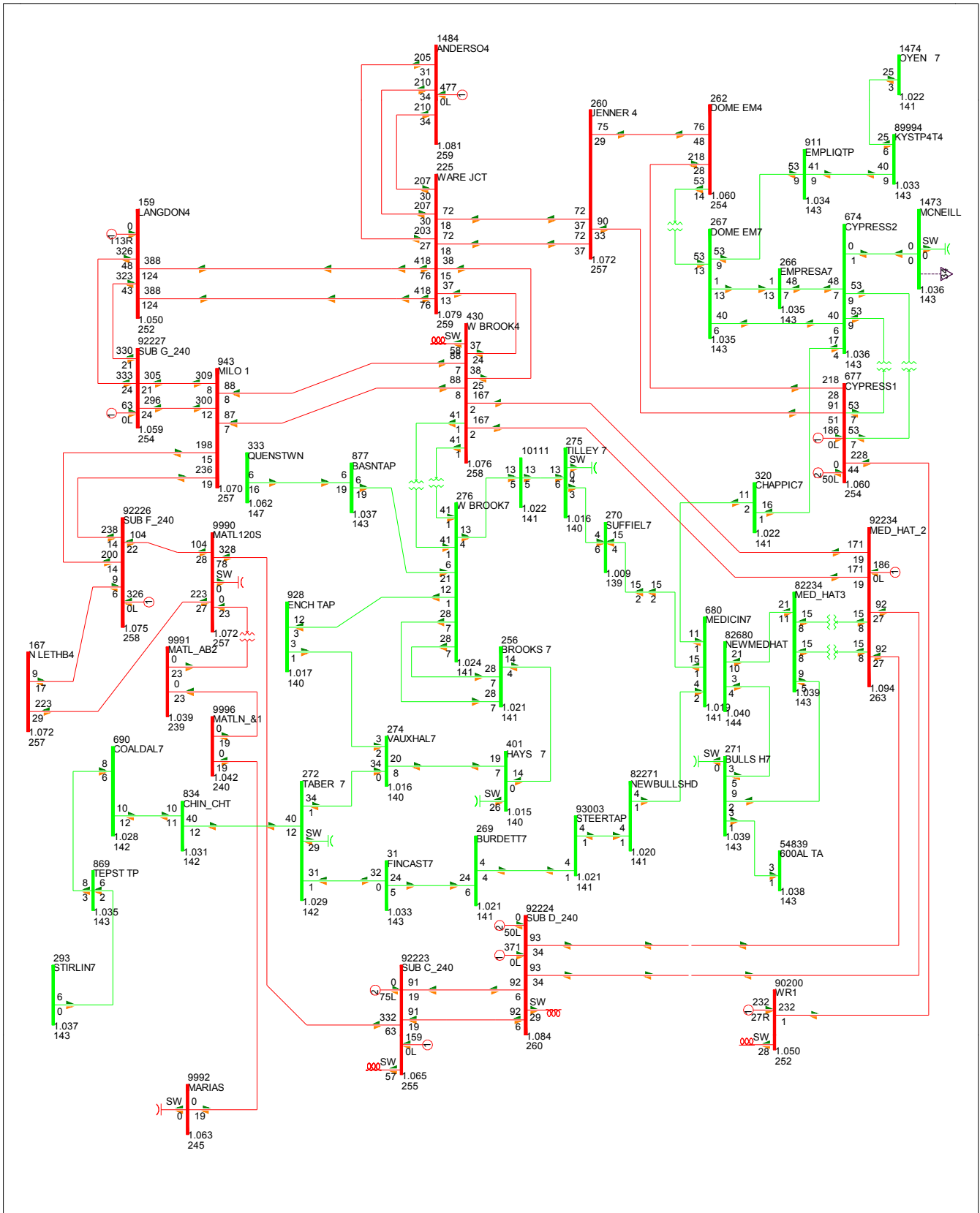


FIG 2017-1B-SL-11: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 986 MW

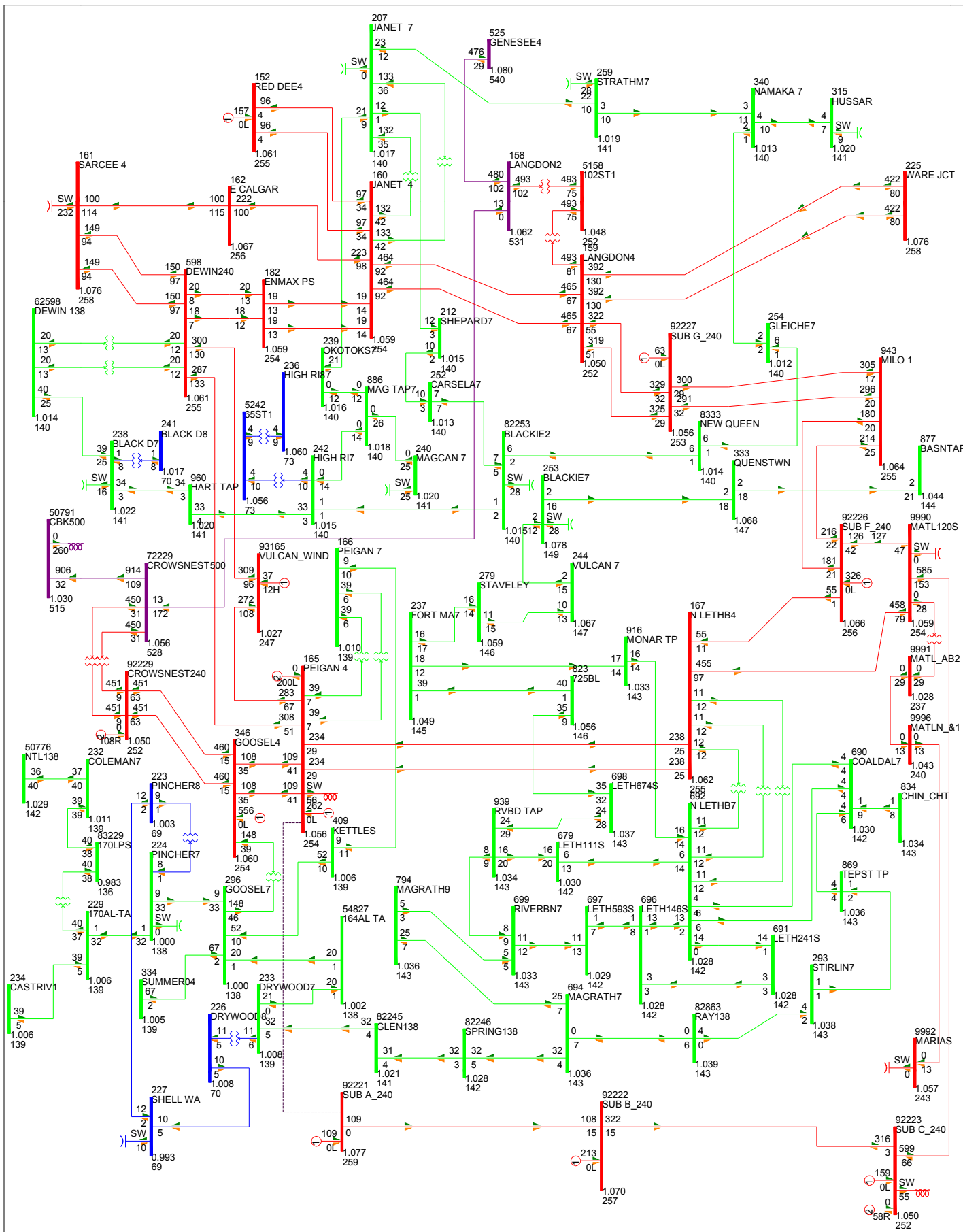


FIG 2017-1B-SL-12: PEIGAN TO SUB A 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 974 MW

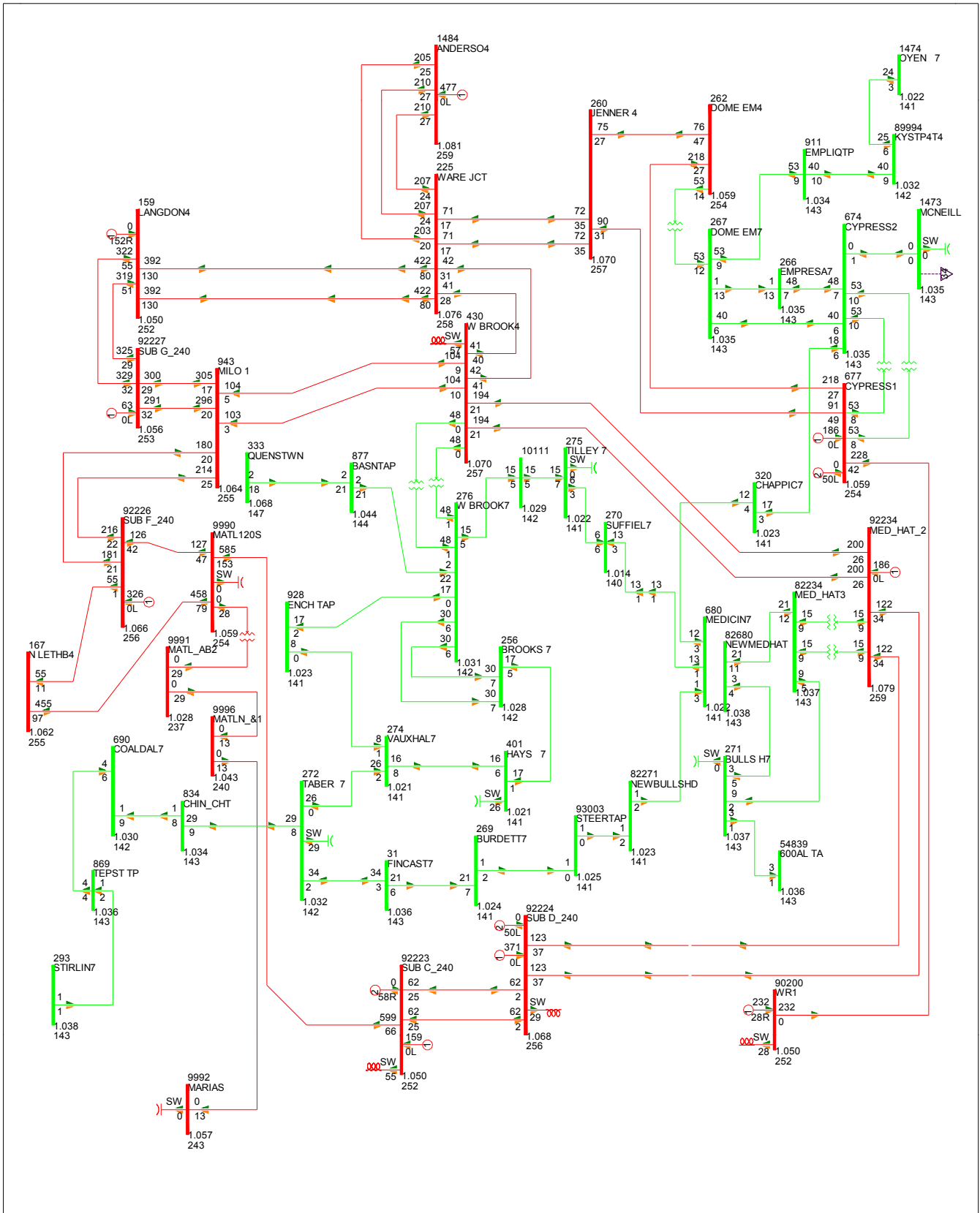


FIG 2017-1B-SL-13: PEIGAN TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 974 MW

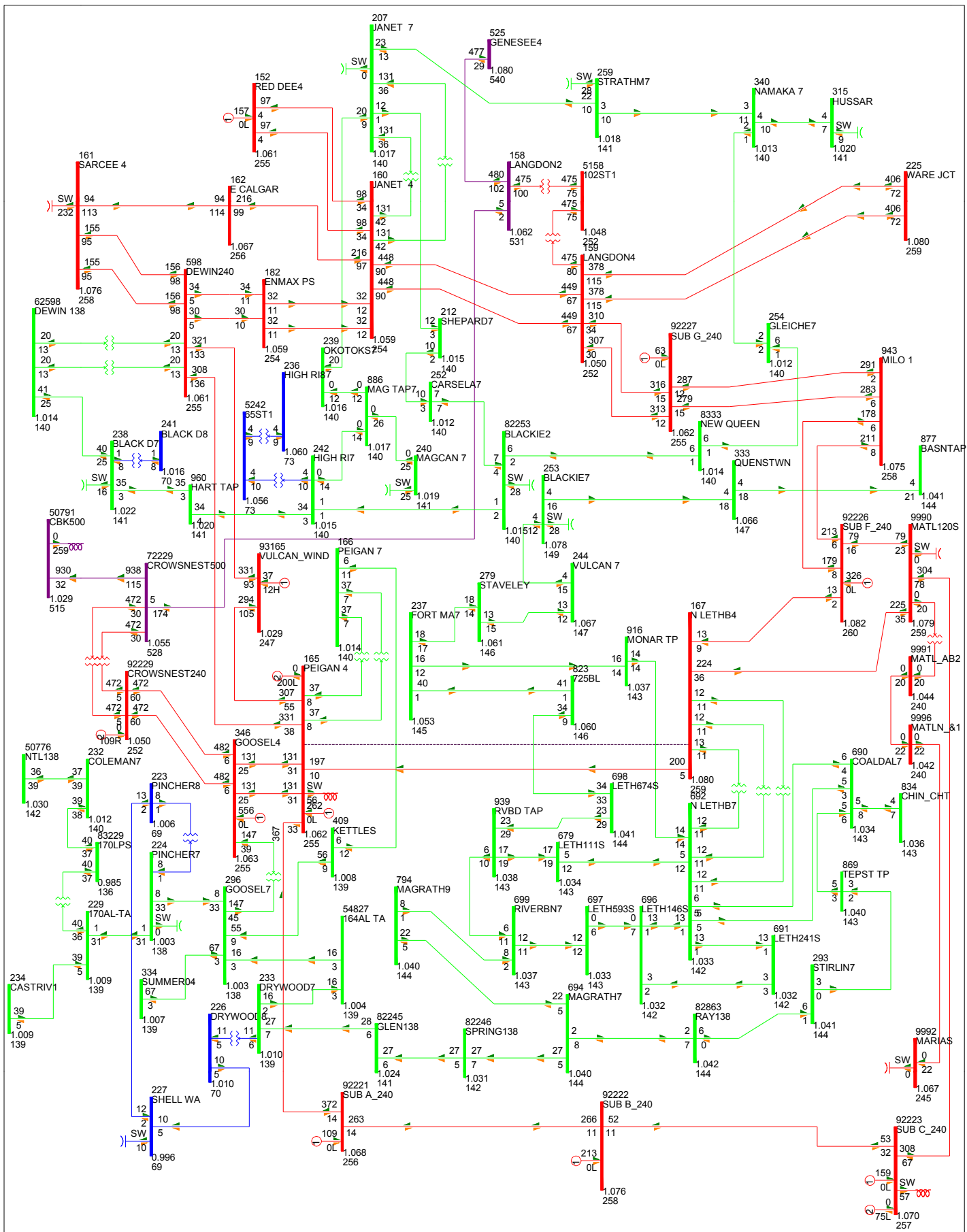


FIG 2017-1B-SL-14: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 998 MW

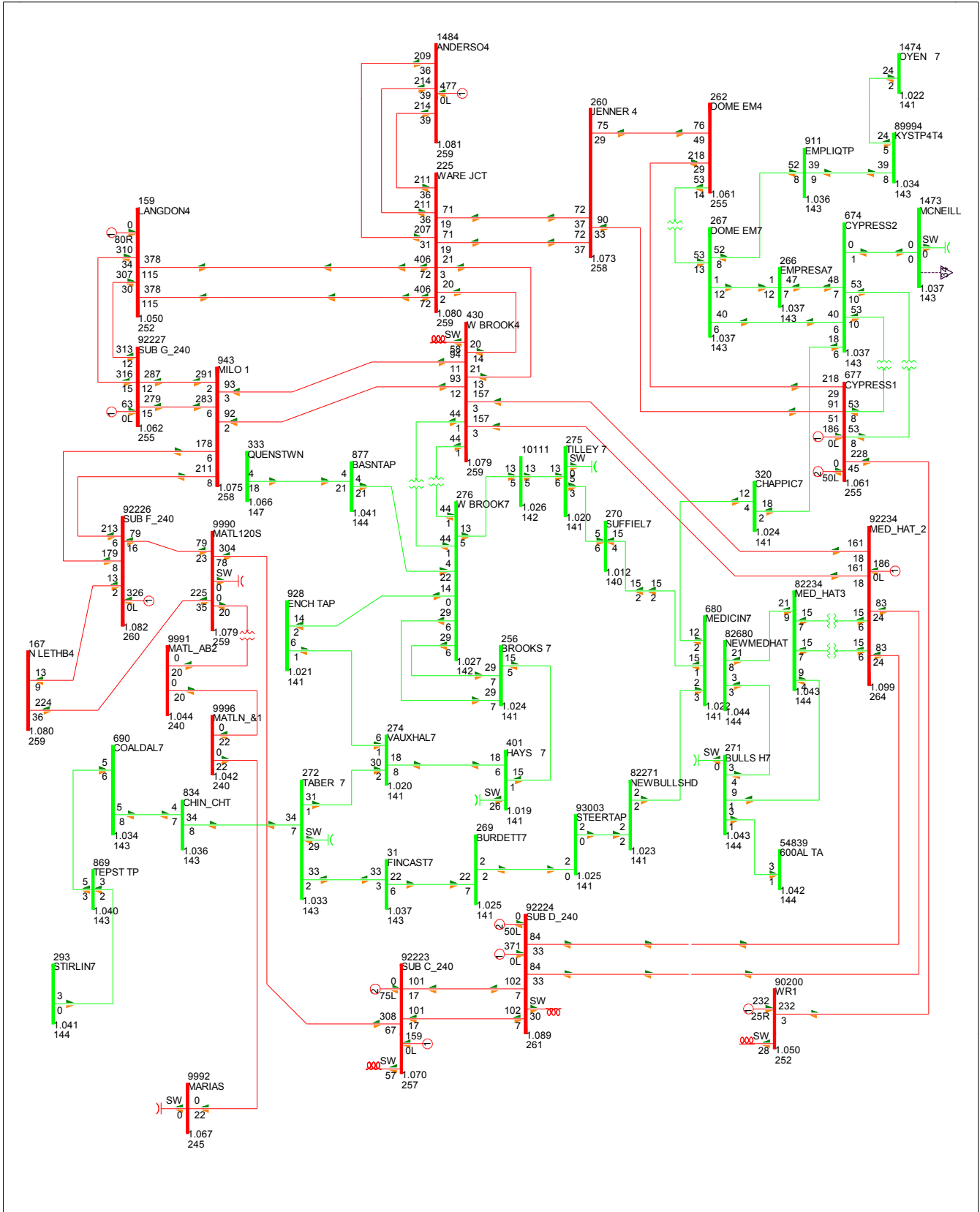


FIG 2017-1B-SL-15: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 998 MW

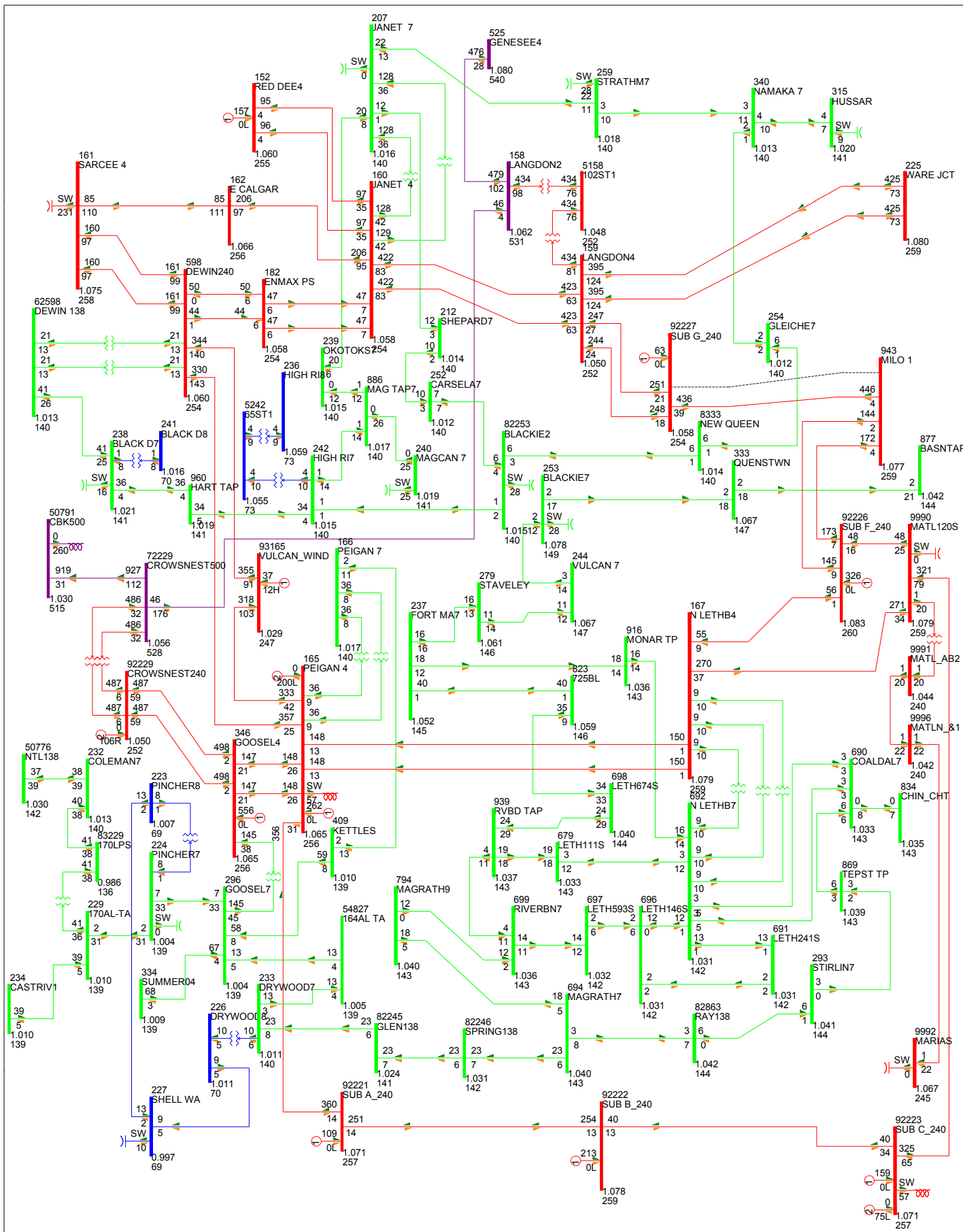


FIG 2017-1B-SL-16: MILO TO SUB G 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR

100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 986 MW

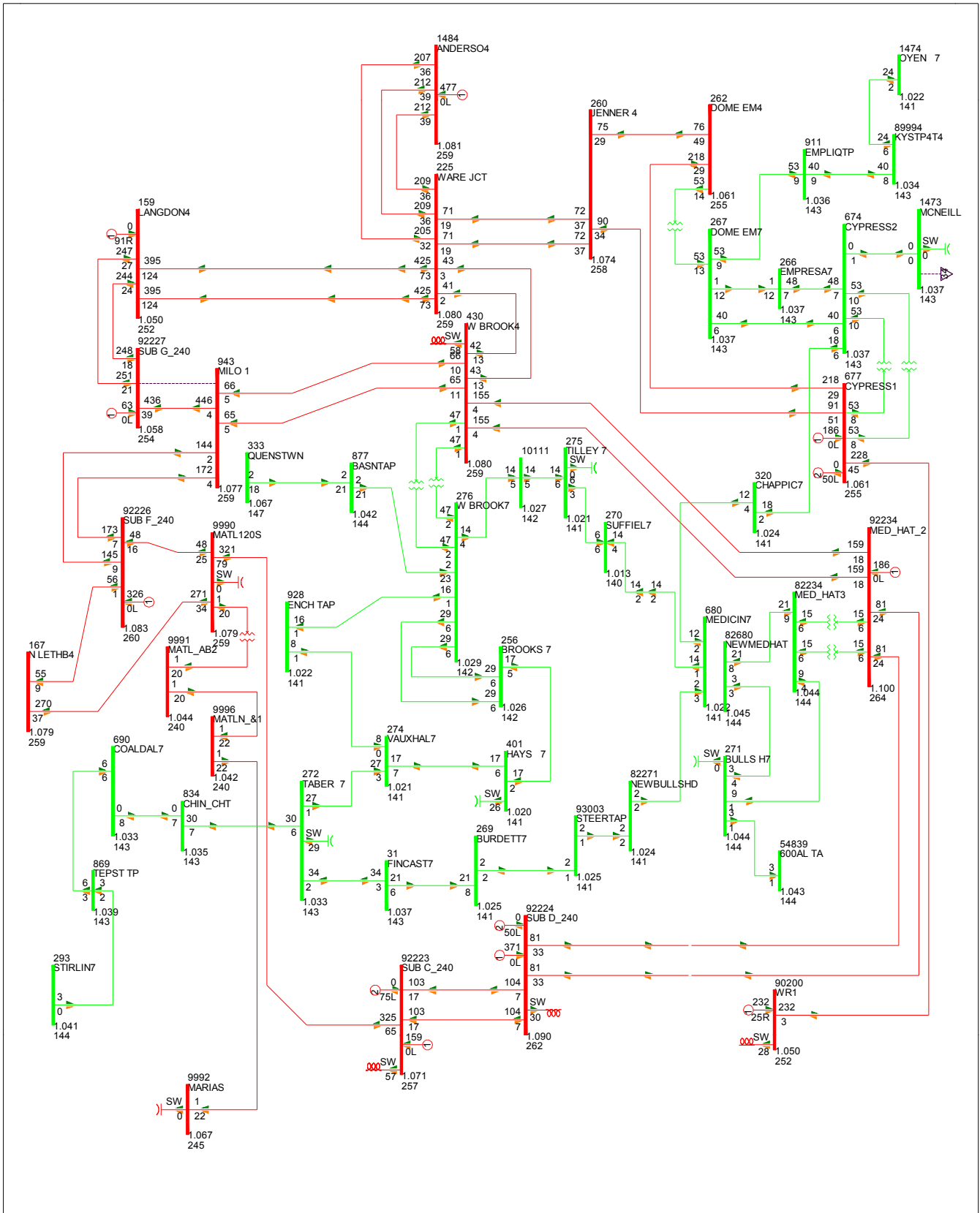


FIG 2017-1B-SL-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 986 MW

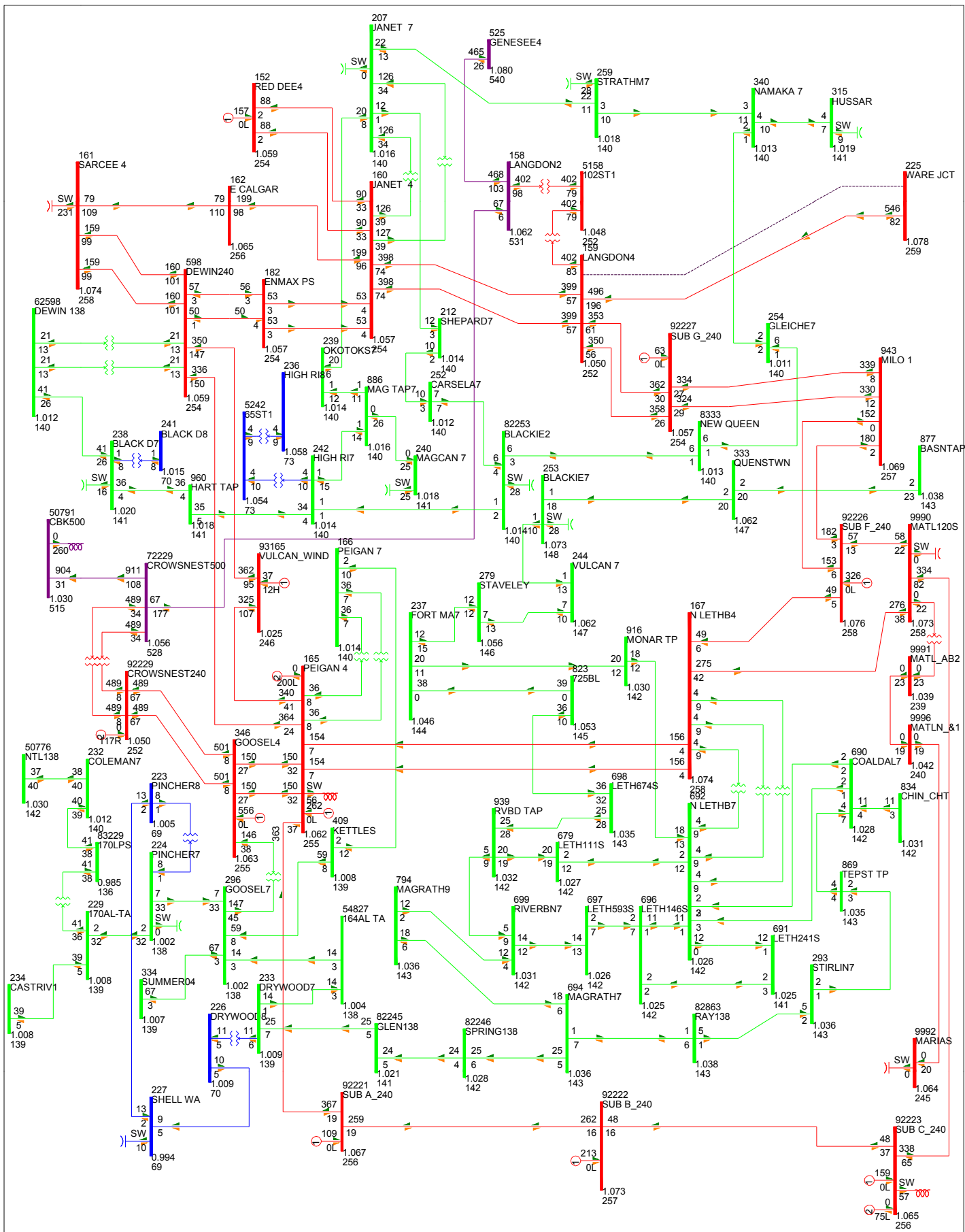


FIG 2017-1B-SL-18: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 970 MW

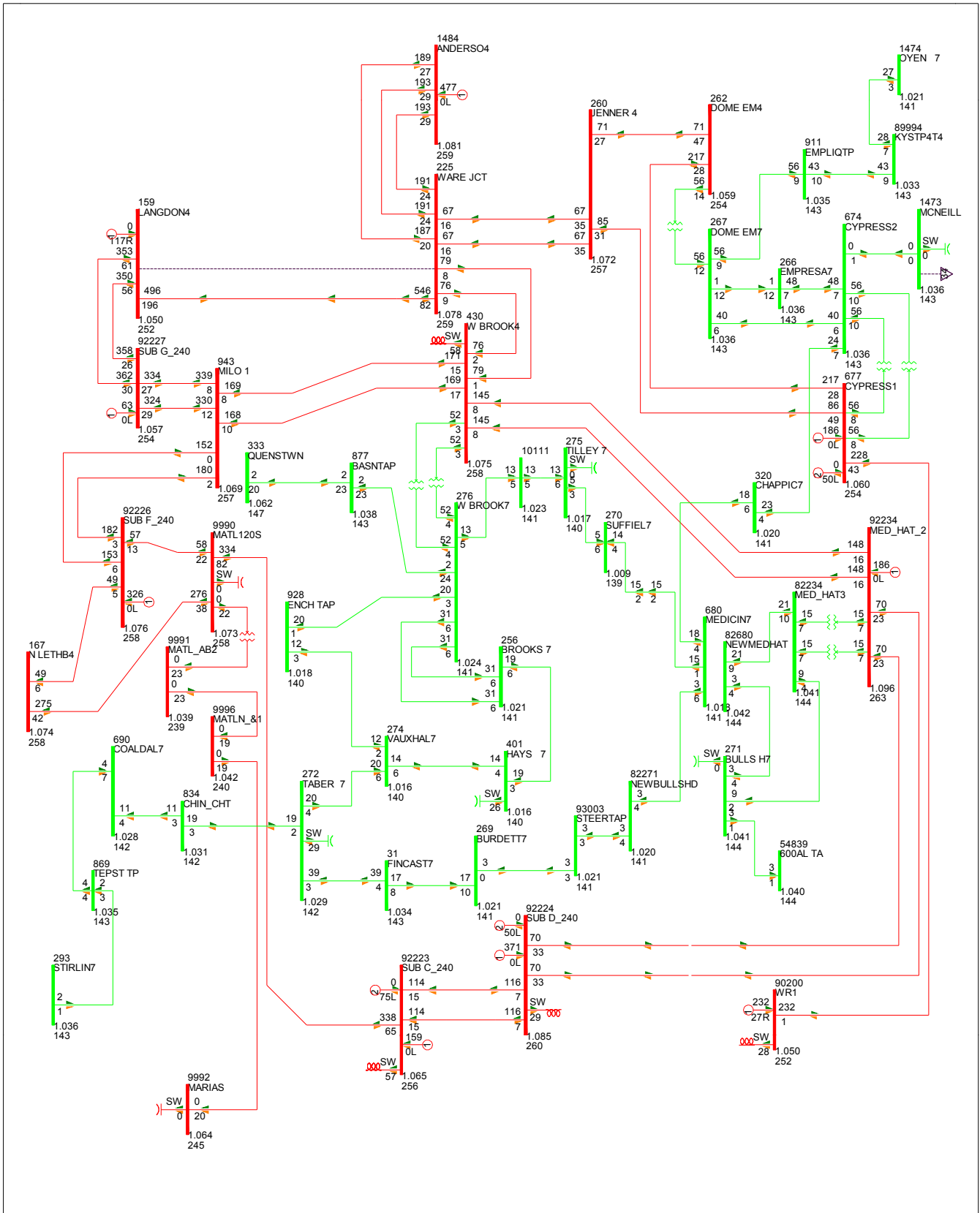


FIG 2017-1B-SL-19: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 970 MW

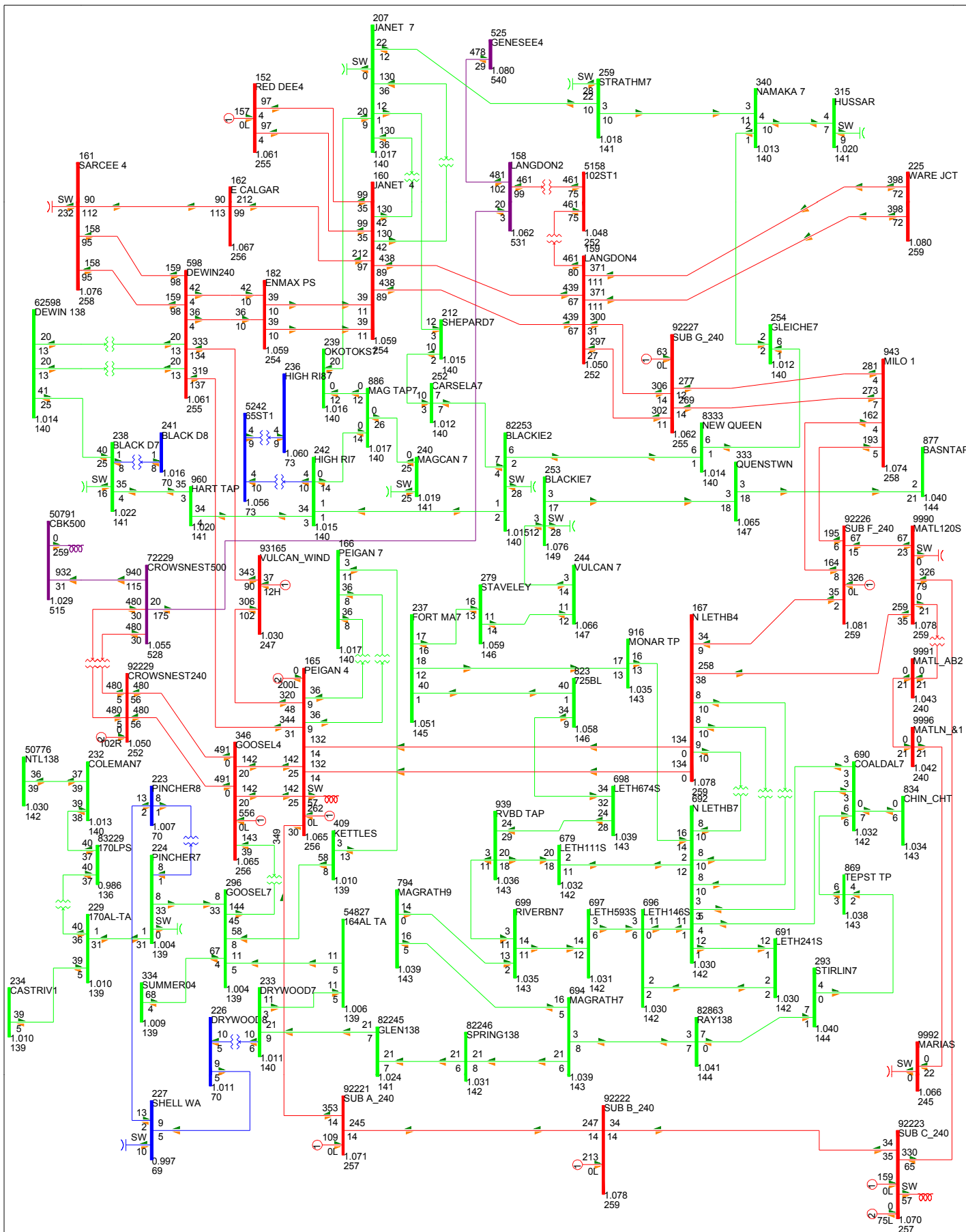


FIG 2017-1B-SL-20: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR

100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

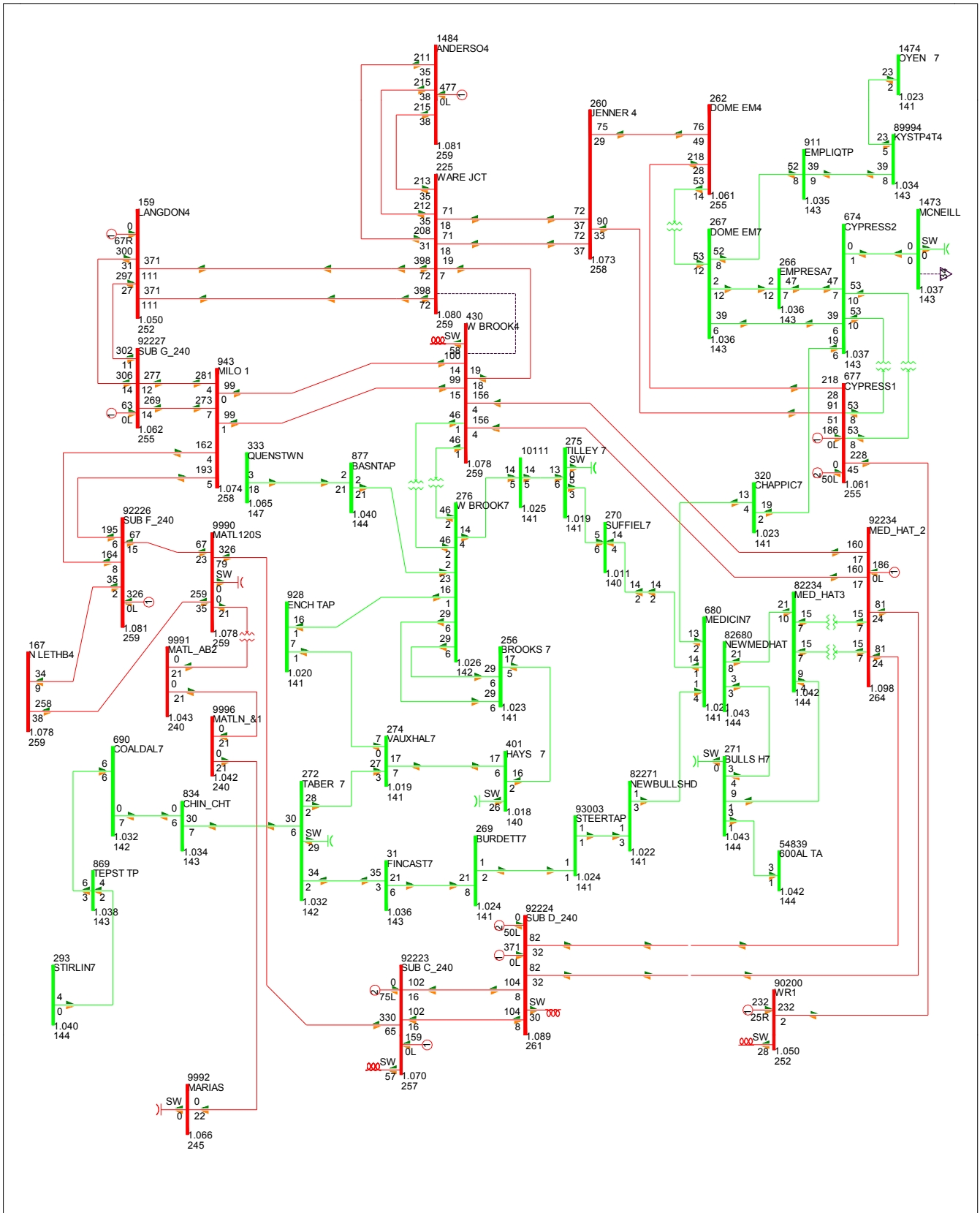


FIG 2017-1B-SL-21: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

GENERATION DISPATCH REPORT

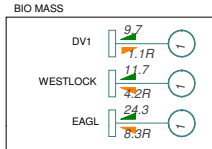
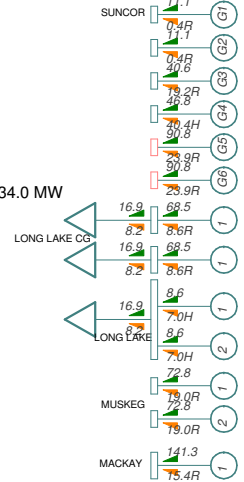
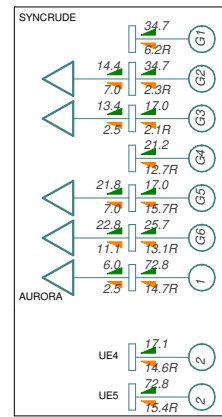
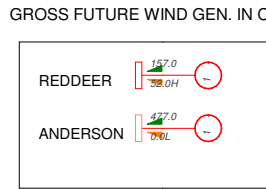
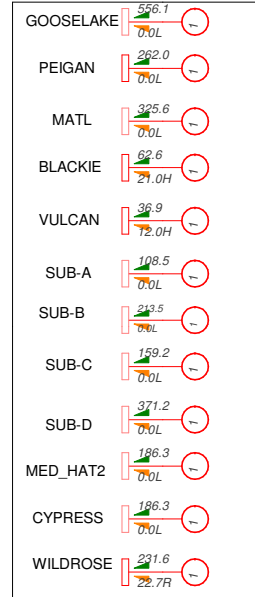
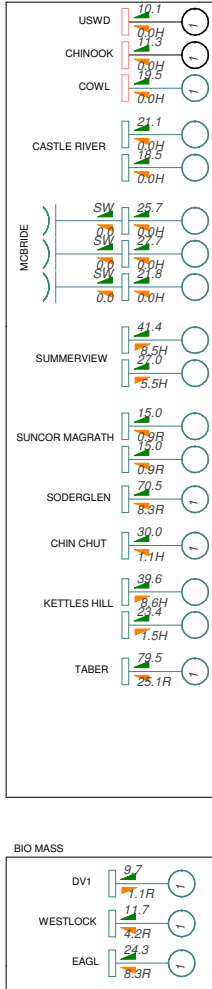
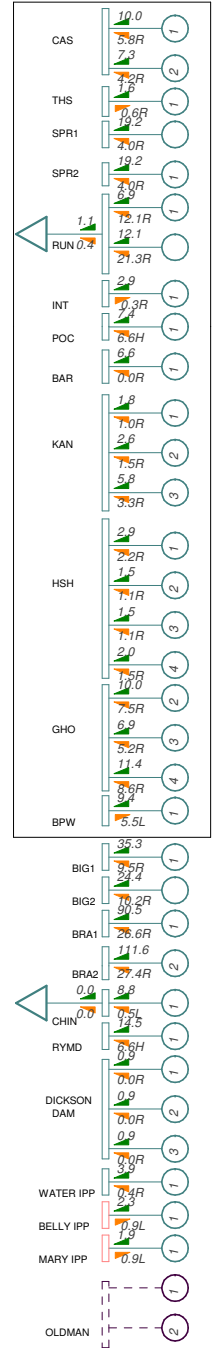
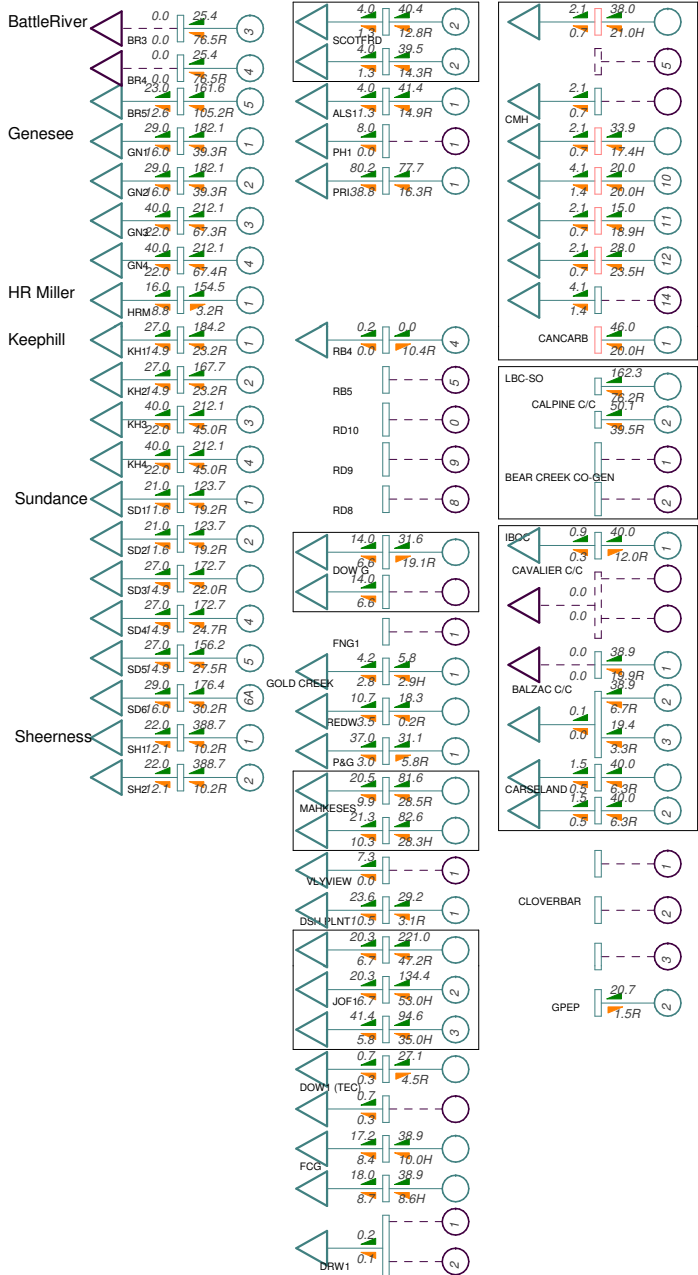
GROSS COAL GEN. 3634.3 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER PEAK CASE
MON, NOV 24 2008 14:43

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0%PATEA
1.050OV 0.950UV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1B-SP-1

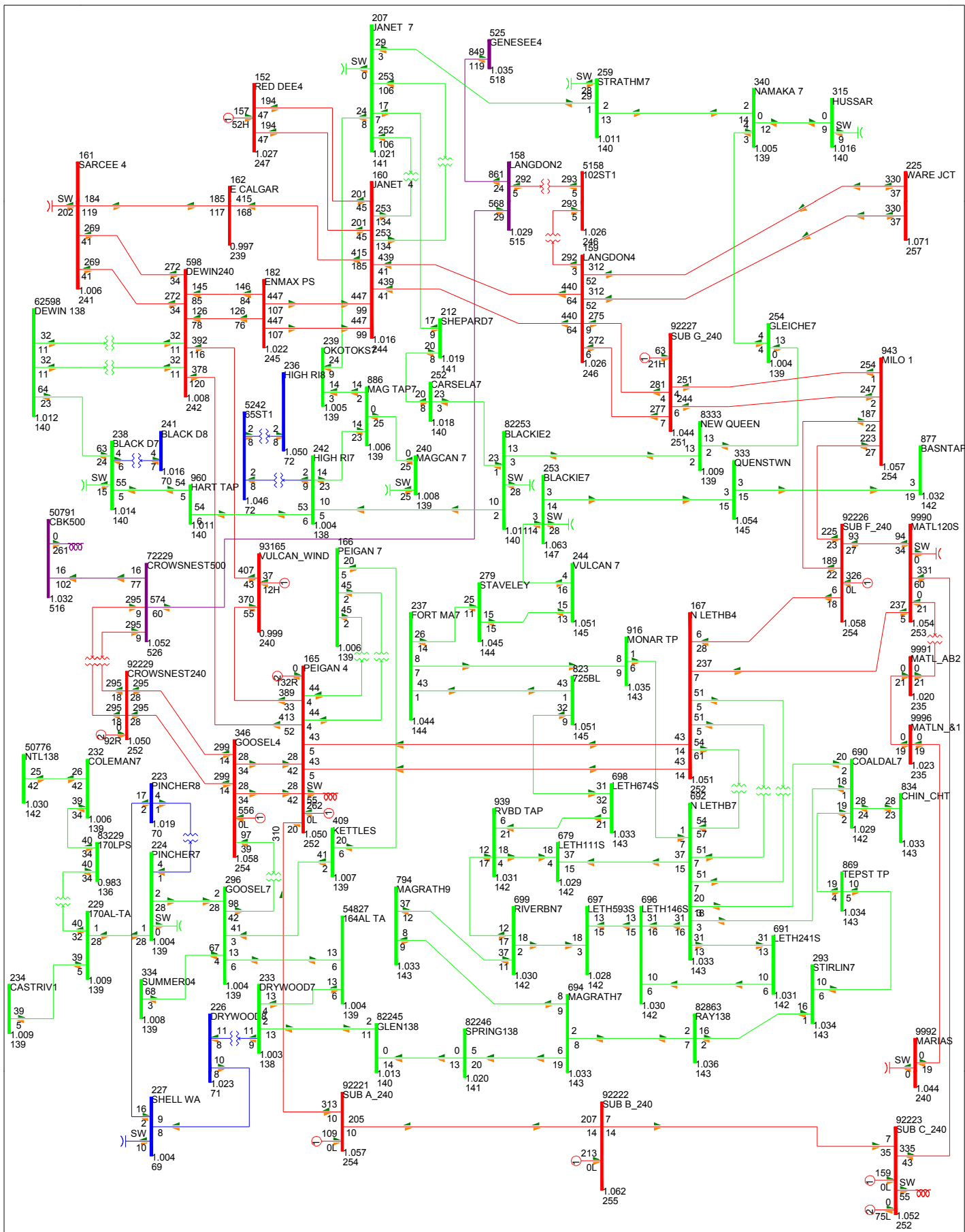


FIG 2017-1B-SP-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 11 MW

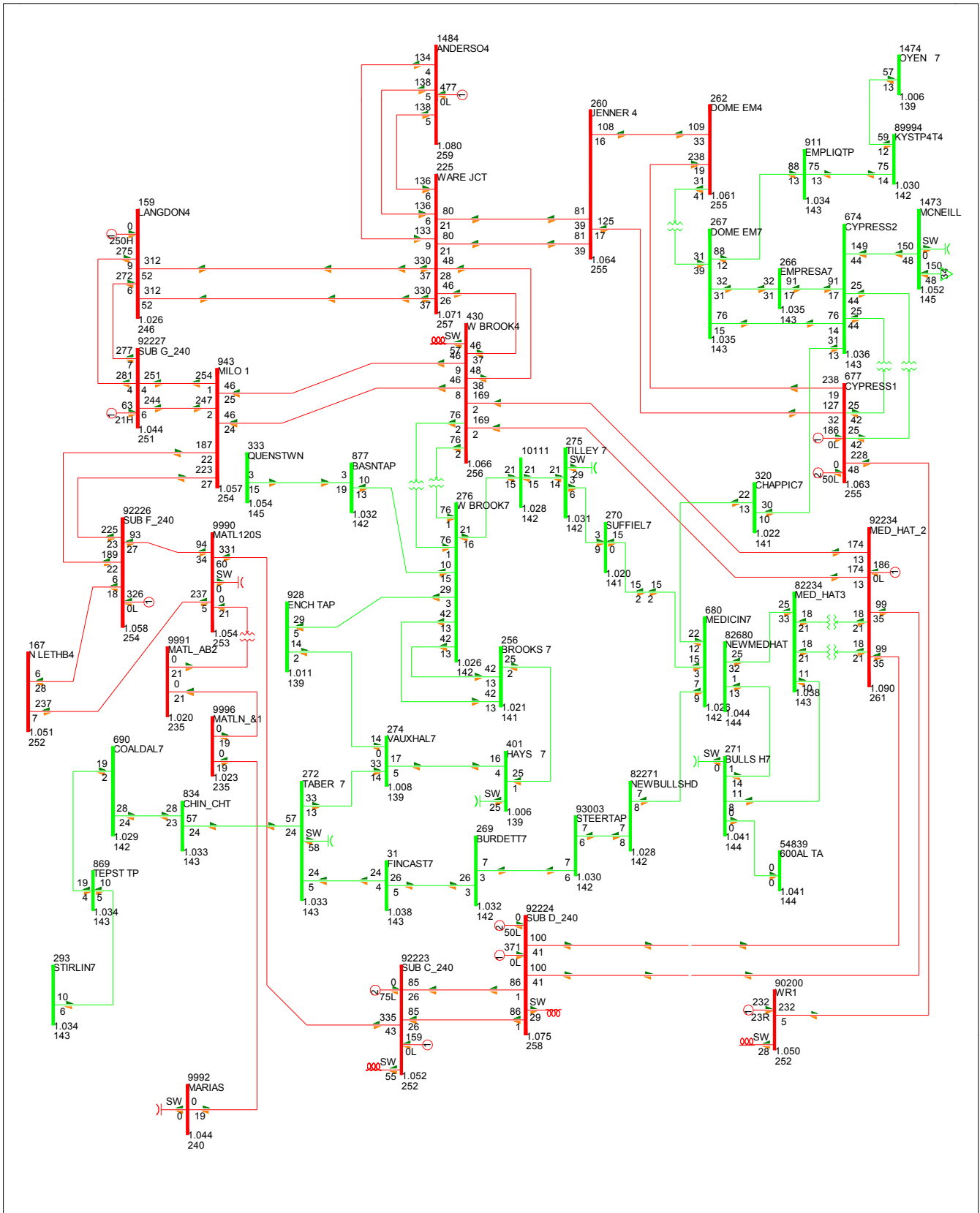


FIG 2017-1B-SP-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 11 MW

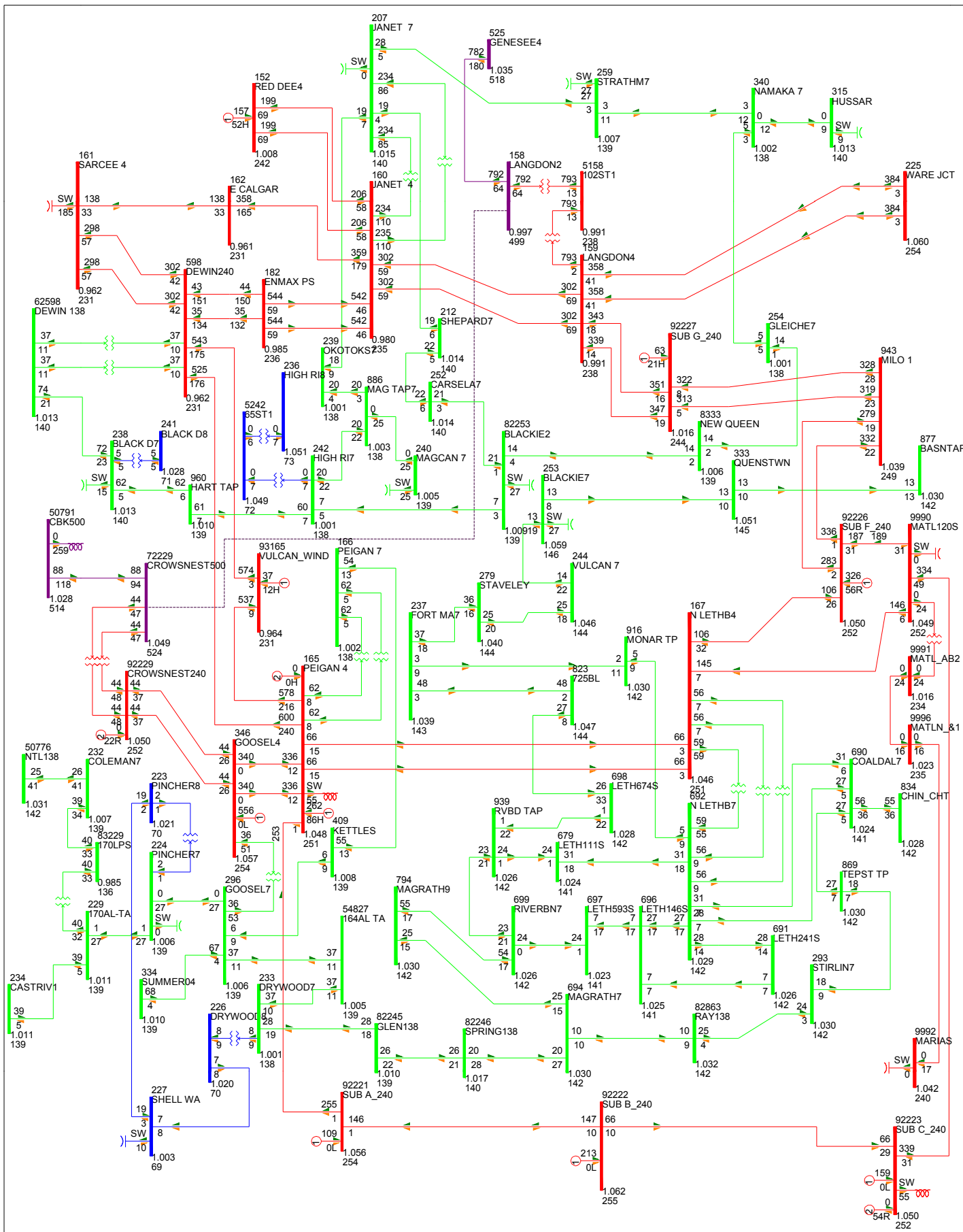


FIG 2017-1B-SP-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:12

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -136 MW

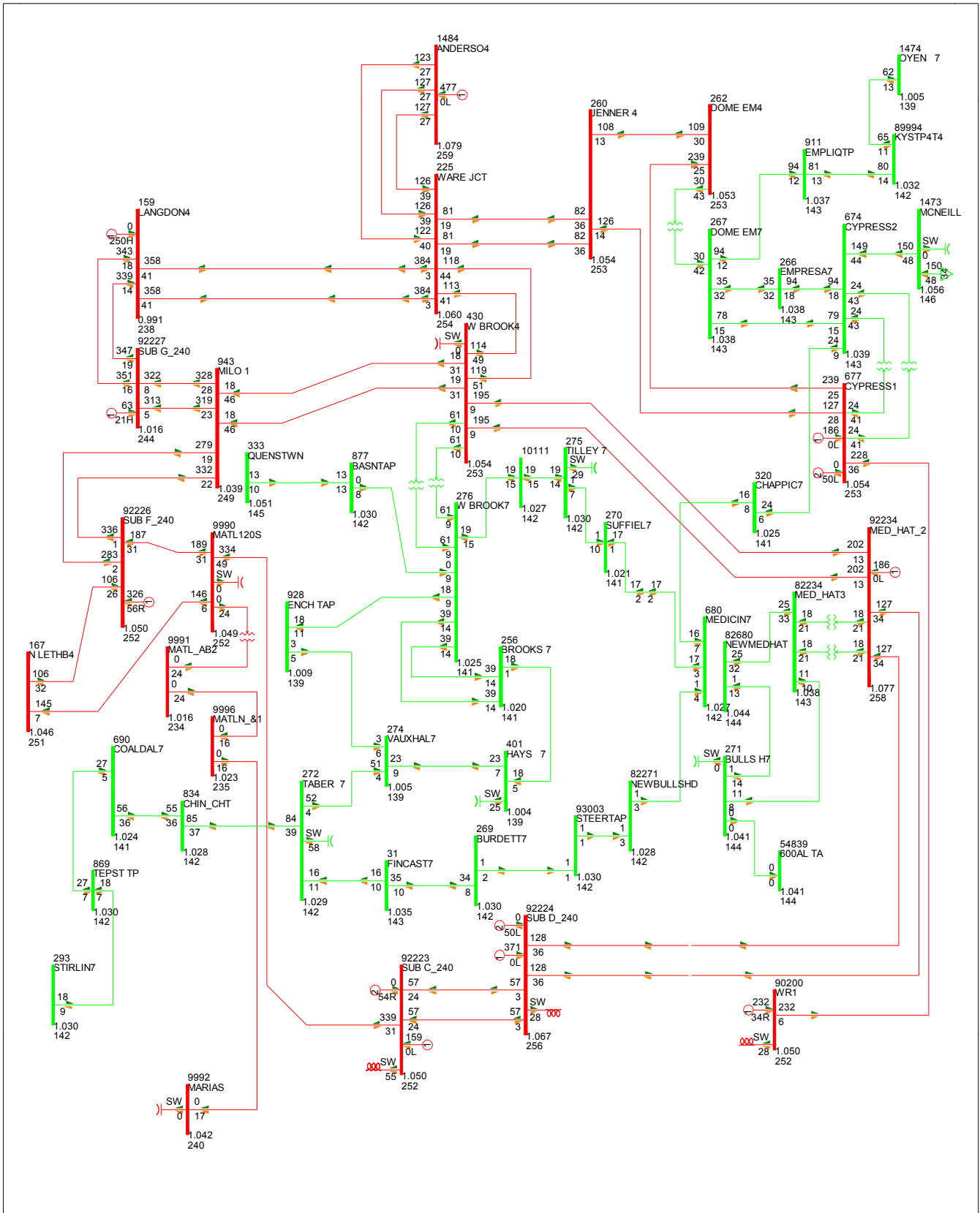


FIG 2017-1B-SP-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:12

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -136 MW

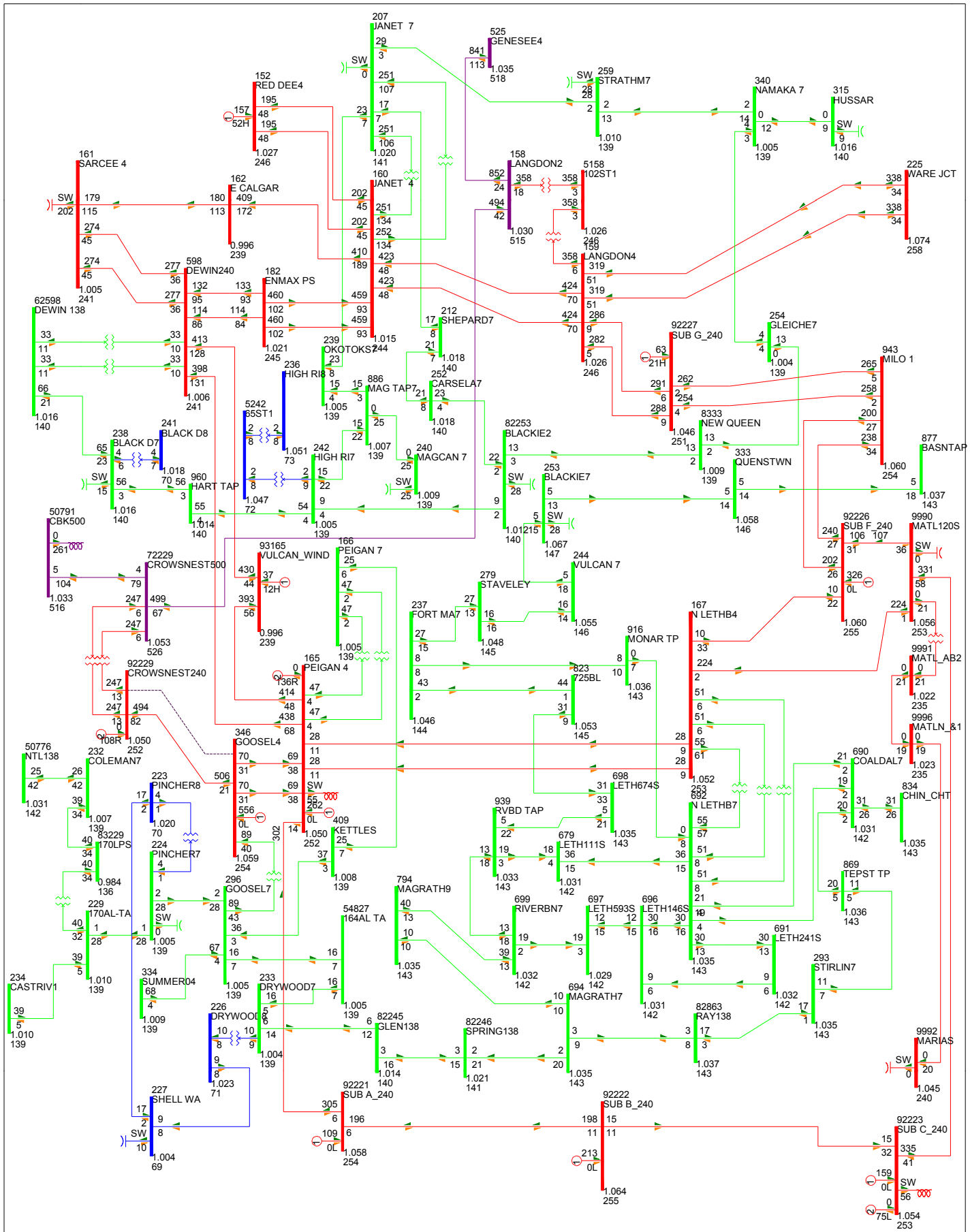


FIG 2017-1B-SP-6: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -6 MW

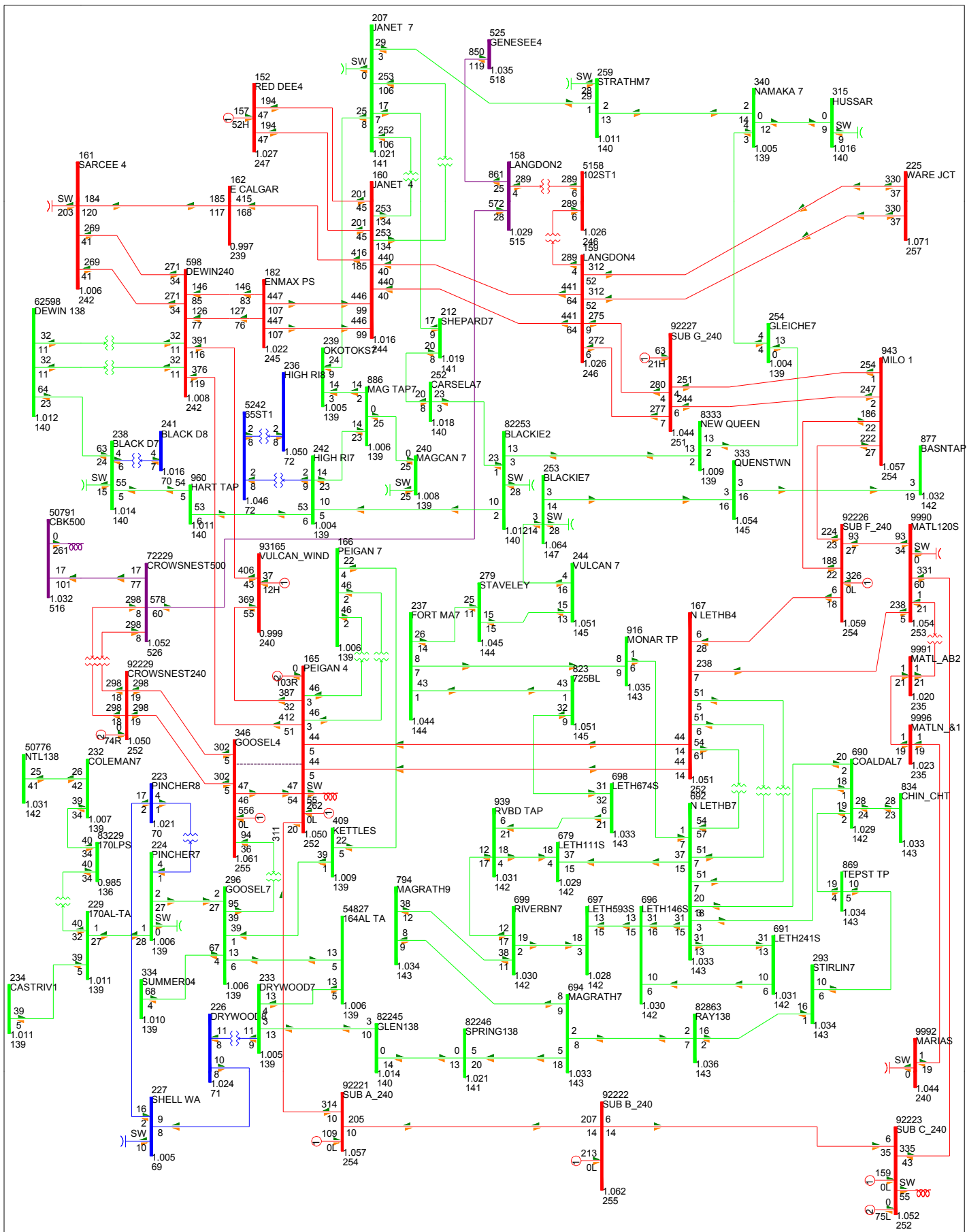


FIG 2017-1B-SP-8: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 13 MW

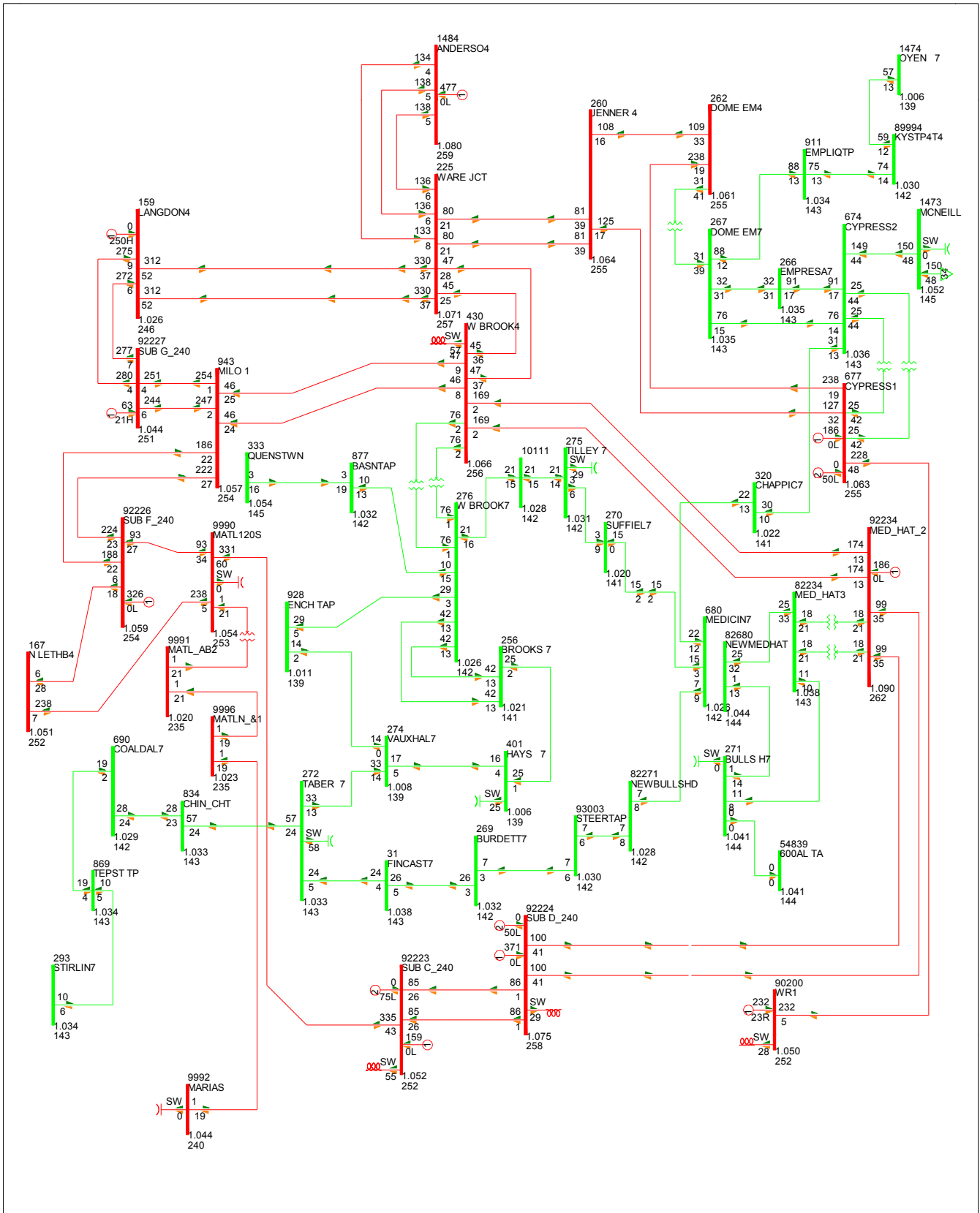


FIG 2017-1B-SP-9: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000
 BC Export: 13 MW

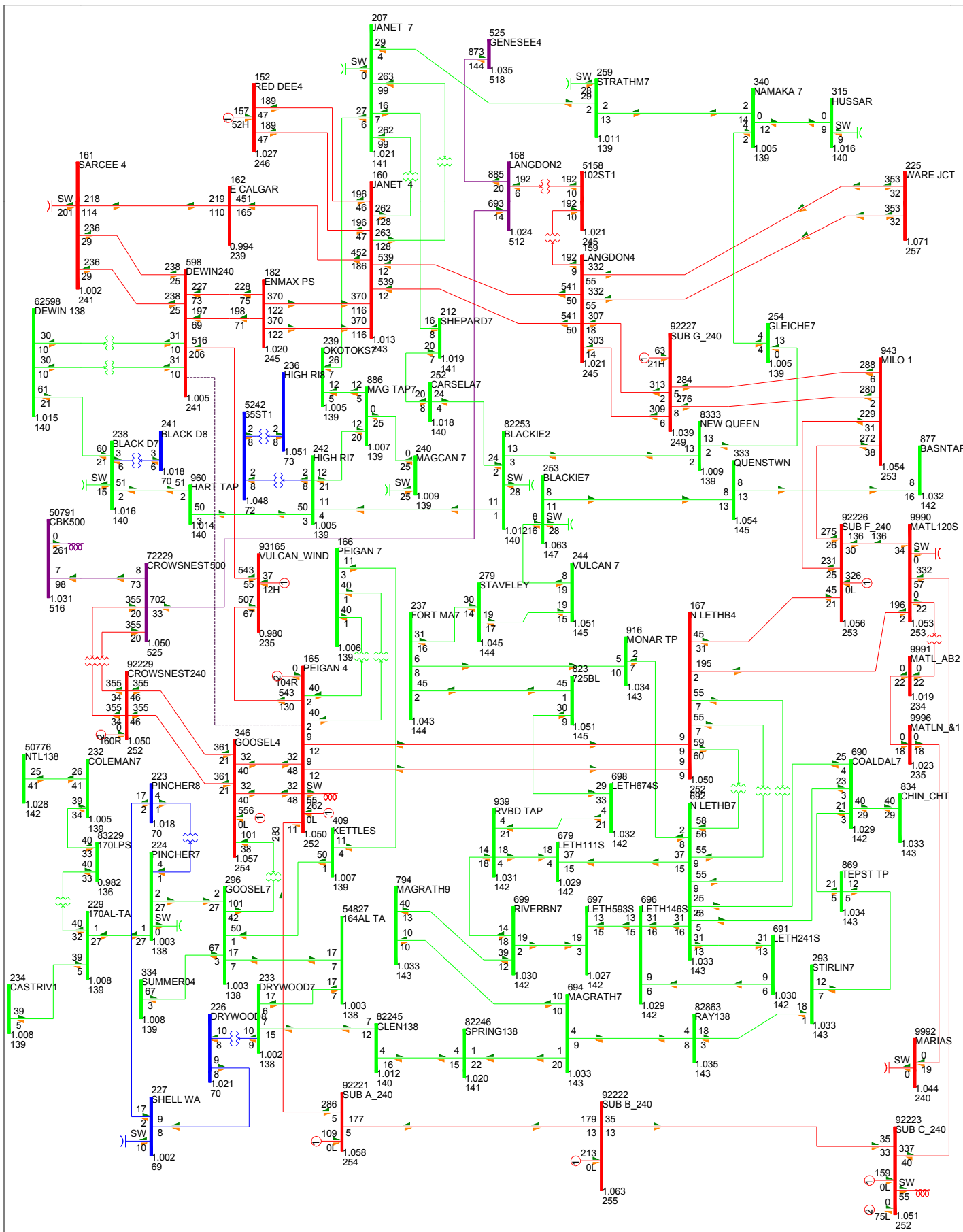


FIG 2017-1B-SP-10: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -4 MW

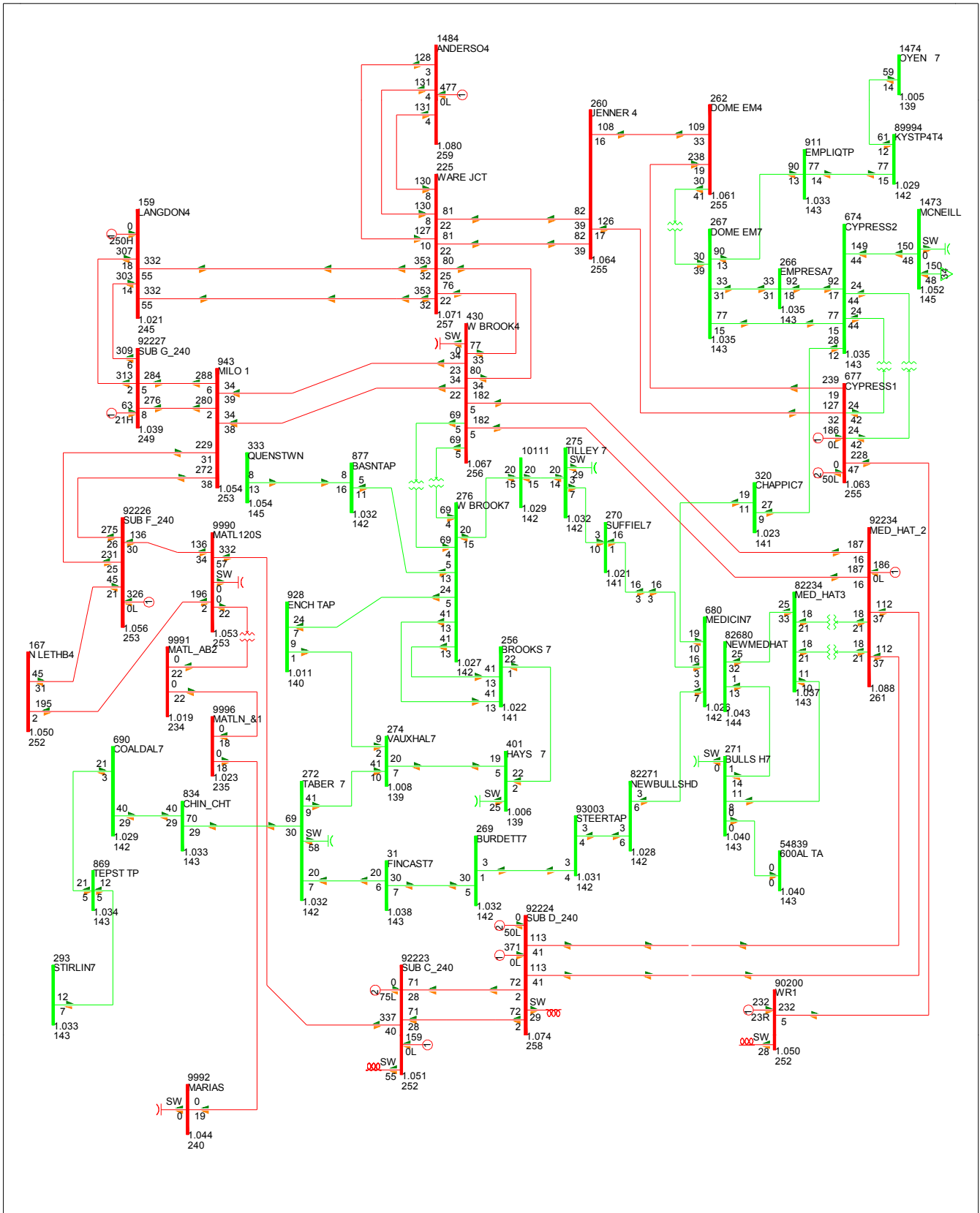


FIG 2017-1B-SP-11: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -4 MW

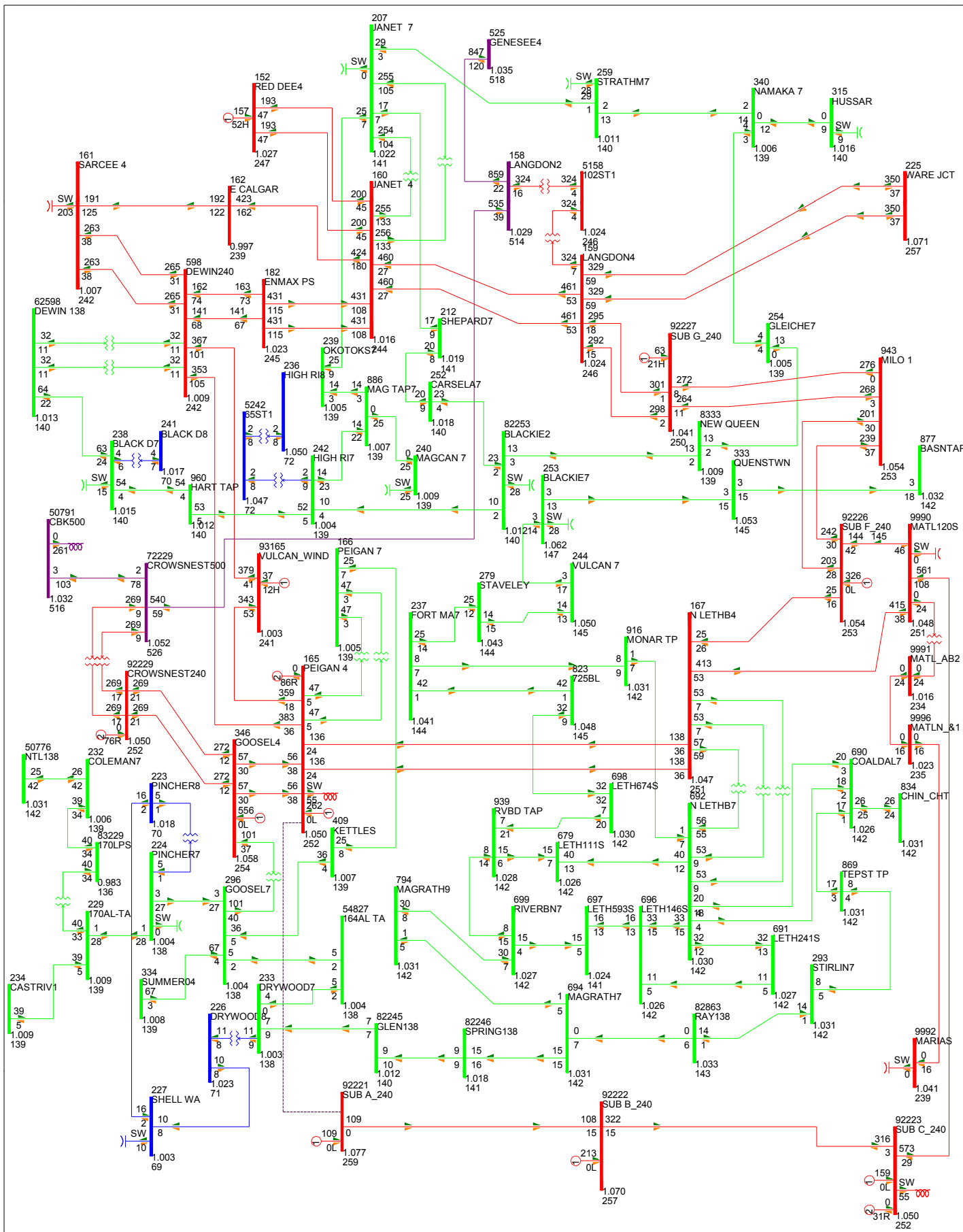


FIG 2017-1B-SP-12: PEIGAN TO SUB A 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATEA

KV: <=34.500 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -6 MW

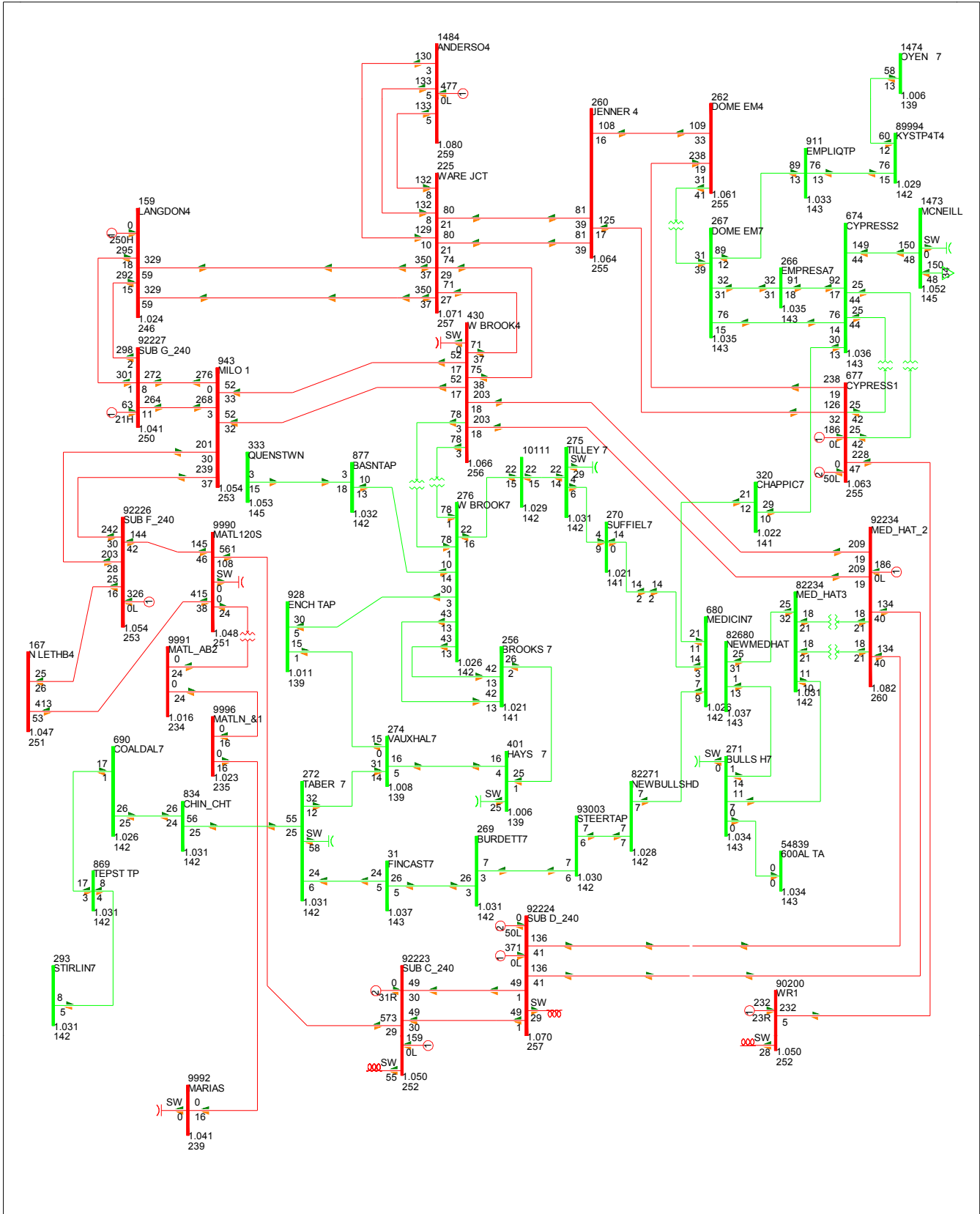


FIG 2017-1B-SP-13: PEIGAN TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000
 BC Export: -6 MW

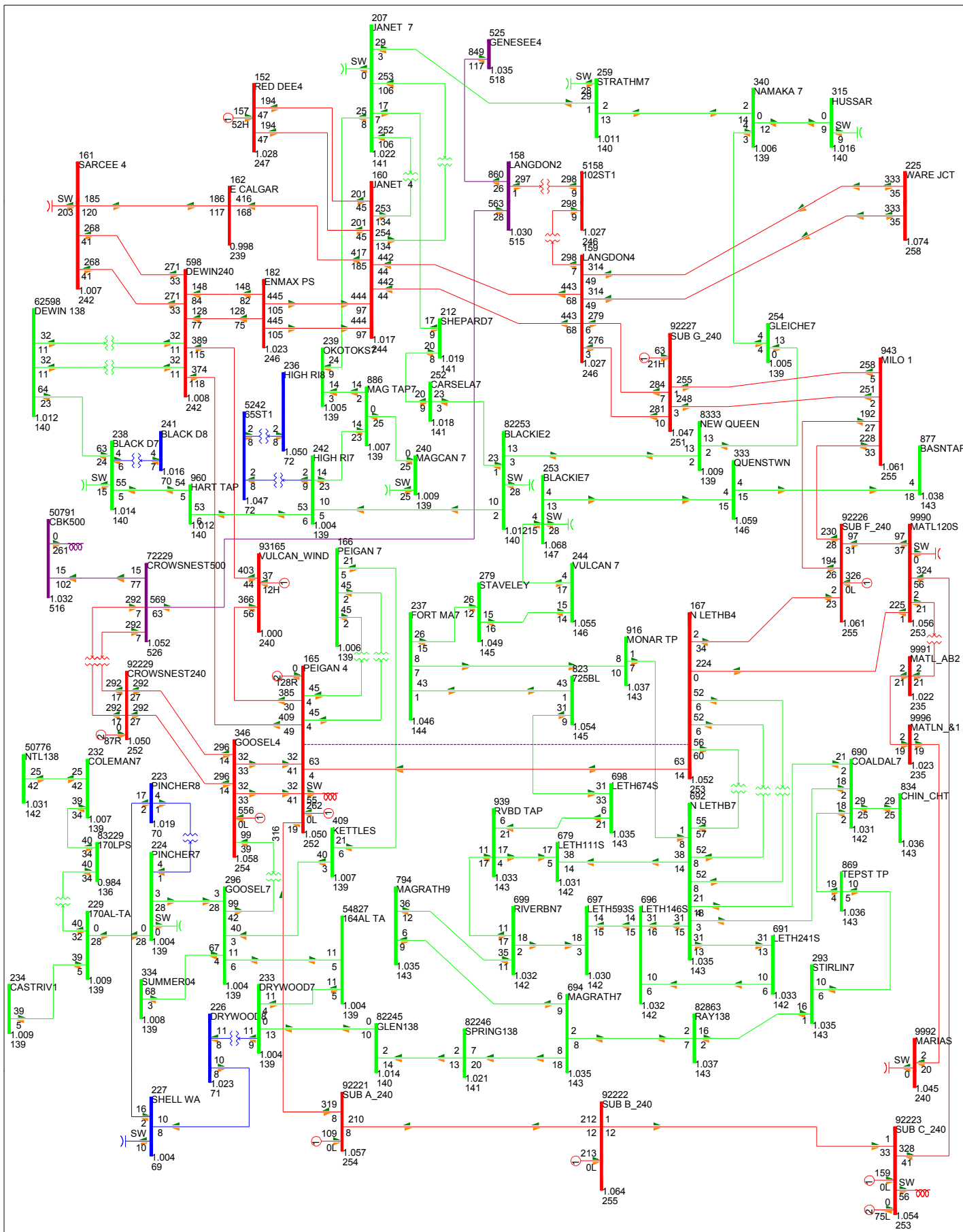


FIG 2017-1B-SP-14: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 11 MW

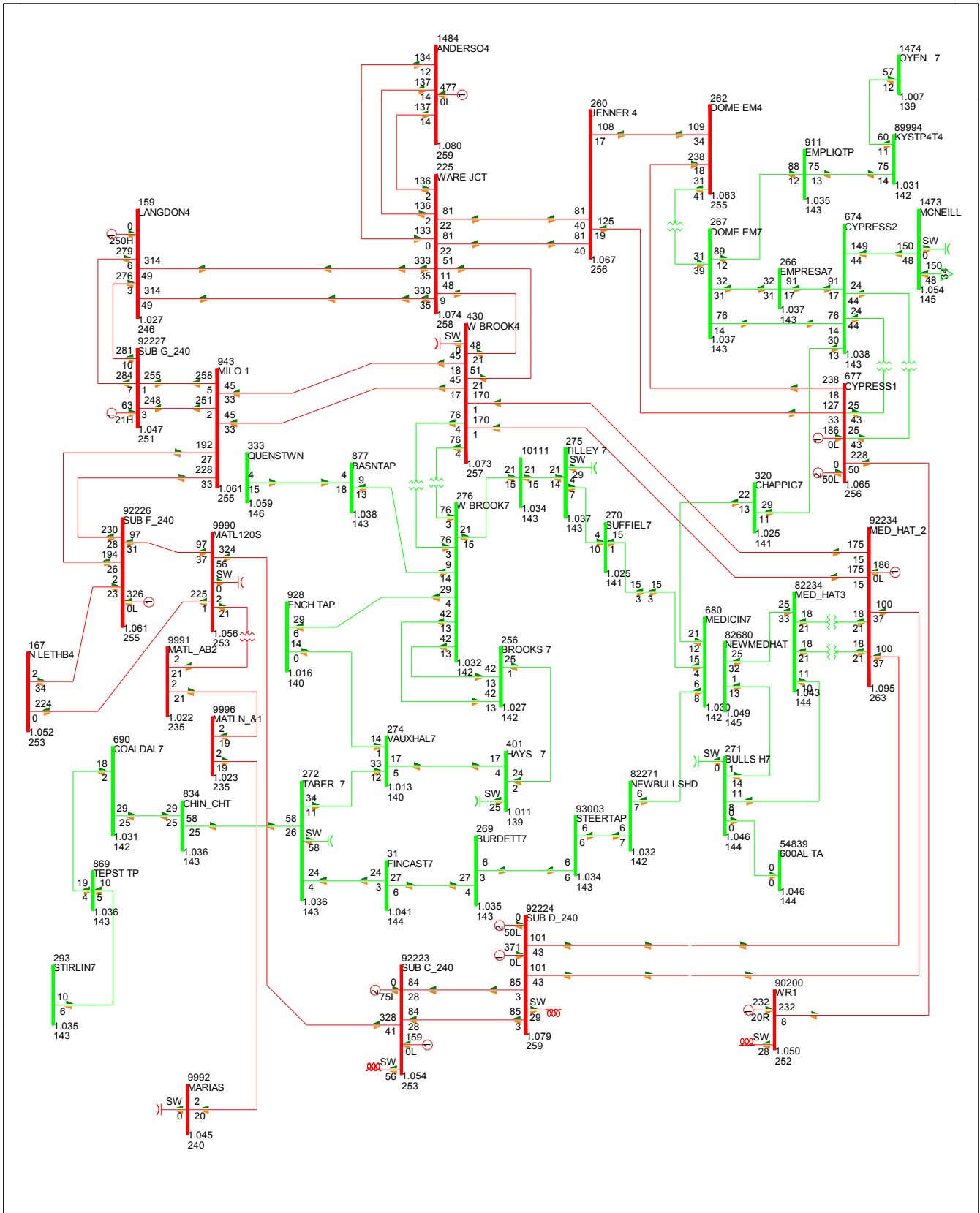


FIG 2017-1B-SP-15: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 11 MW

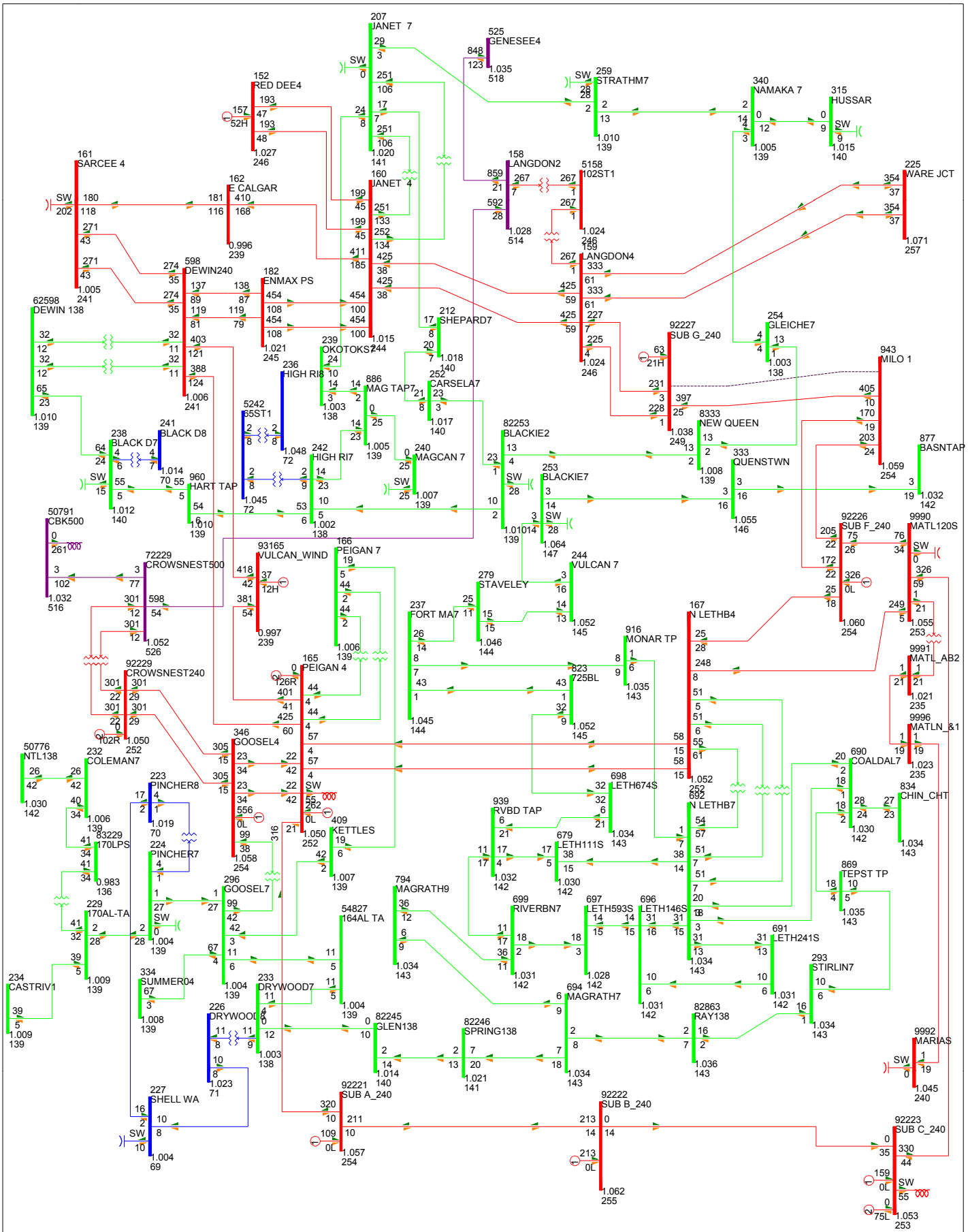


FIG 2017-1B-SP-16: MILO TO SUB G 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -2 MW

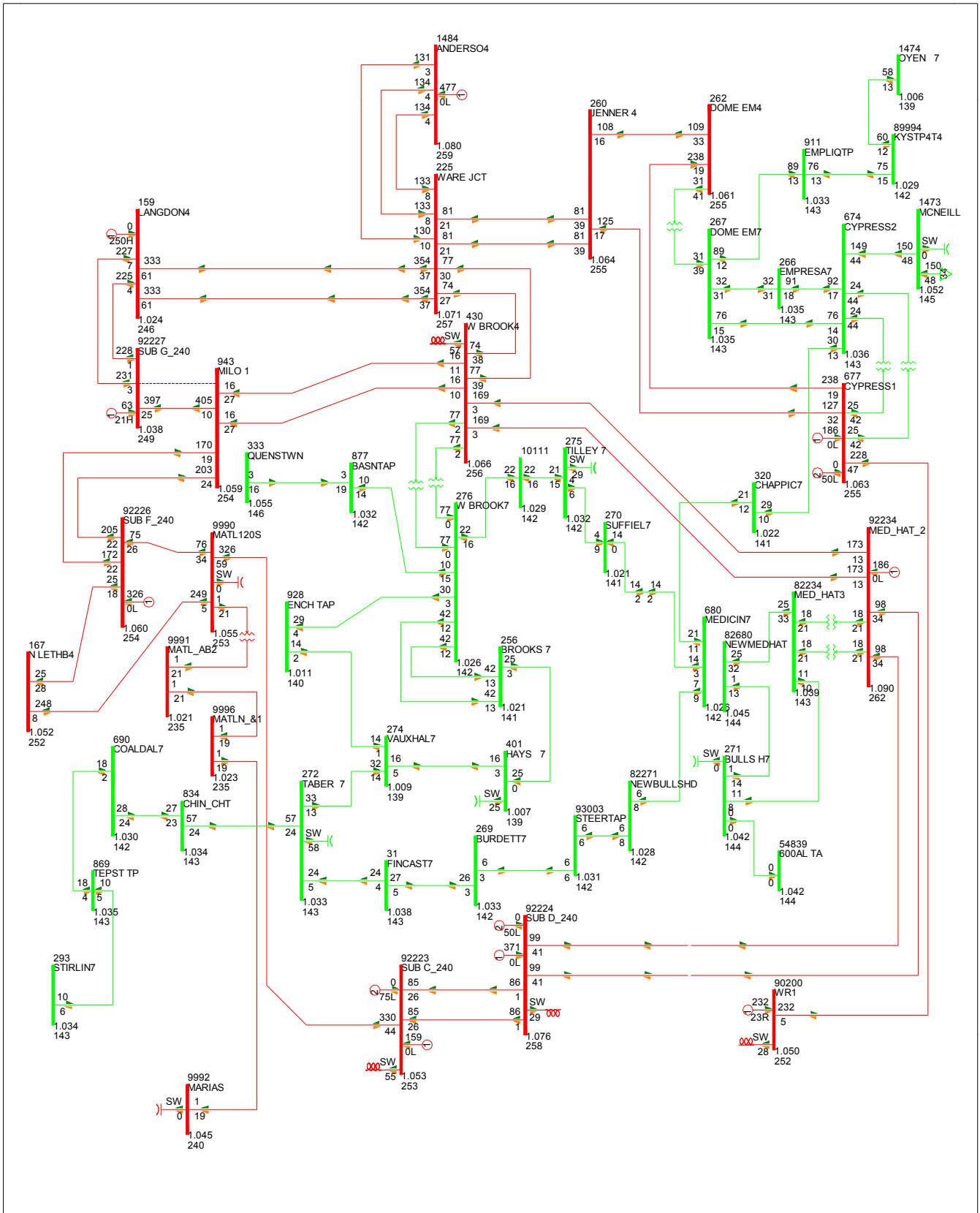


FIG 2017-1B-SP-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -2 MW

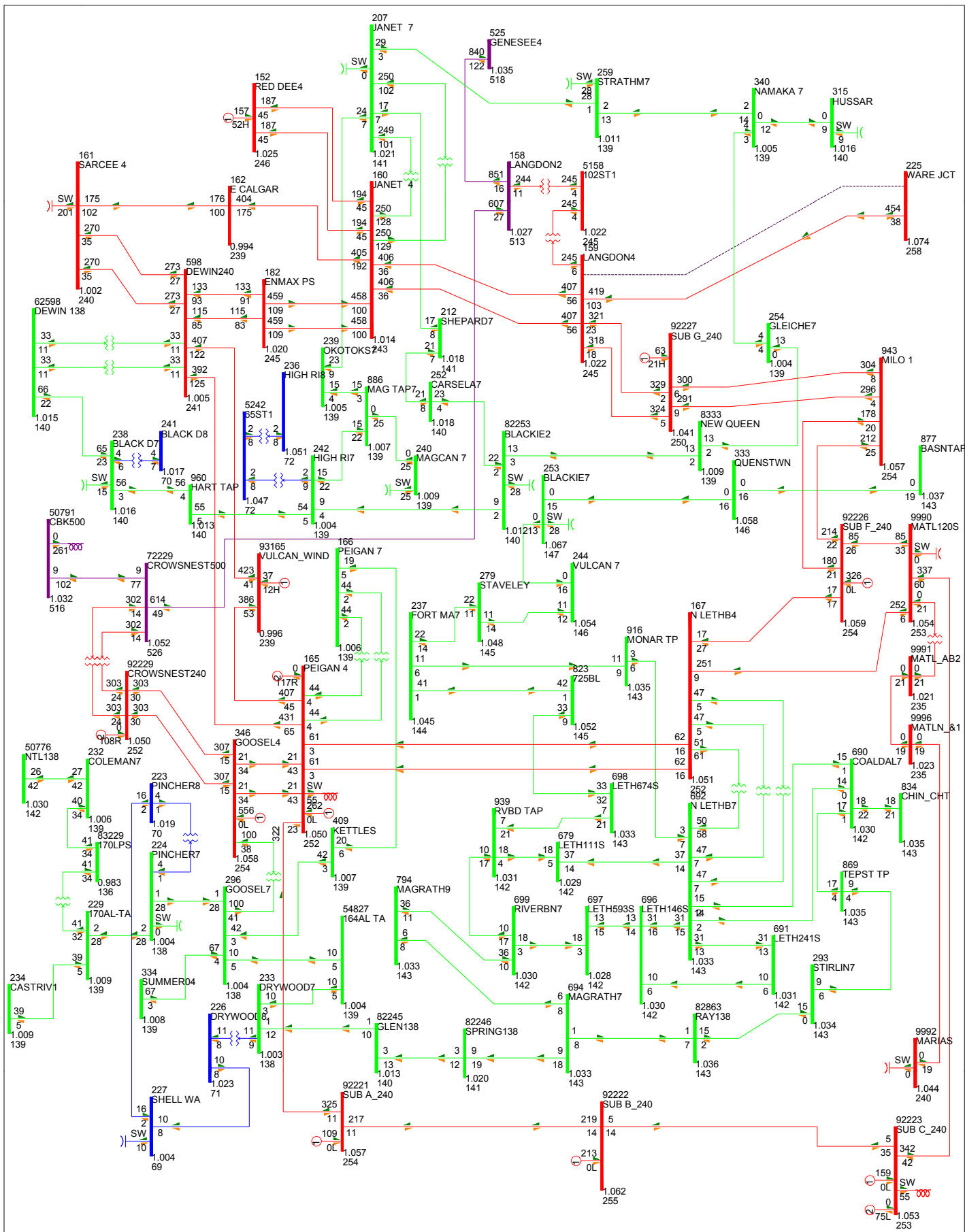


FIG 2017-1B-SP-18: WAREJUNC TO LANGDON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -14 MW

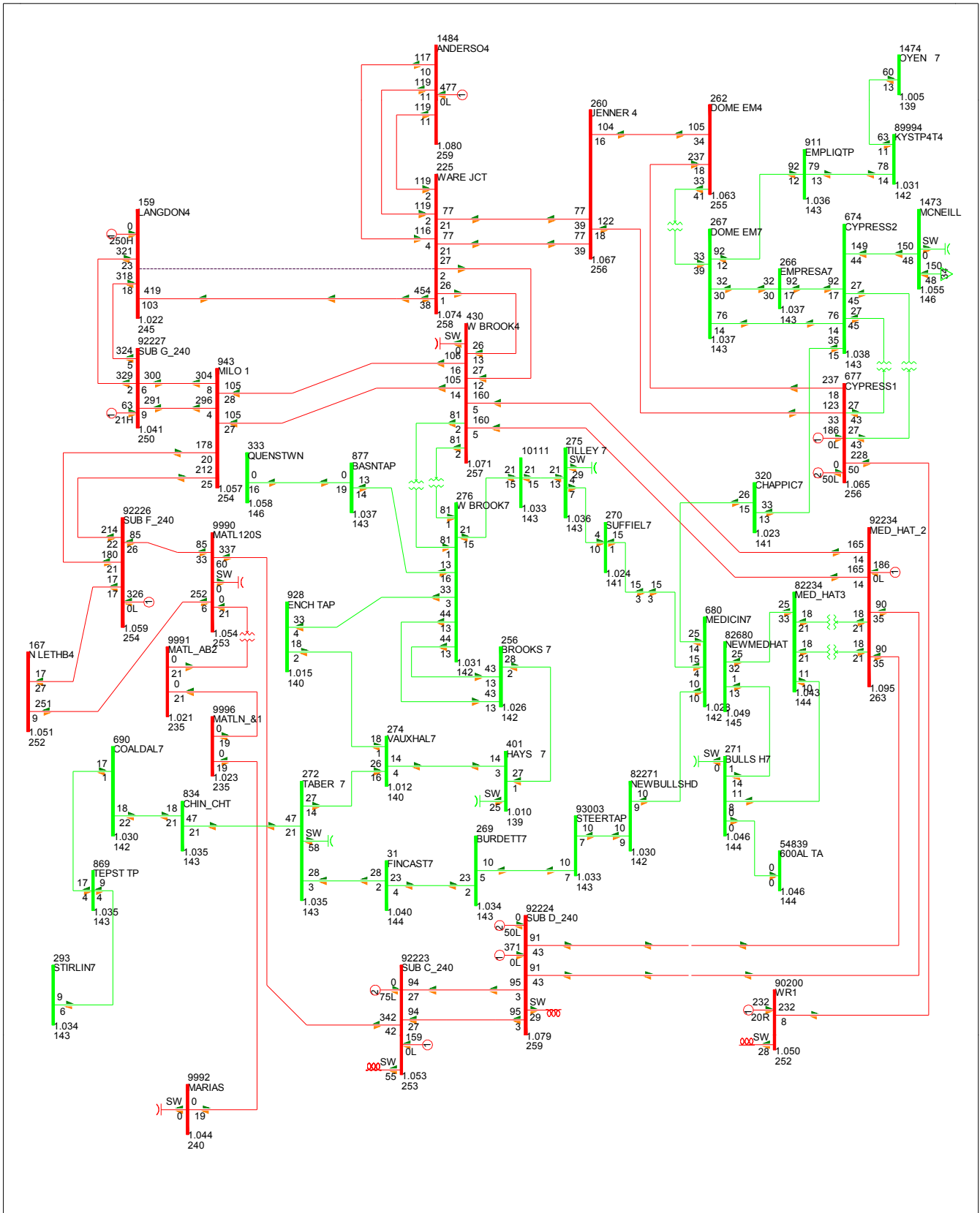


FIG 2017-1B-SP-19: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000
 BC Export: -14 MW

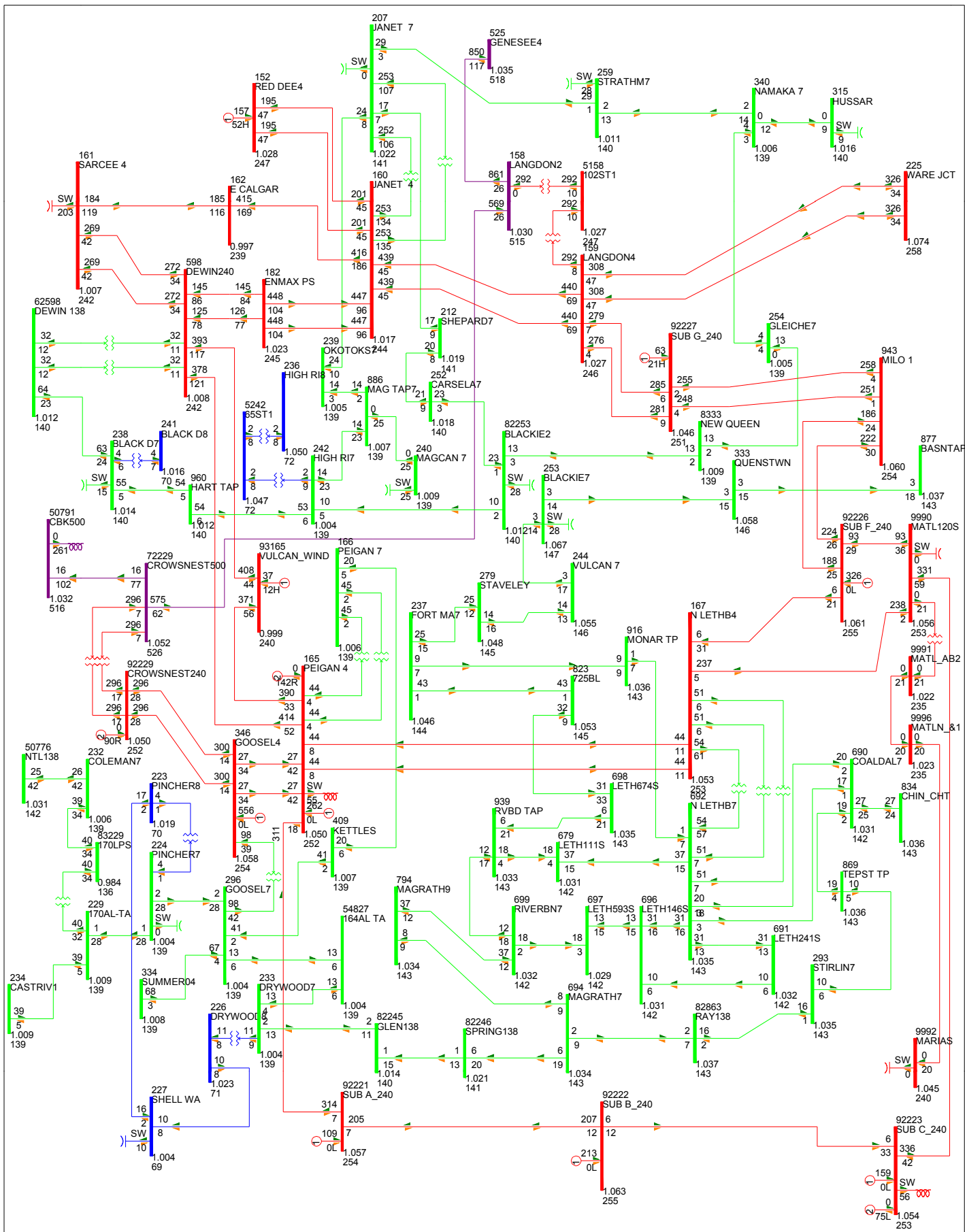


FIG 2017-1B-SP-20: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 12 MW

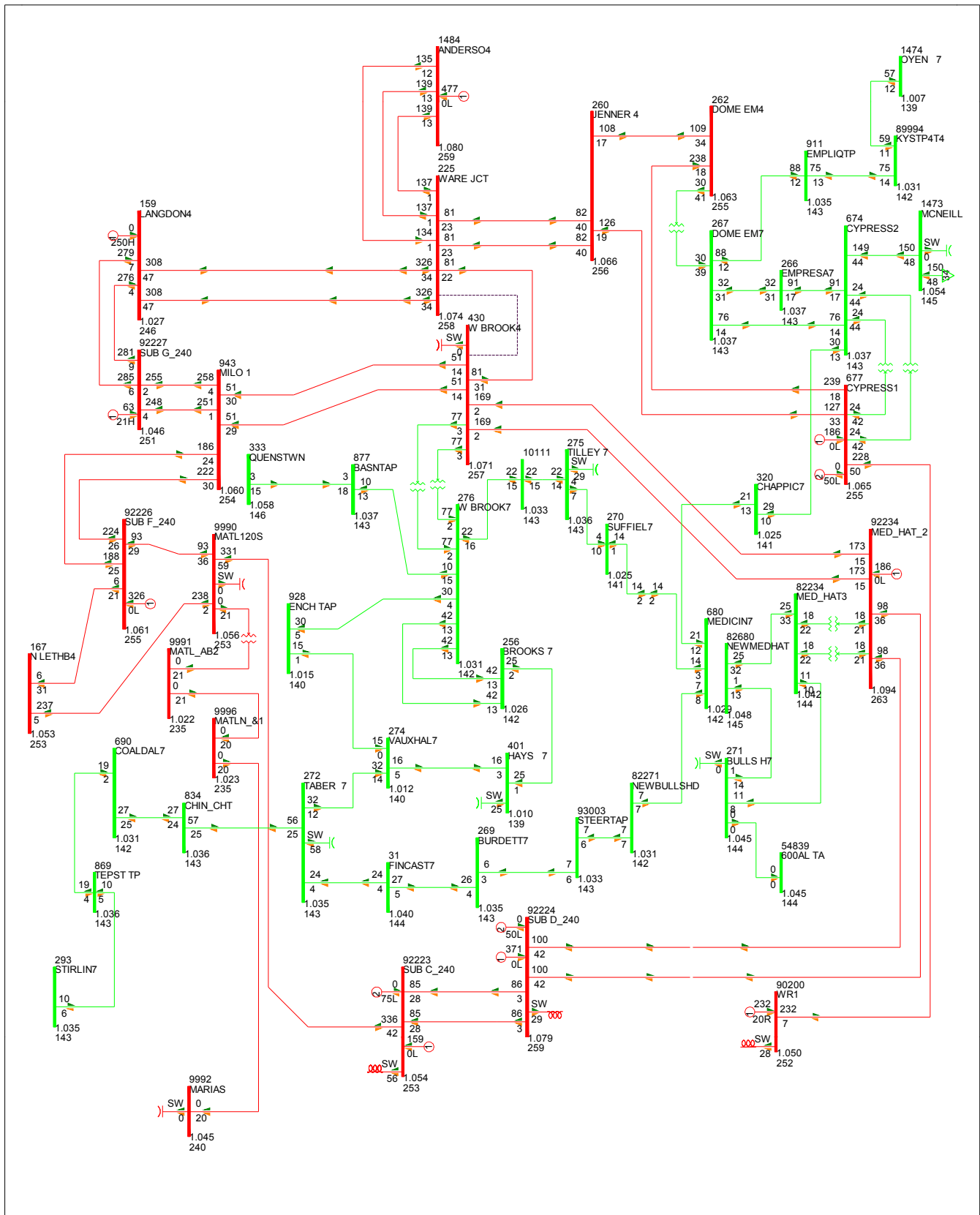


FIG 2017-1B-SP-21: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1B

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 12 MW

GENERATION DISPATCH REPORT

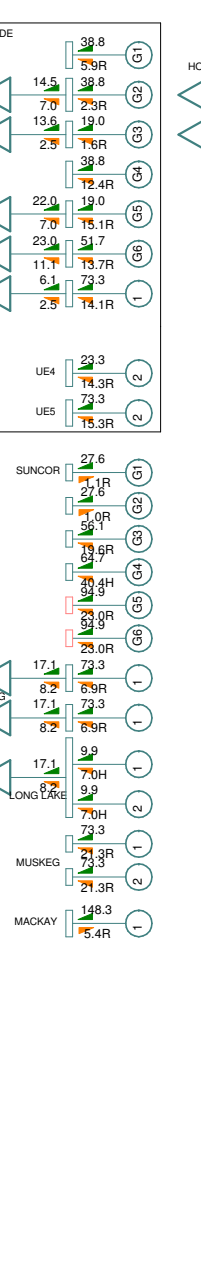
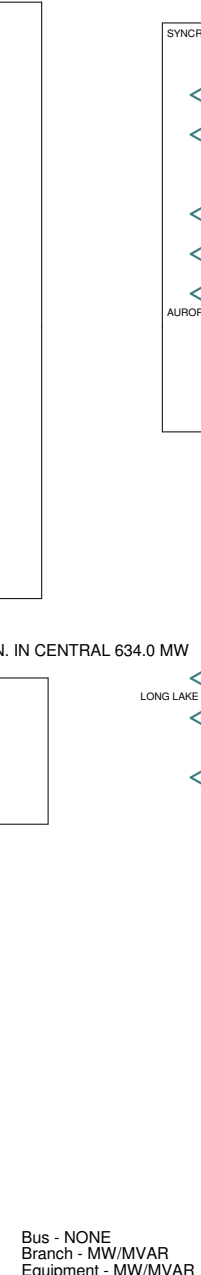
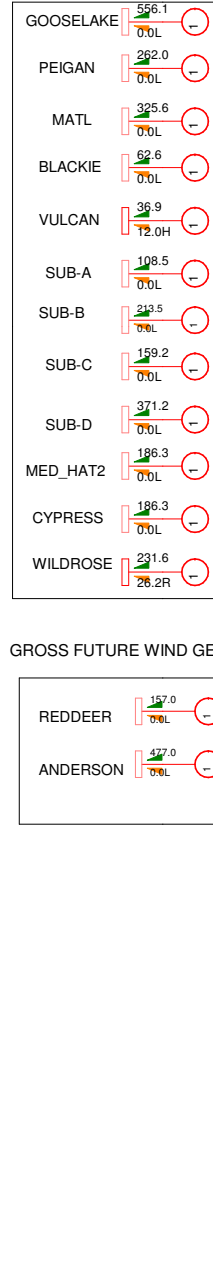
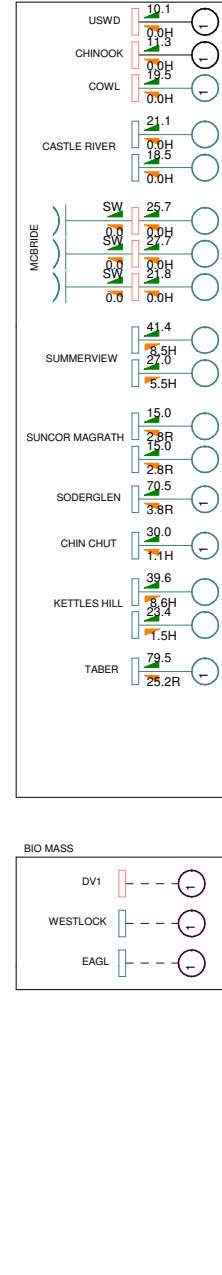
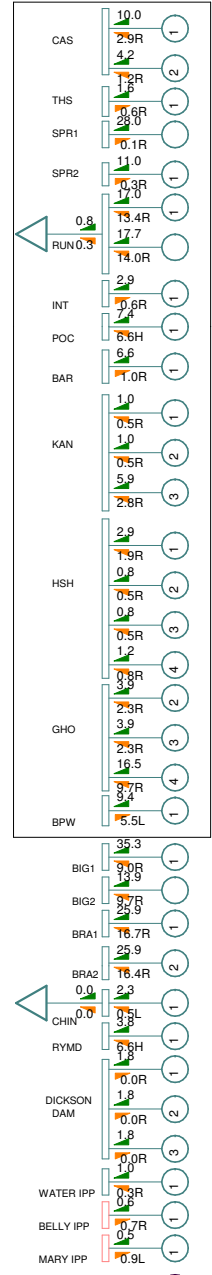
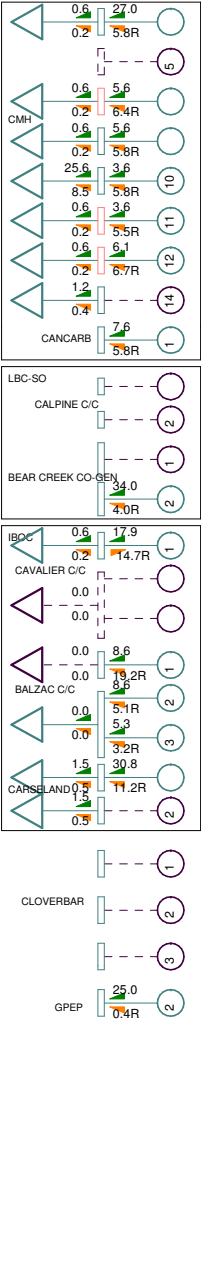
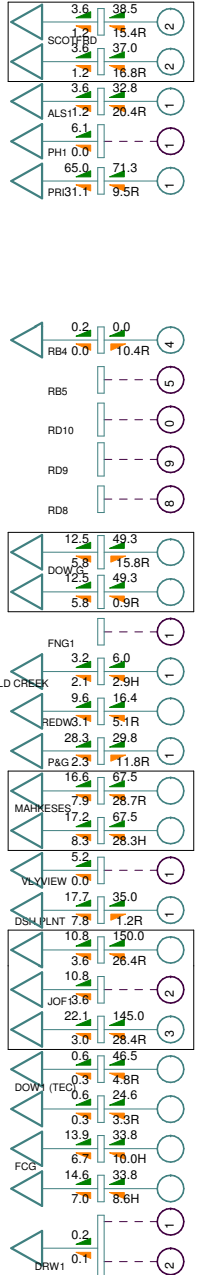
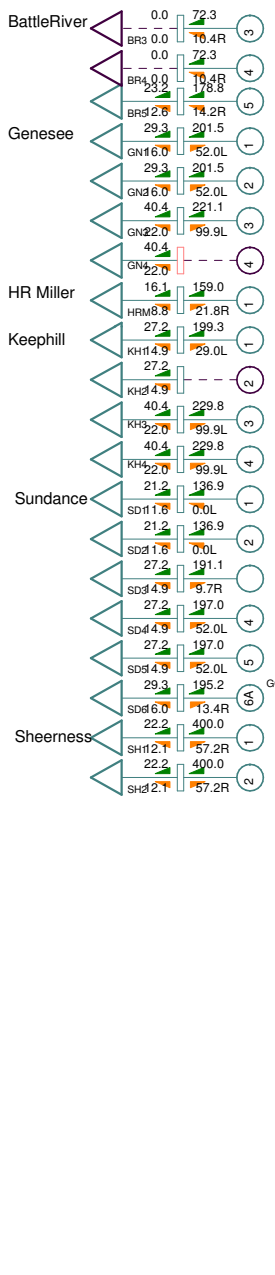
GROSS COAL GEN. 3619.6 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER LIGHT CASE
MON, NOV 24 2008 14:46

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0%PATEA
1.050OV 0.950UV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1C-SL-1

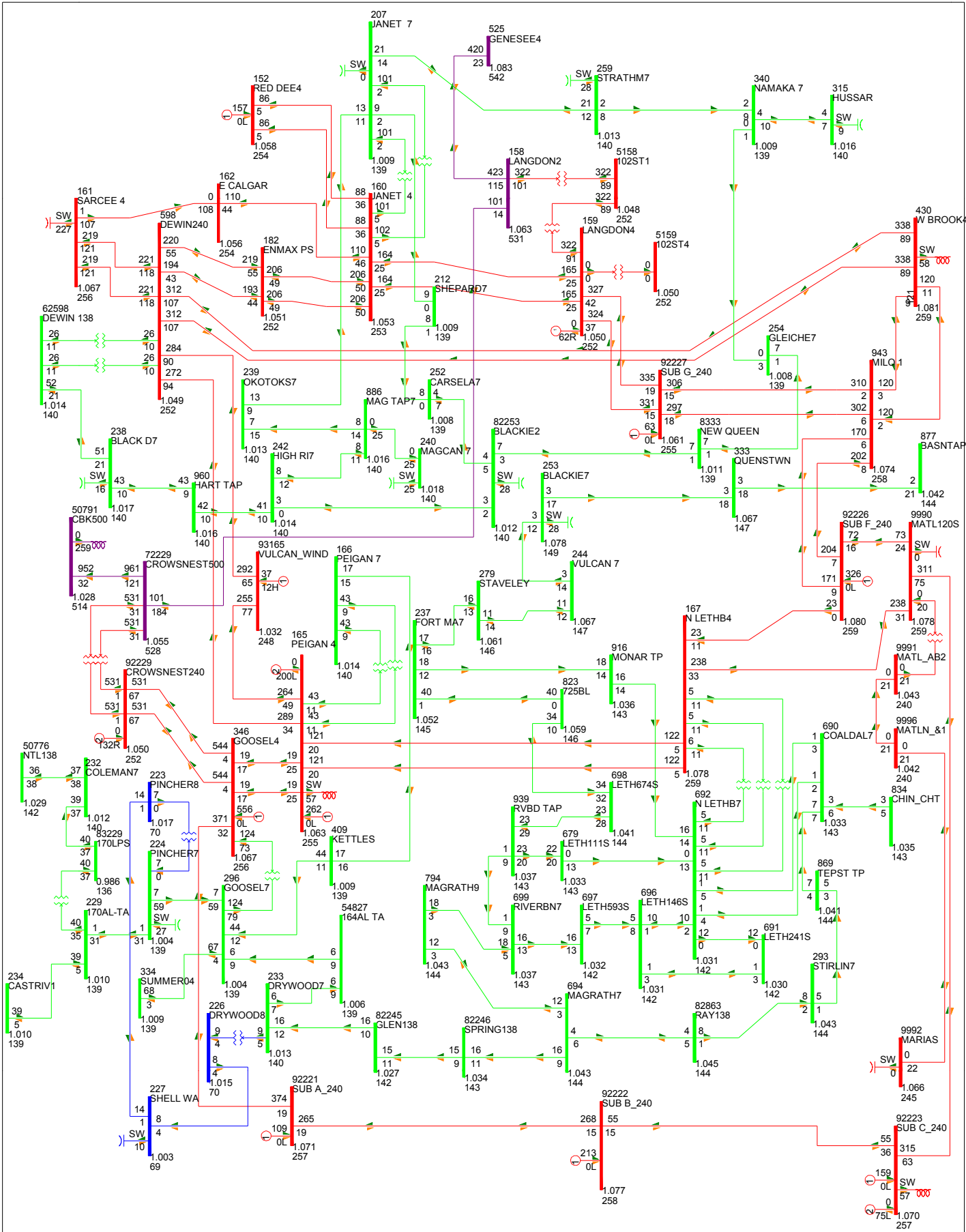


FIG 2017-1C-SL-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

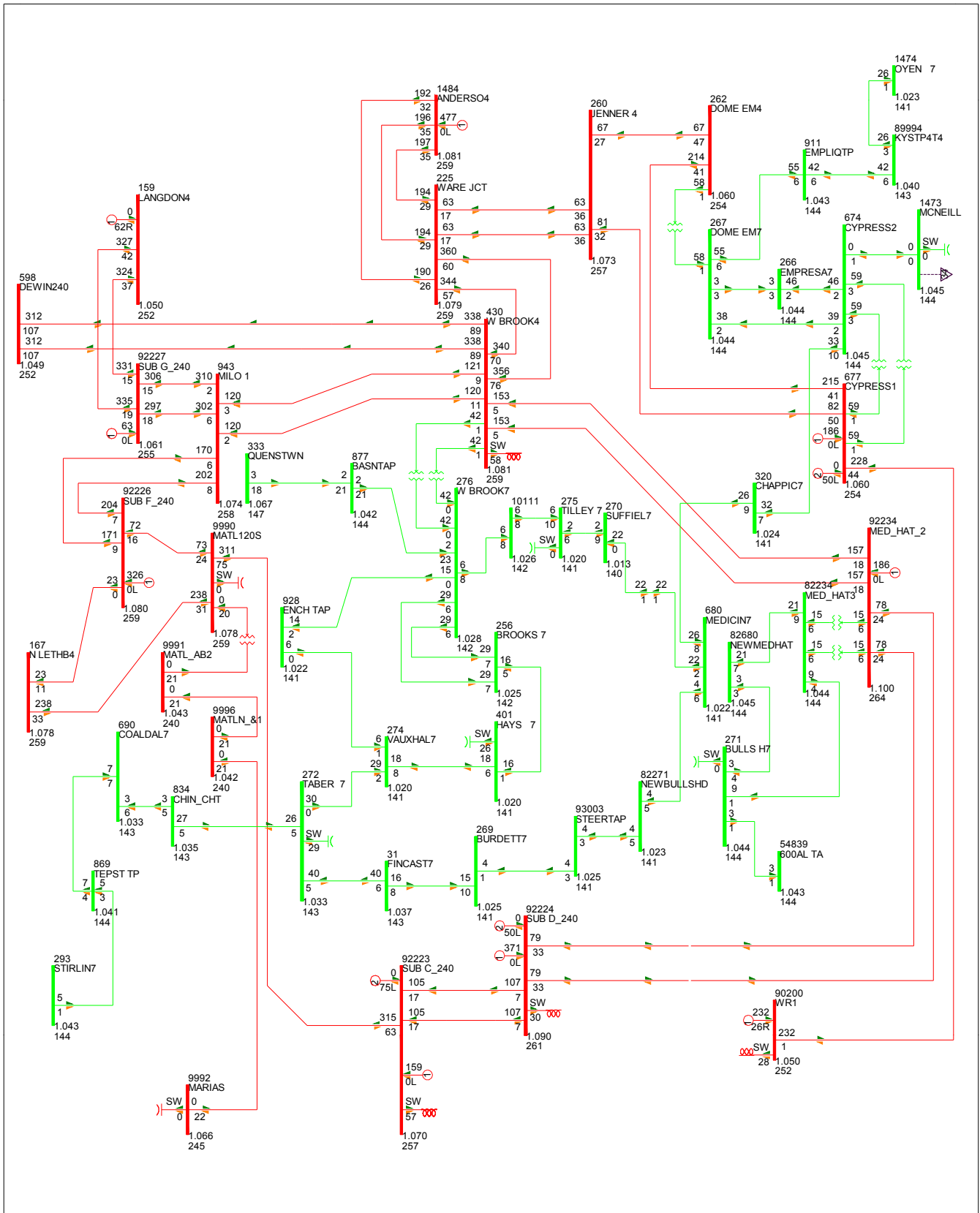


FIG 2017-1C-SL-3: N=0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

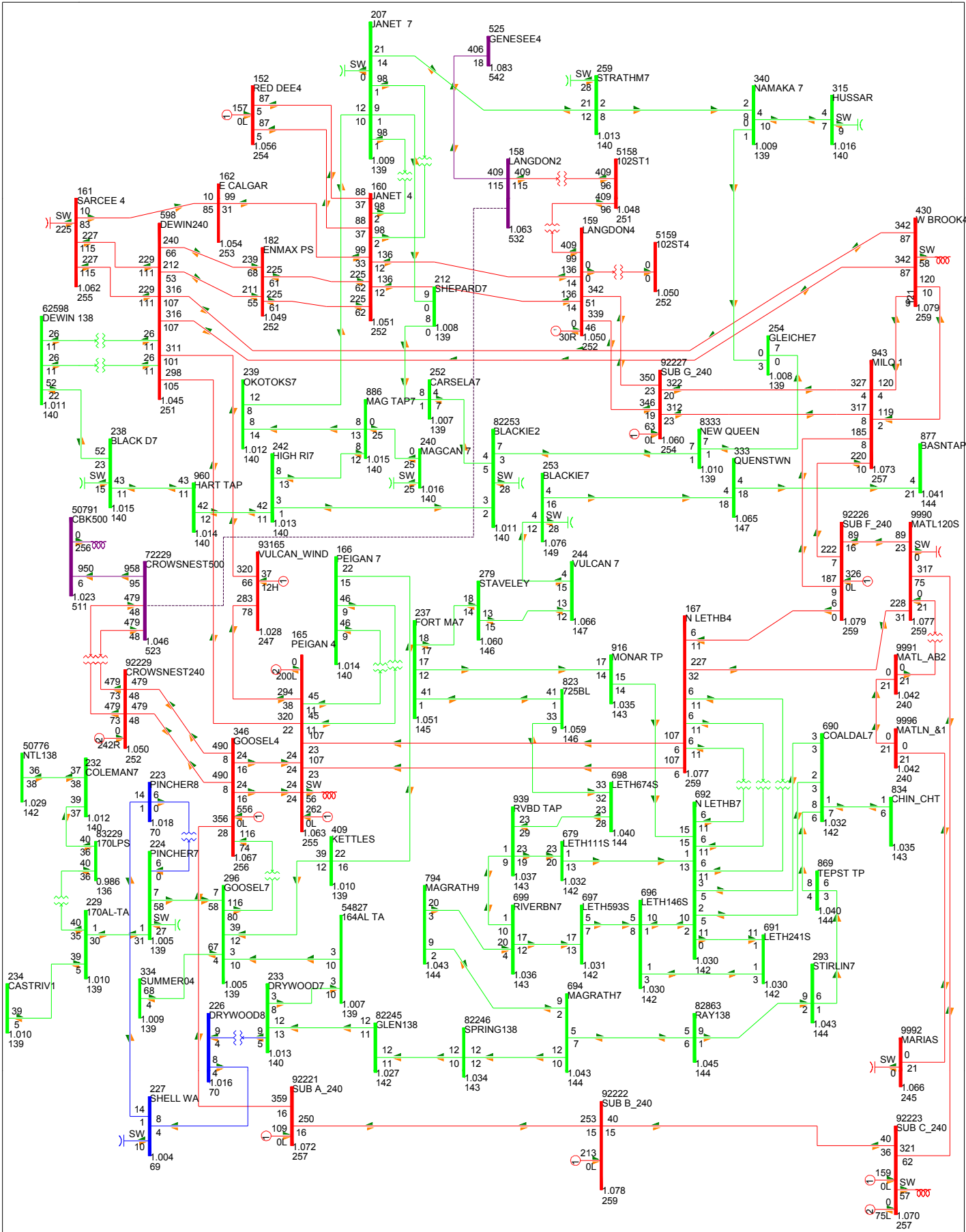


FIG 2017-1C-SL-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:16

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1014 MW

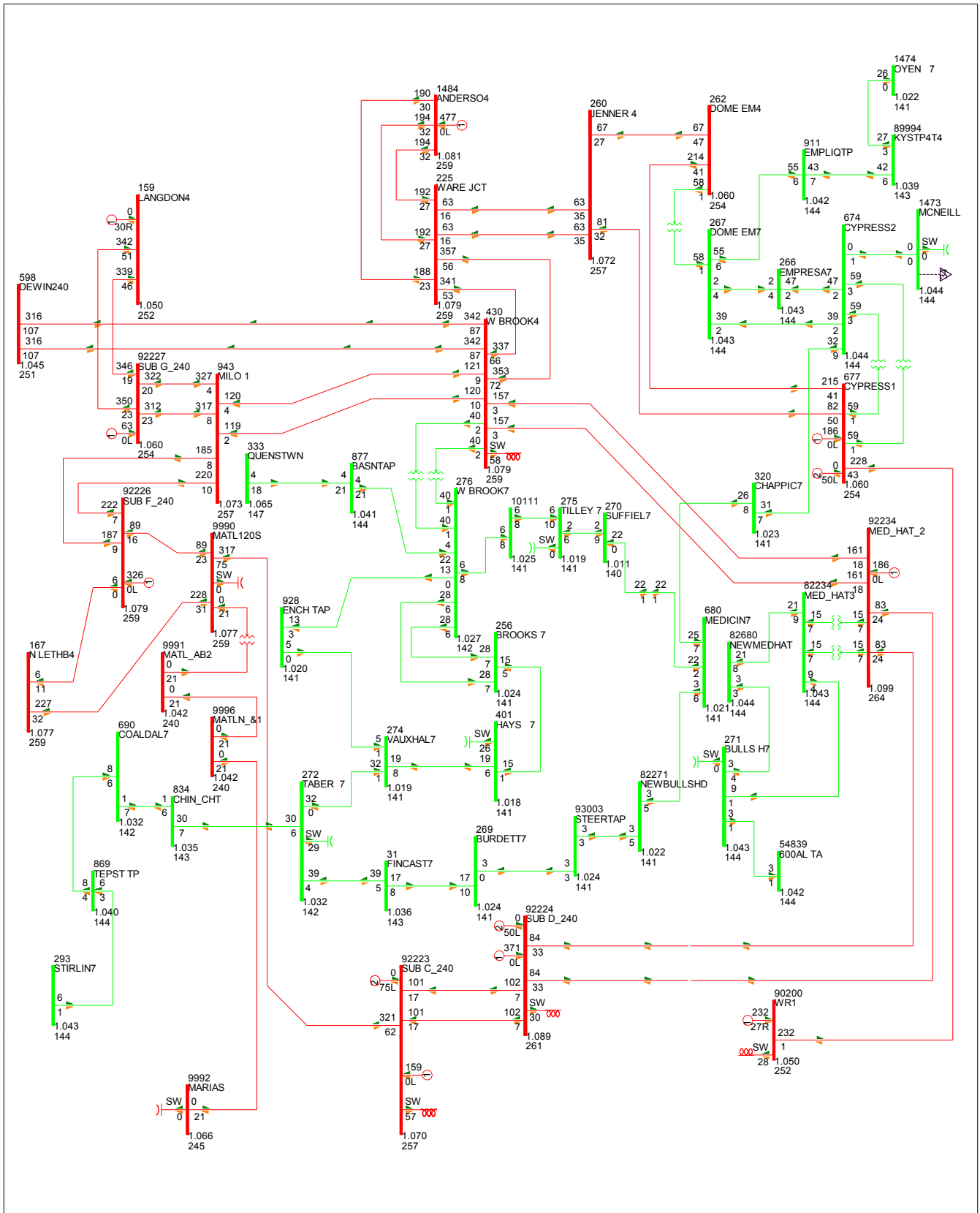


FIG 2017-1C-SL-5: LANGDON TO CROWNSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:16

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1014 MW

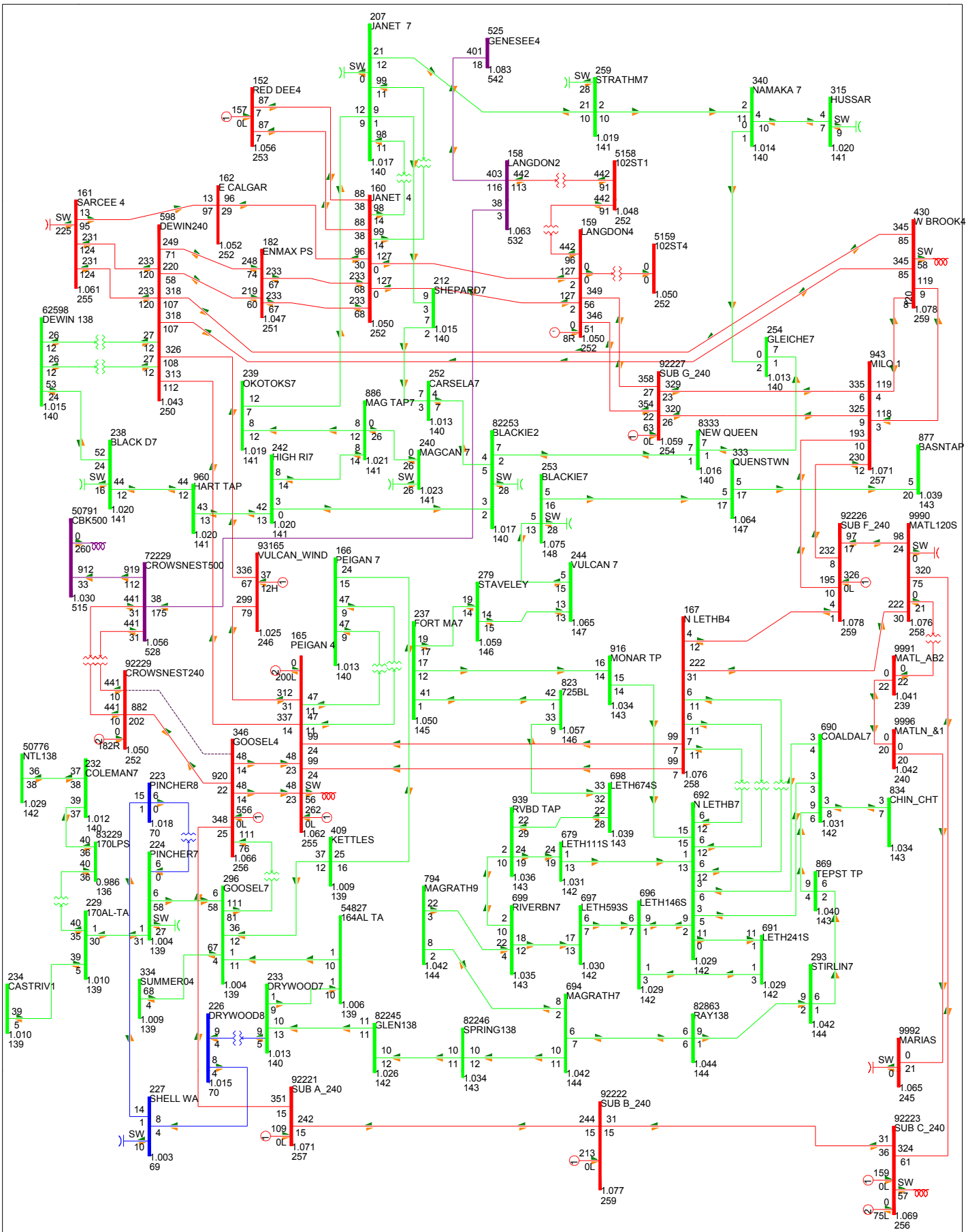


FIG 2017-1C-SL-6: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

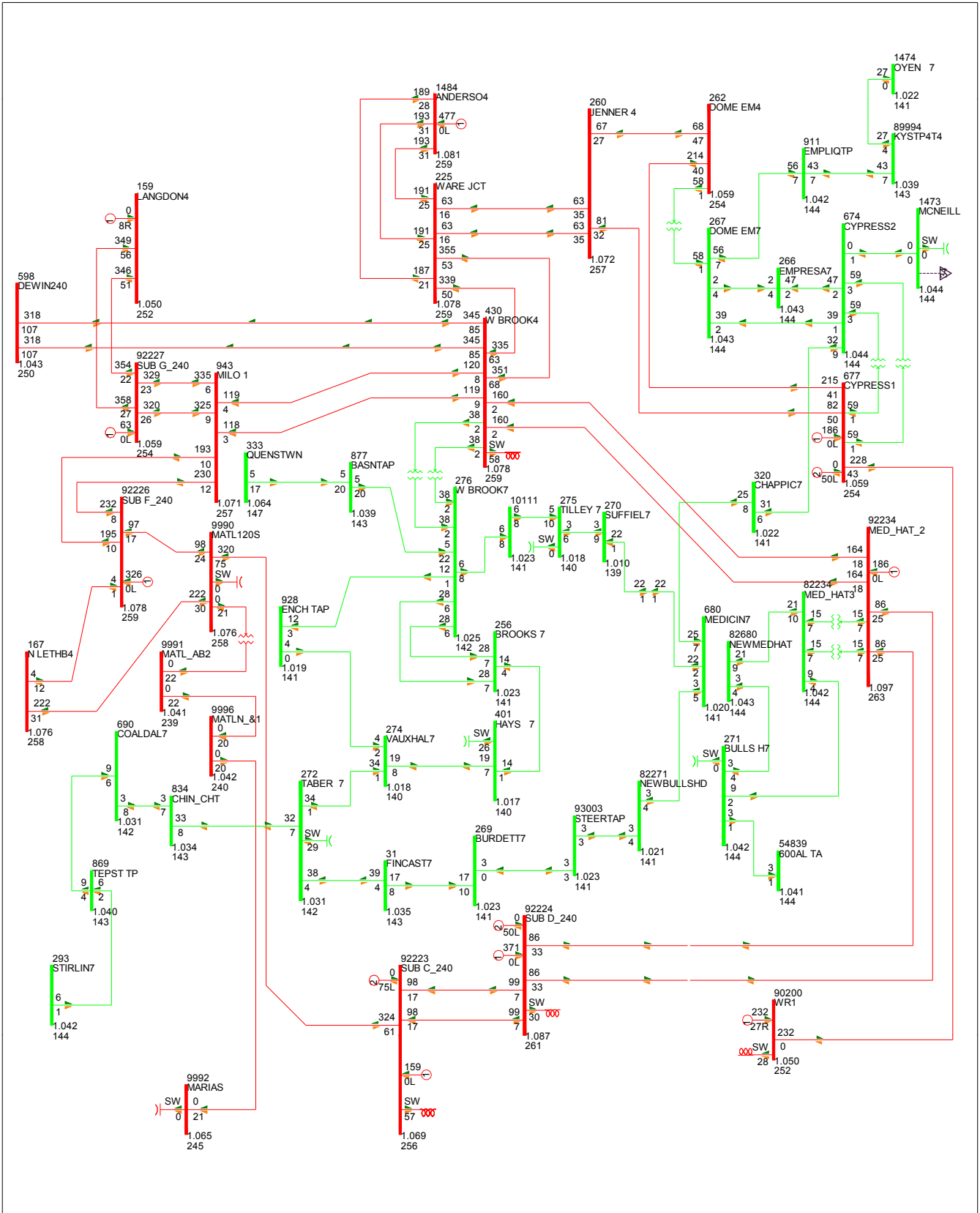


FIG 2017-1C-SL-7: CROWNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 20177 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

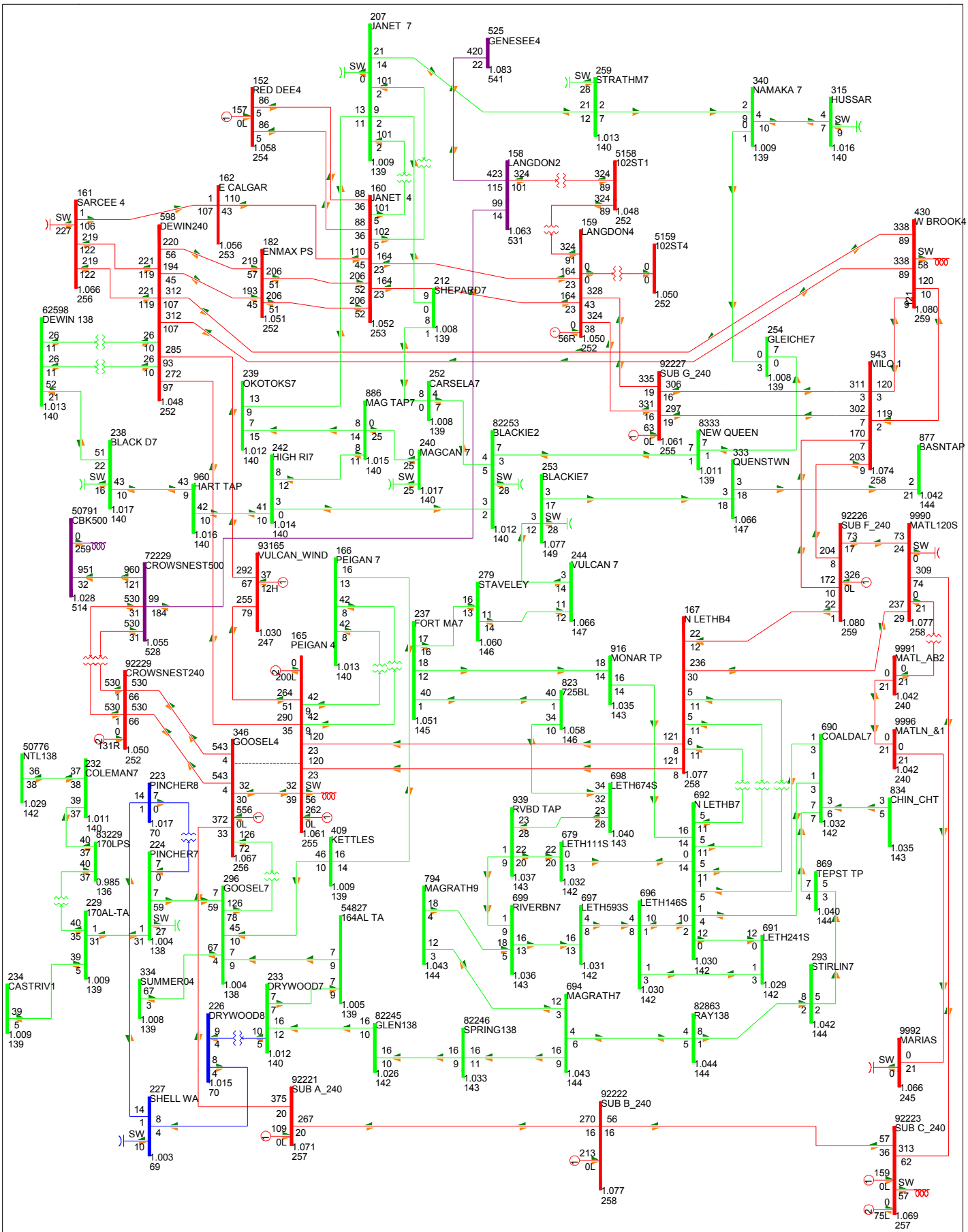


FIG 2017-1C-SL-8: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

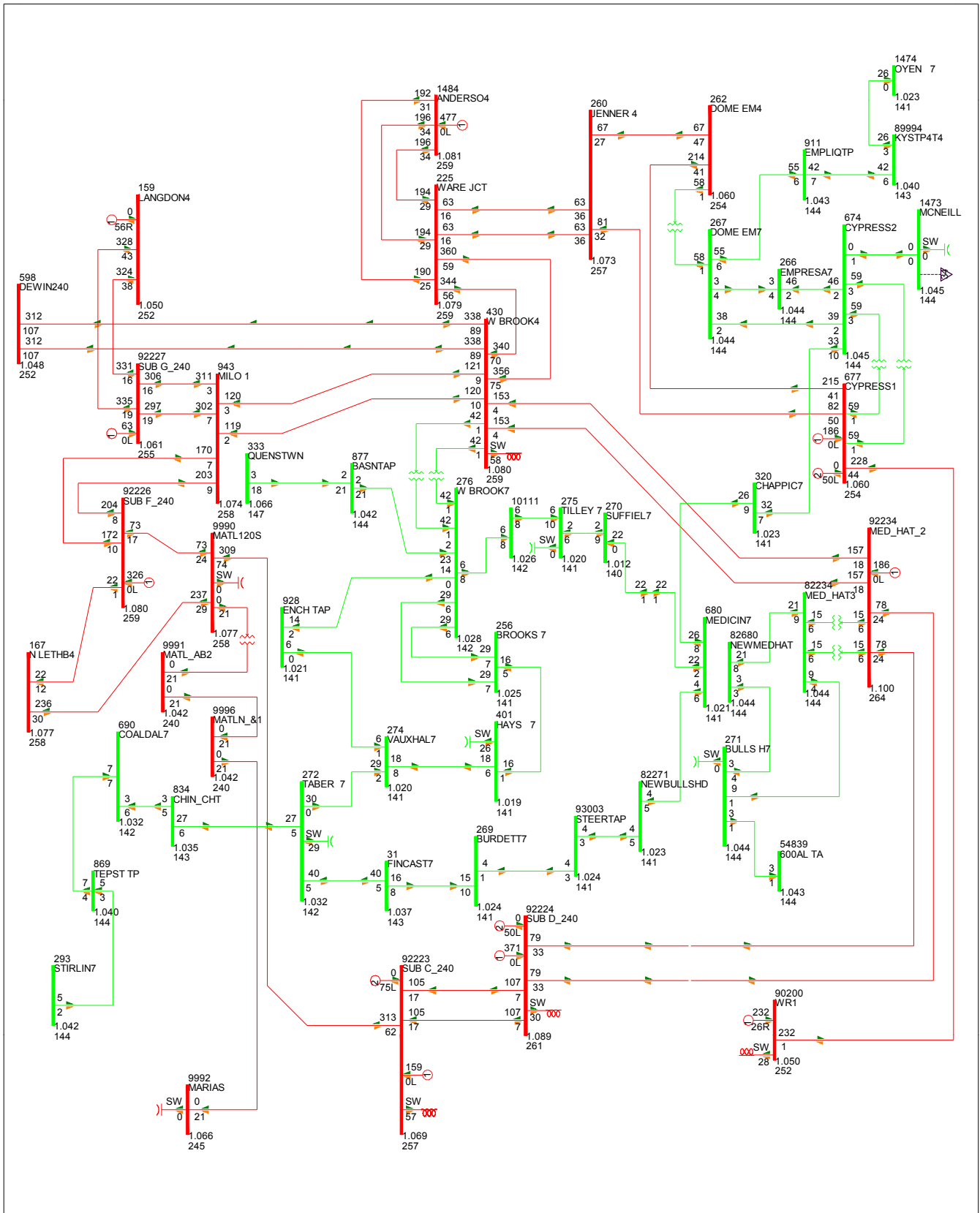


FIG 2017-1C-SL-9: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

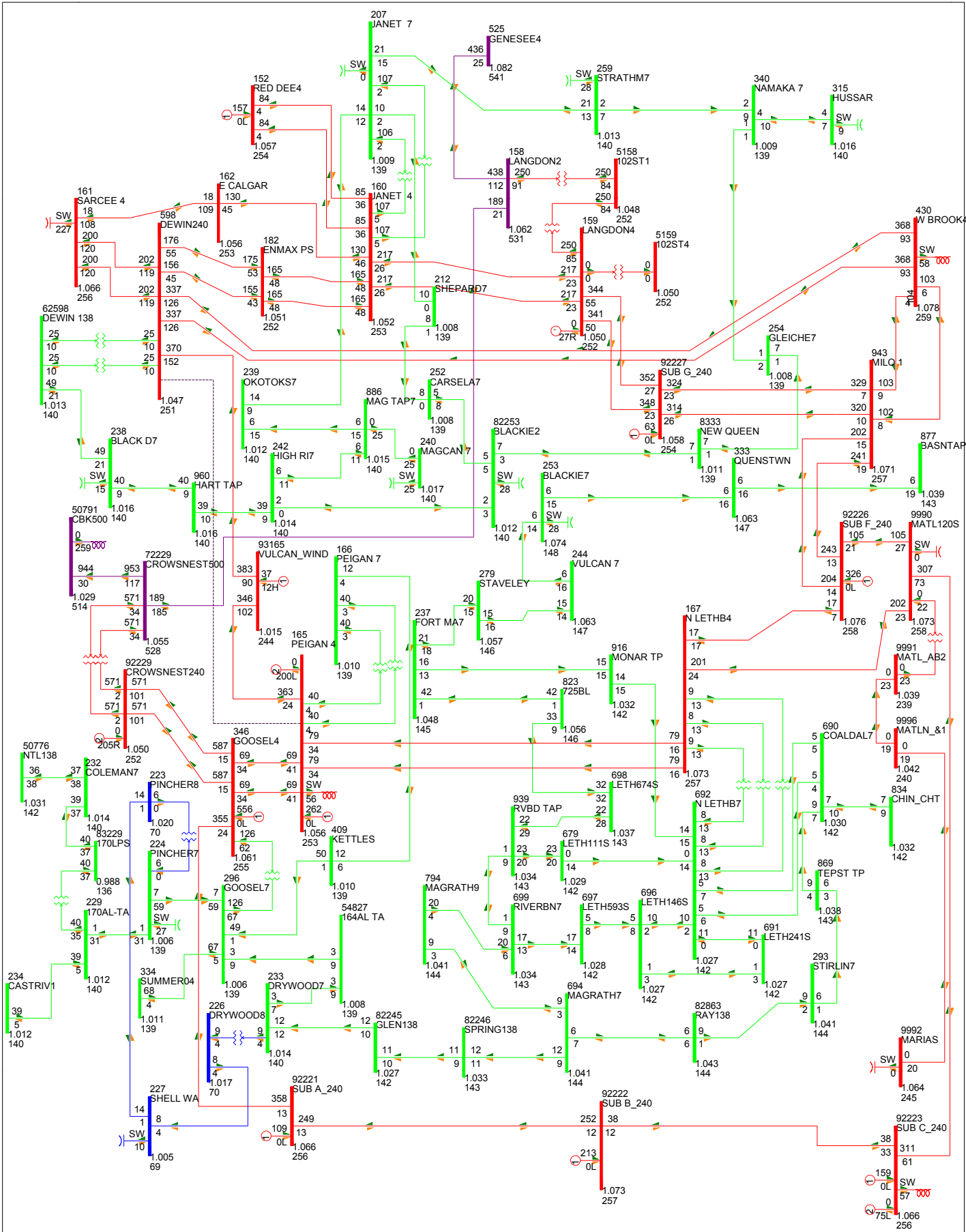


FIG 2017-1C-SL-10: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1010 MW

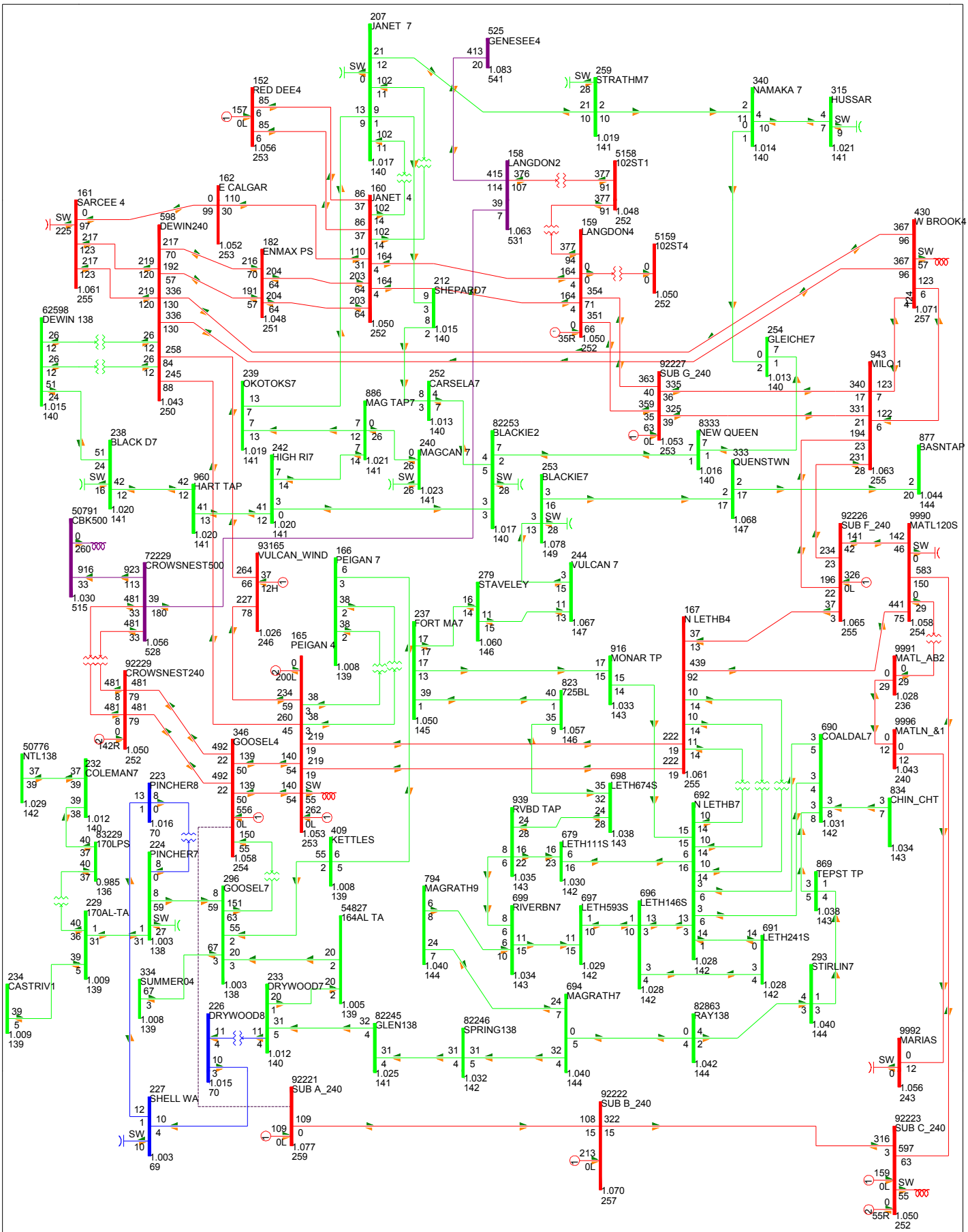


FIG 2017-1C-SL-12: GOOSELAKE TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

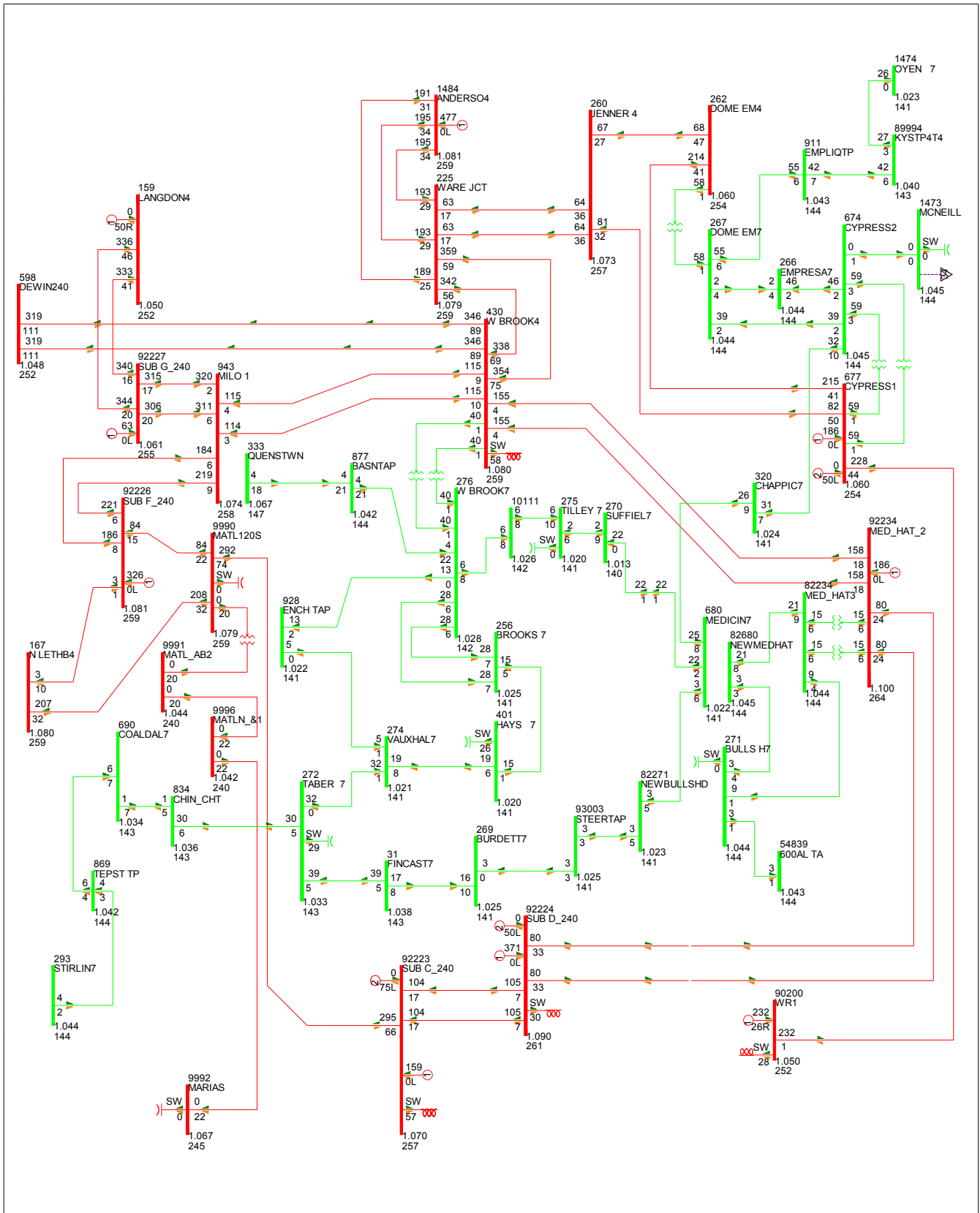


FIG 2017-1C-SL-15: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1021 MW

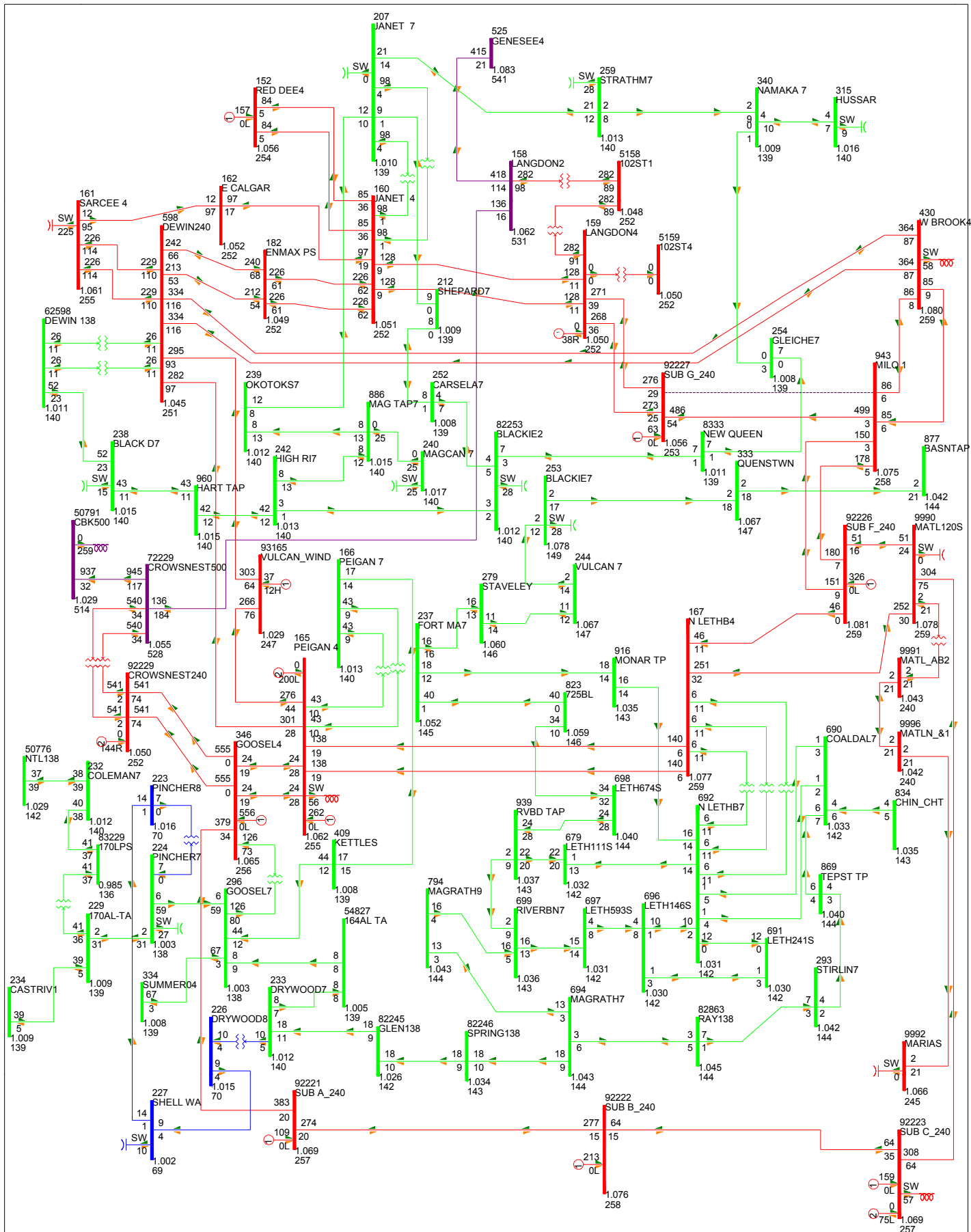


FIG 2017-1C-SL-16: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

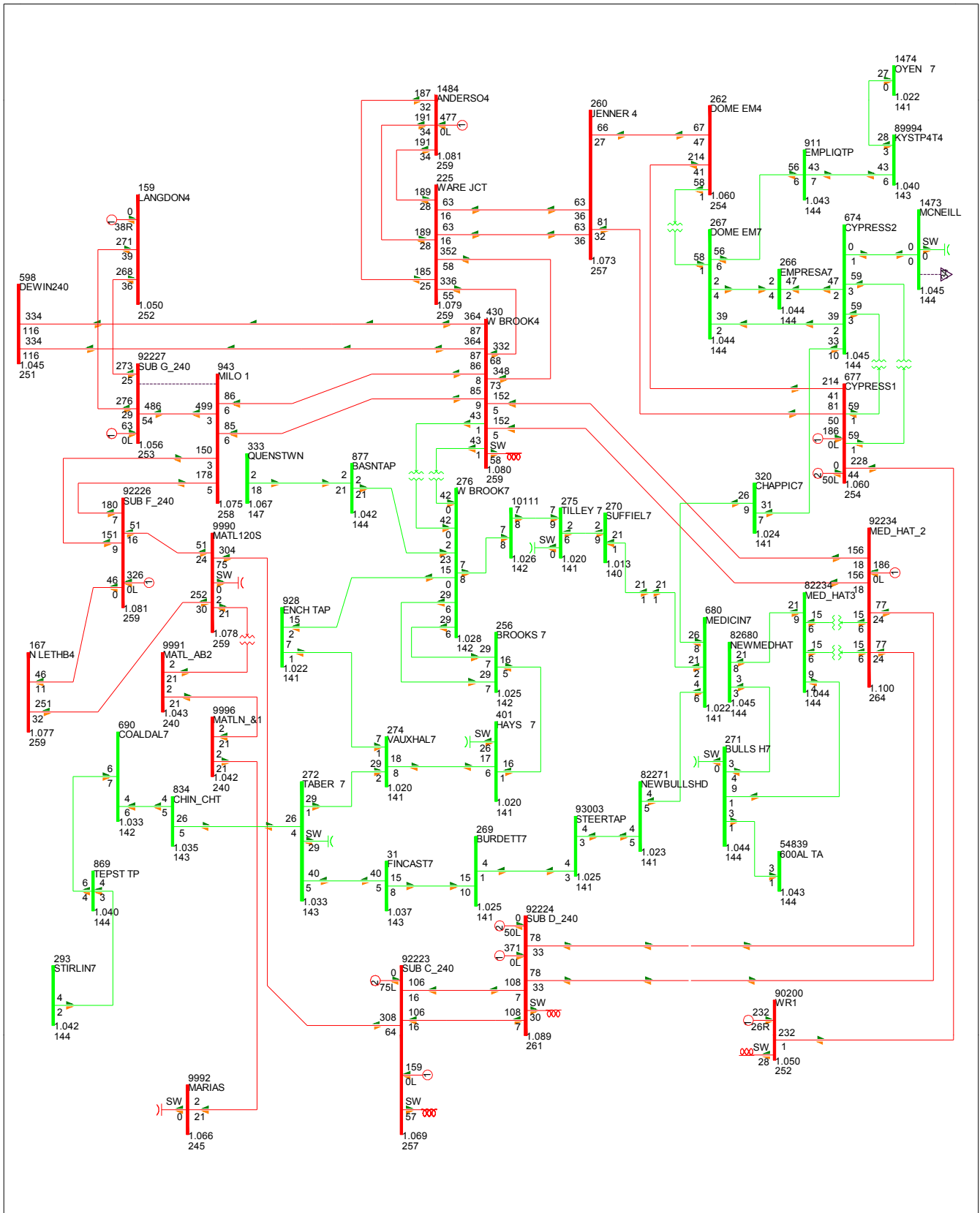


FIG 2017-1C-SL-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO

2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

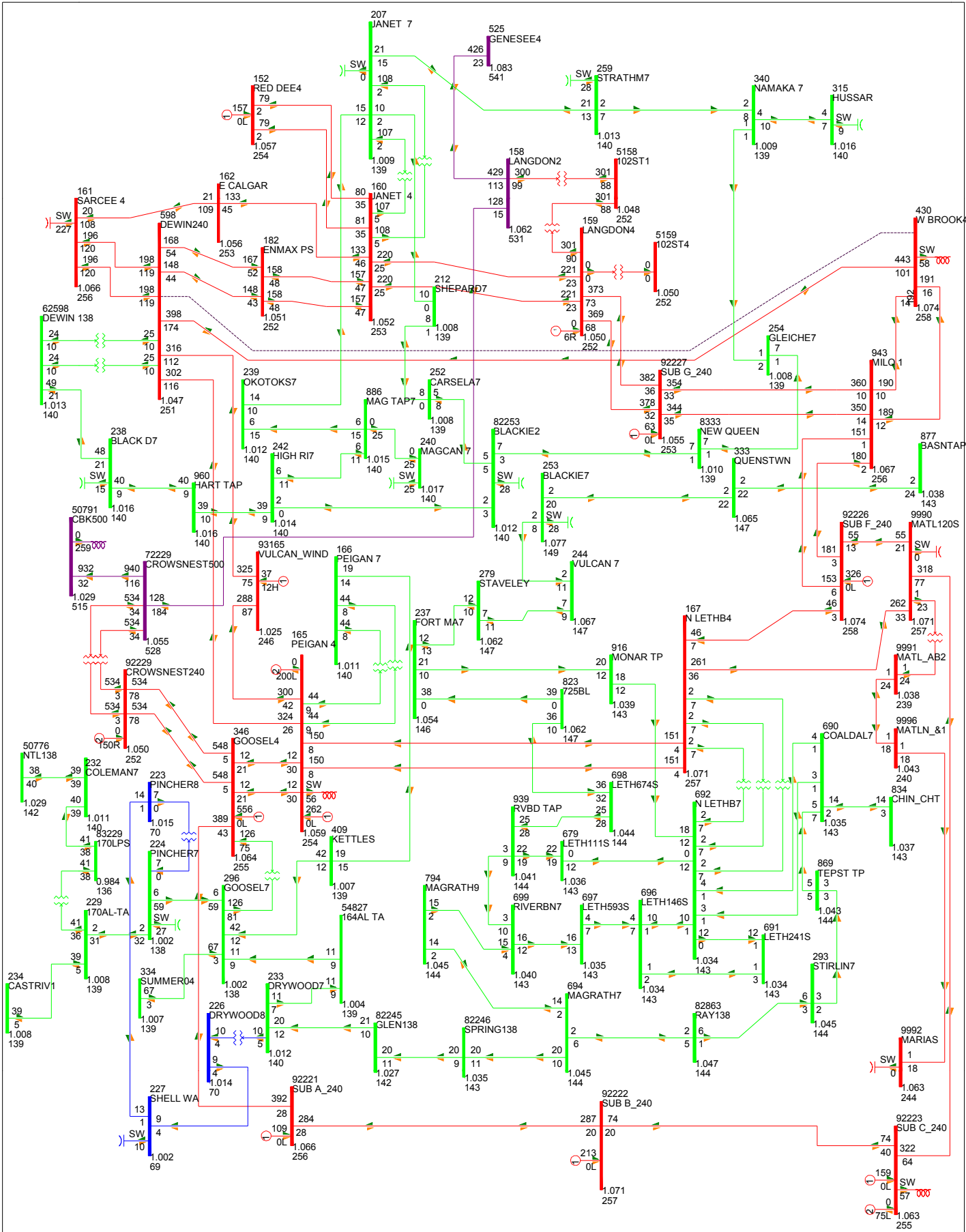


FIG 2017-1C-SL-18: WESTBROOKS TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

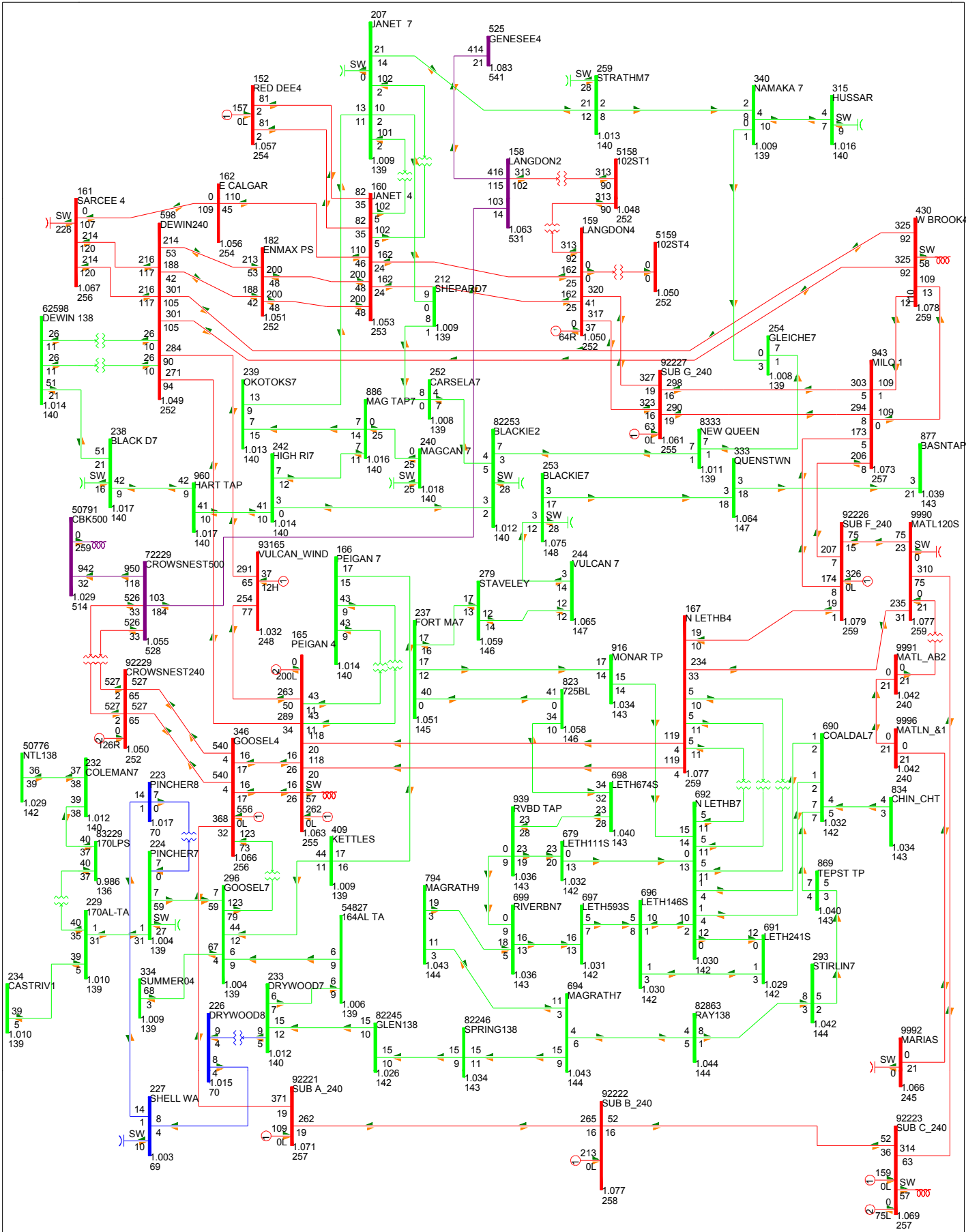


FIG 2017-1C-SL-20: WAREJUNC TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1012 MW

GENERATION DISPATCH REPORT

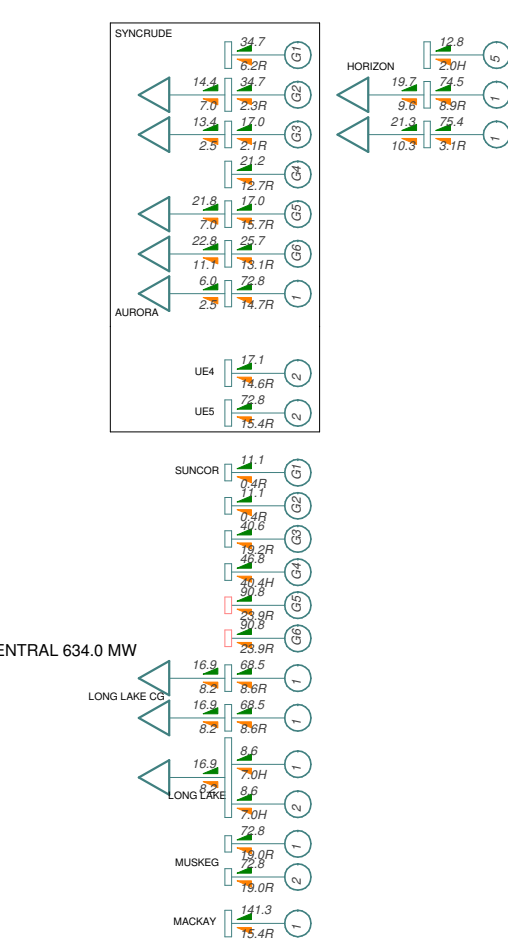
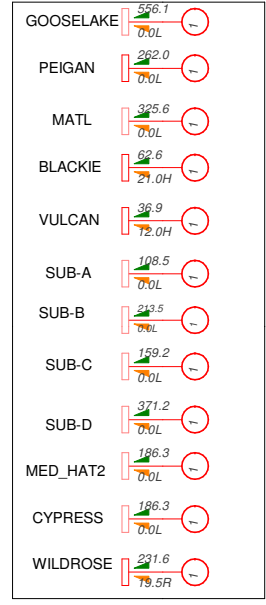
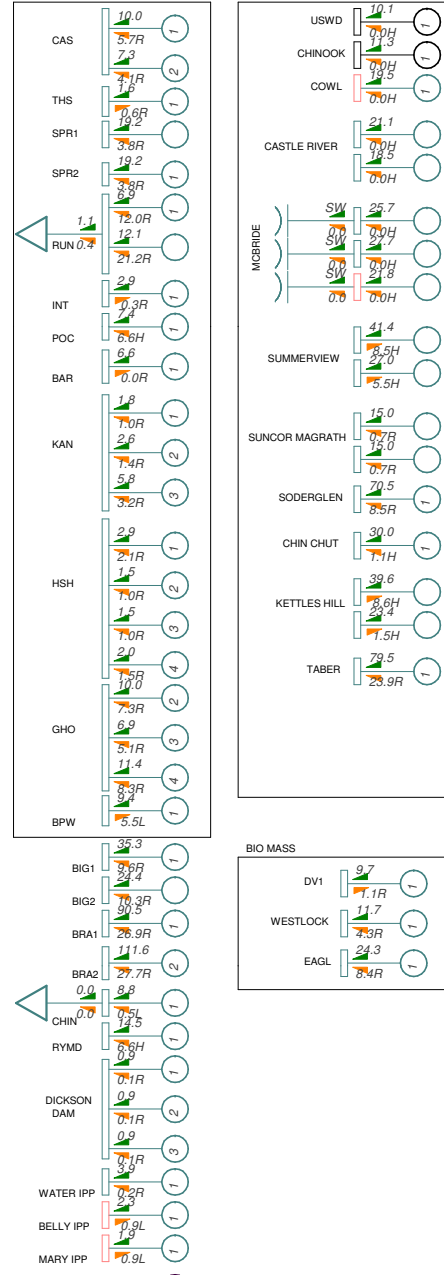
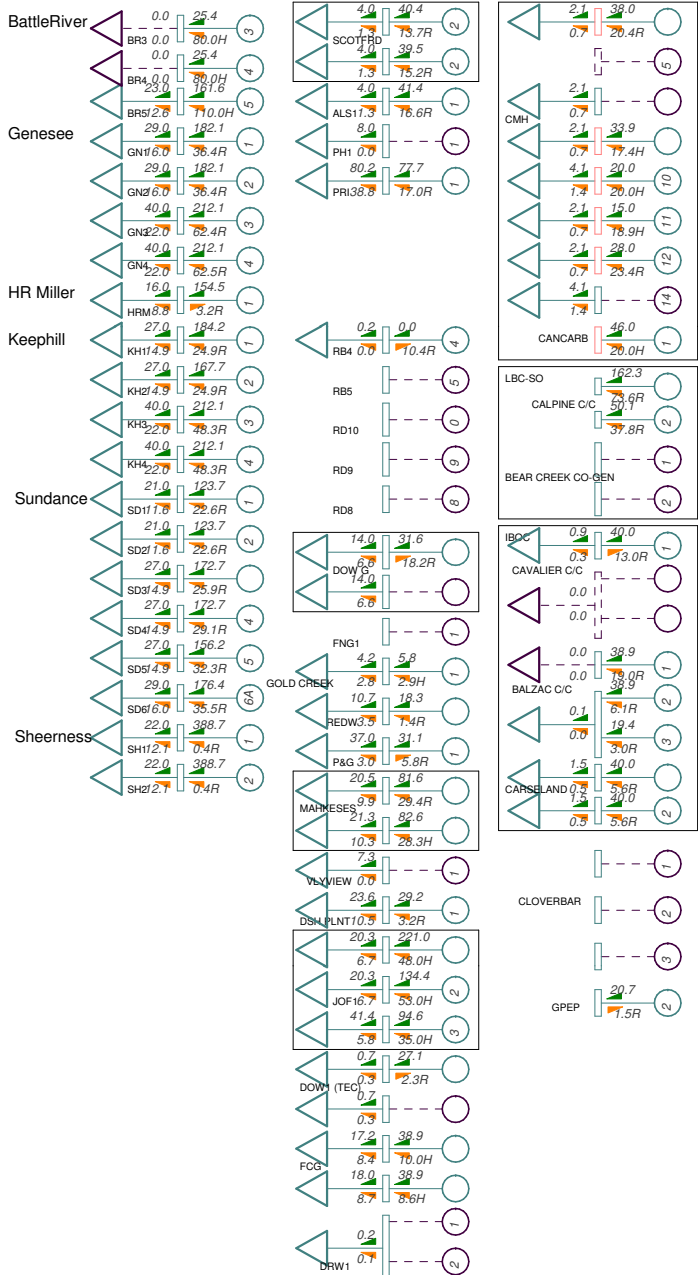
GROSS COAL GEN. 3634.3 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER PEAK CASE
MON, NOV 24 2008 14:46

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0%PATEA
1.050OV 0.950UV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-1C-SP-1

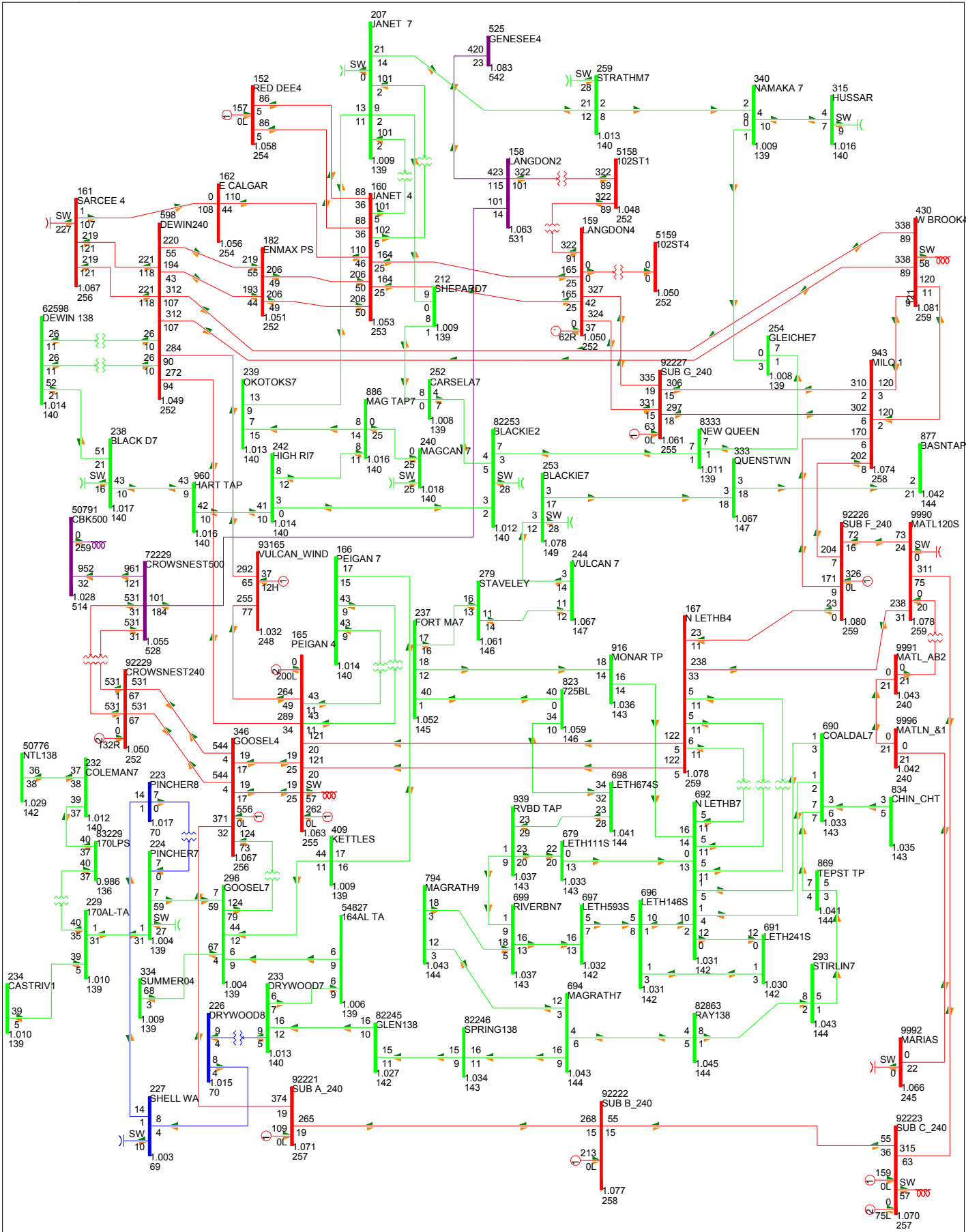


FIG 2017-1C-SP-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

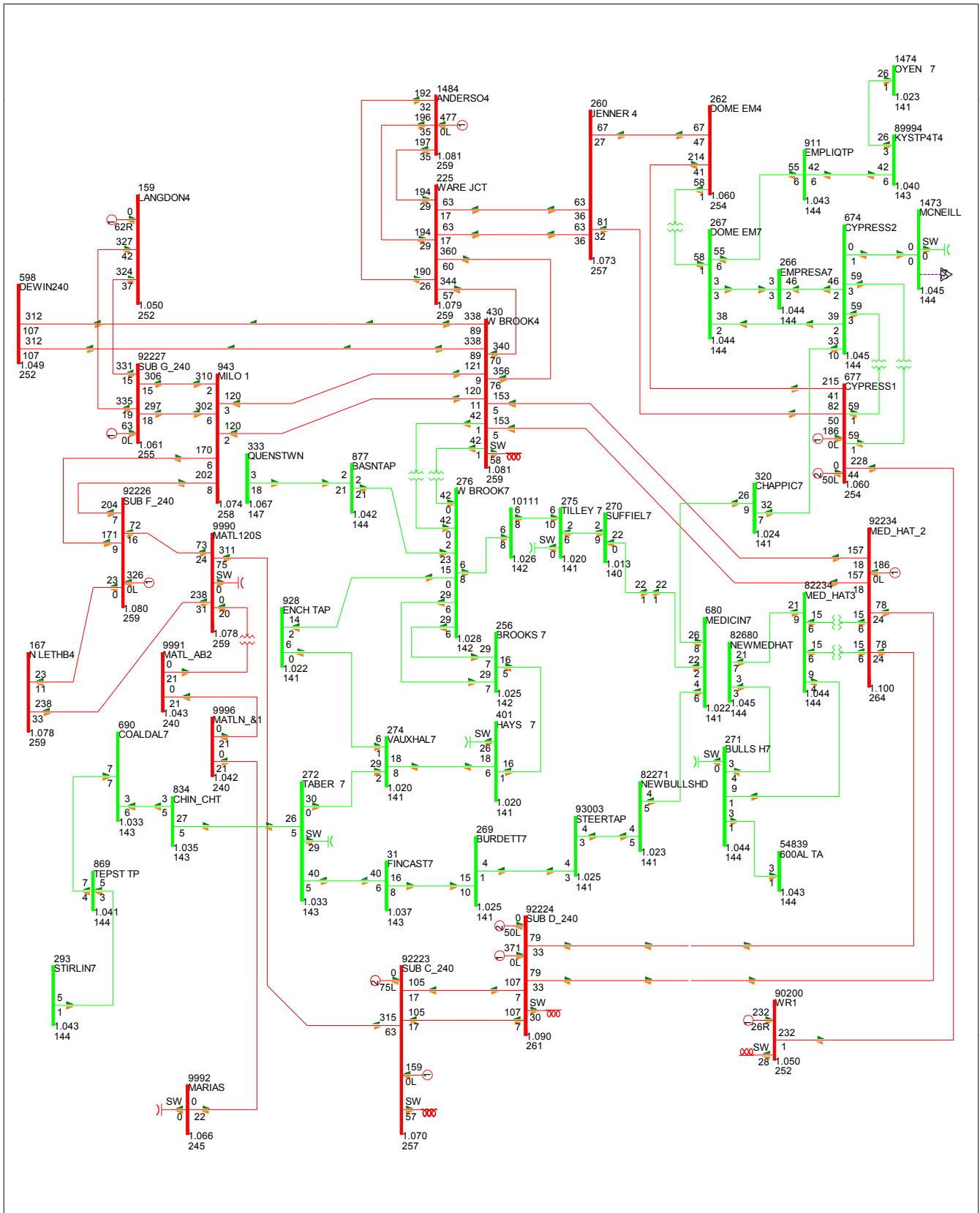


FIG 2017-1C-SP-3: N=0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1023 MW

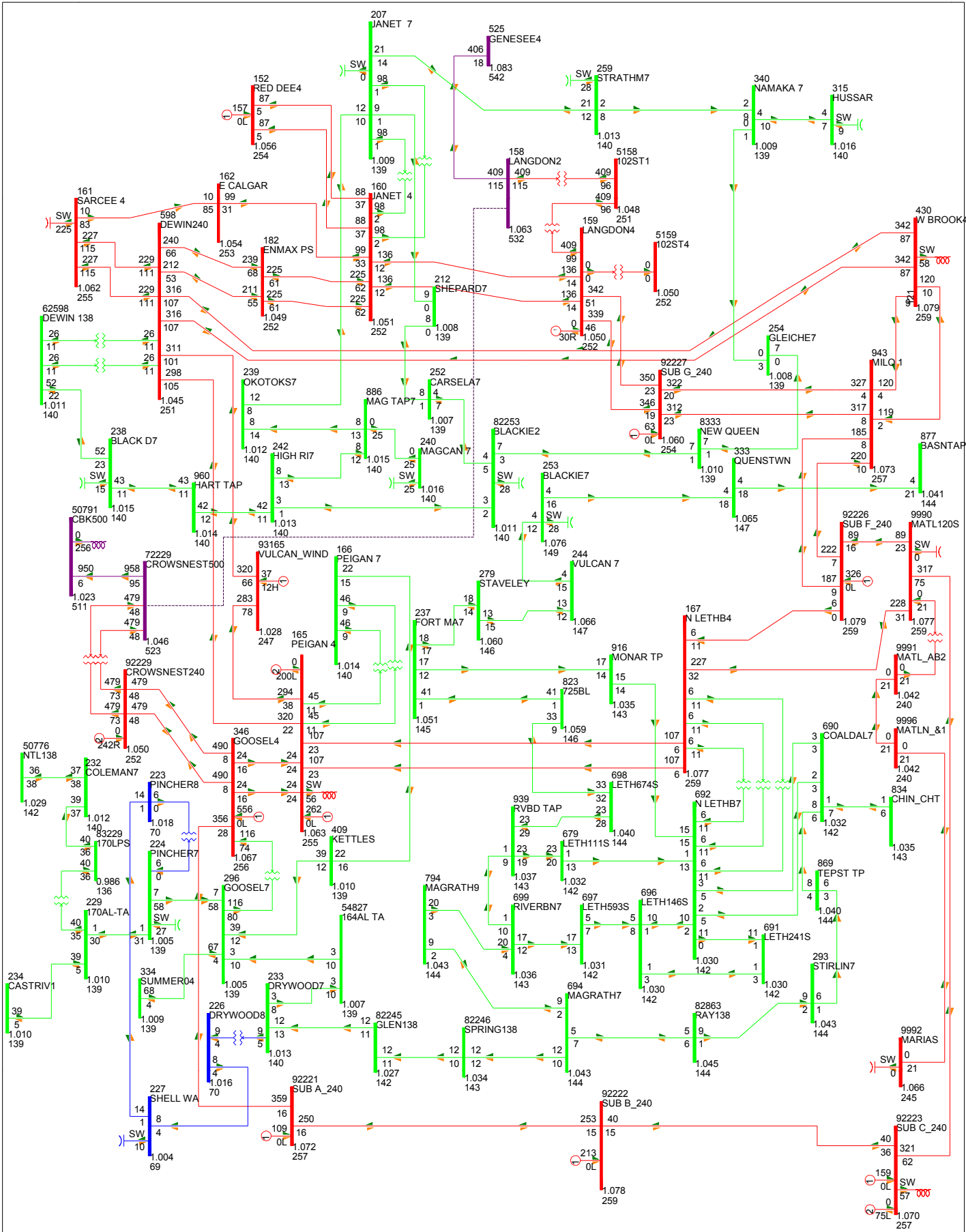


FIG 2017-1C-SP-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:16

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1014 MW

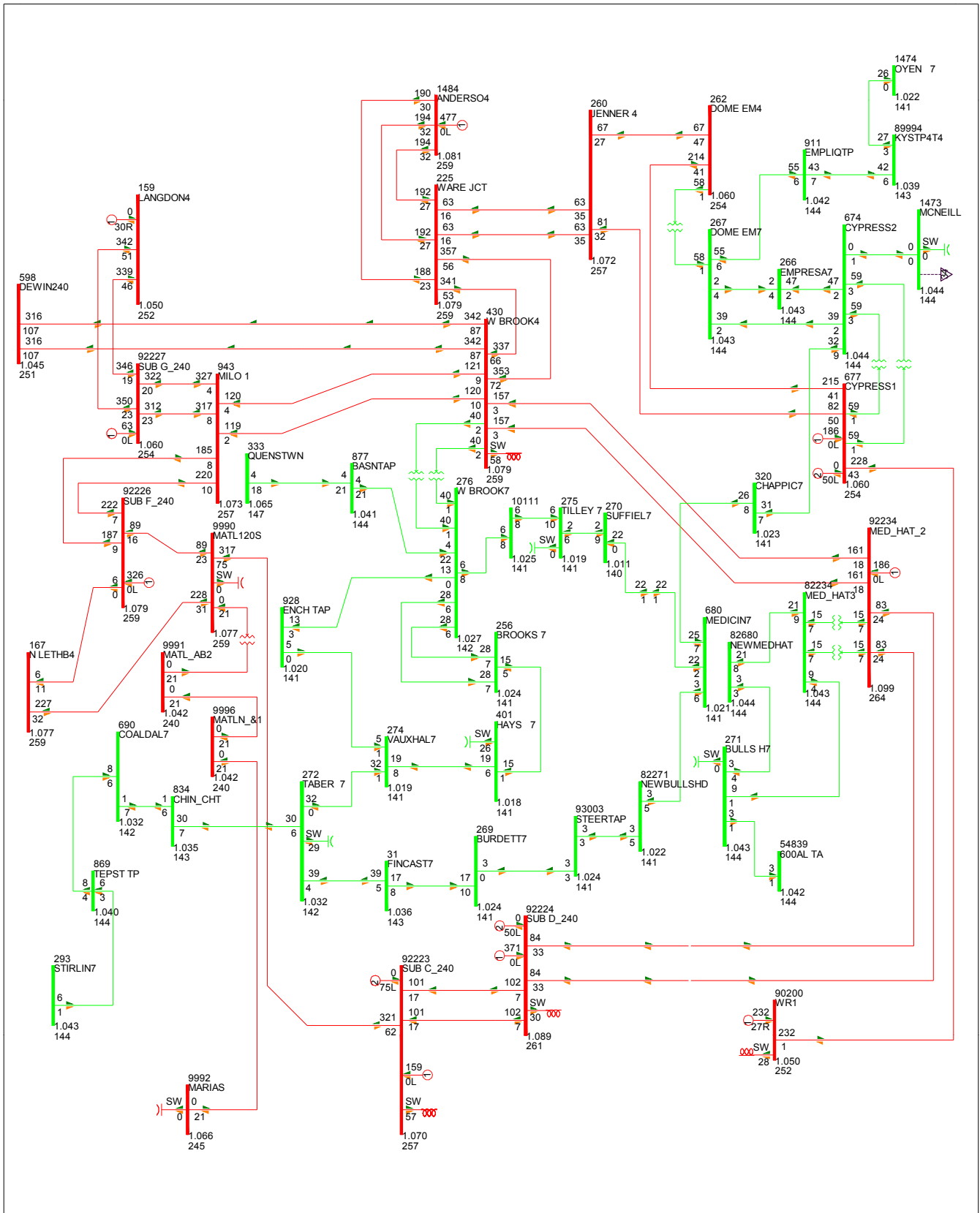


FIG 2017-1C-SP-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:16

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1014 MW

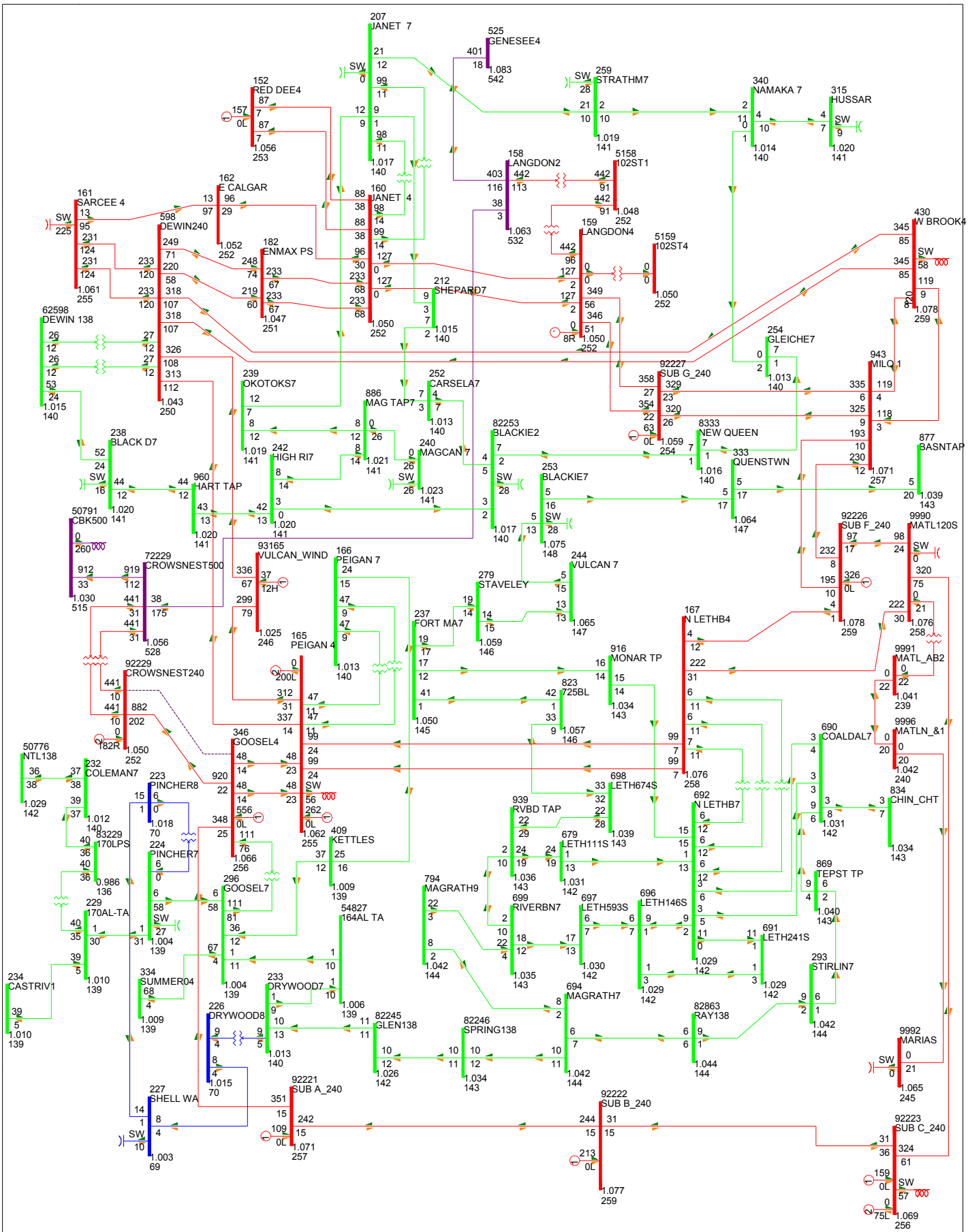


FIG 2017-1C-SP-6: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: $\le 34.500 \le 69.000 \le 138.000 \le 240.000 \le 500.000 > 500.000$
 BC Export: 988 MW

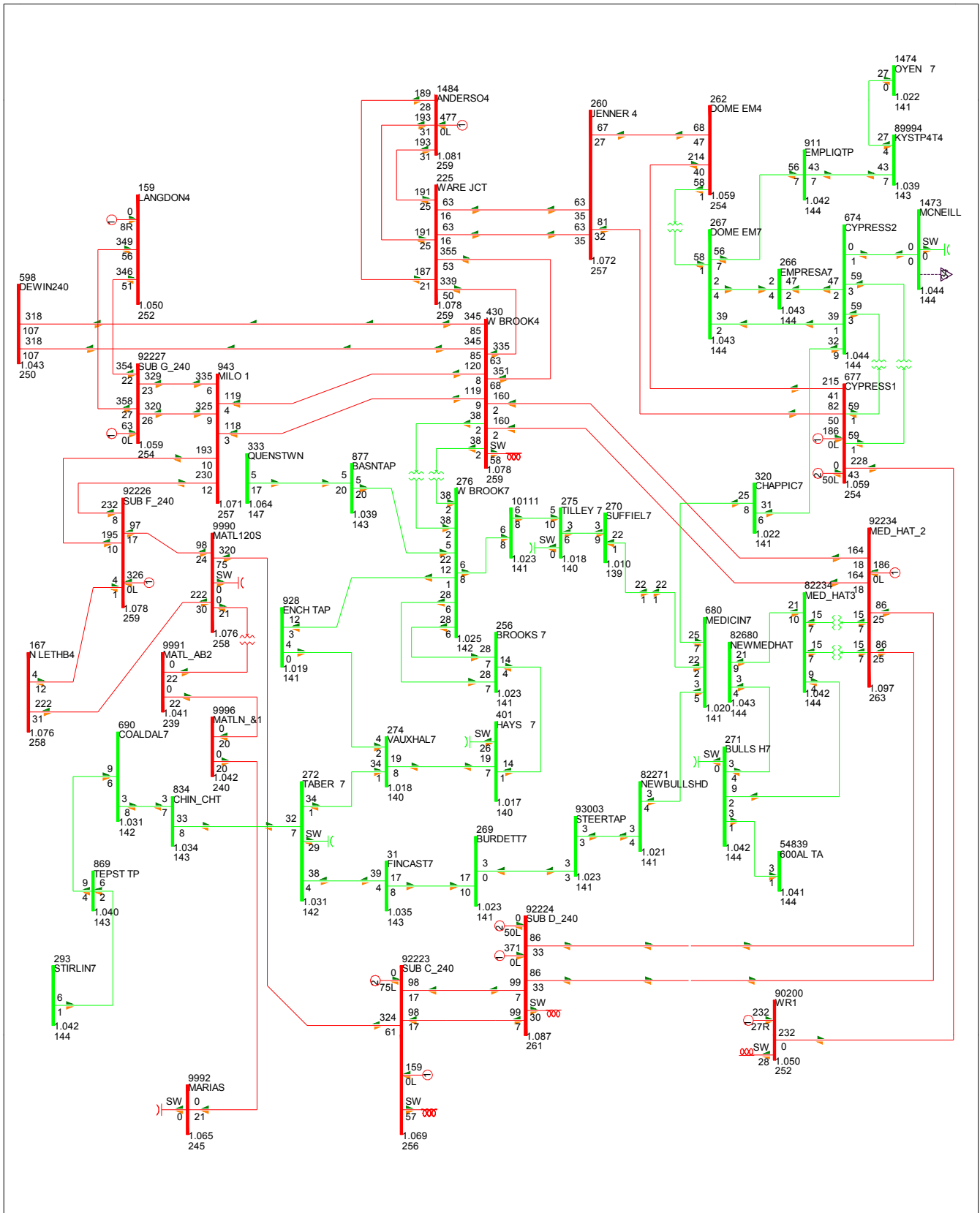


FIG 2017-1C-SP-7: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:42

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

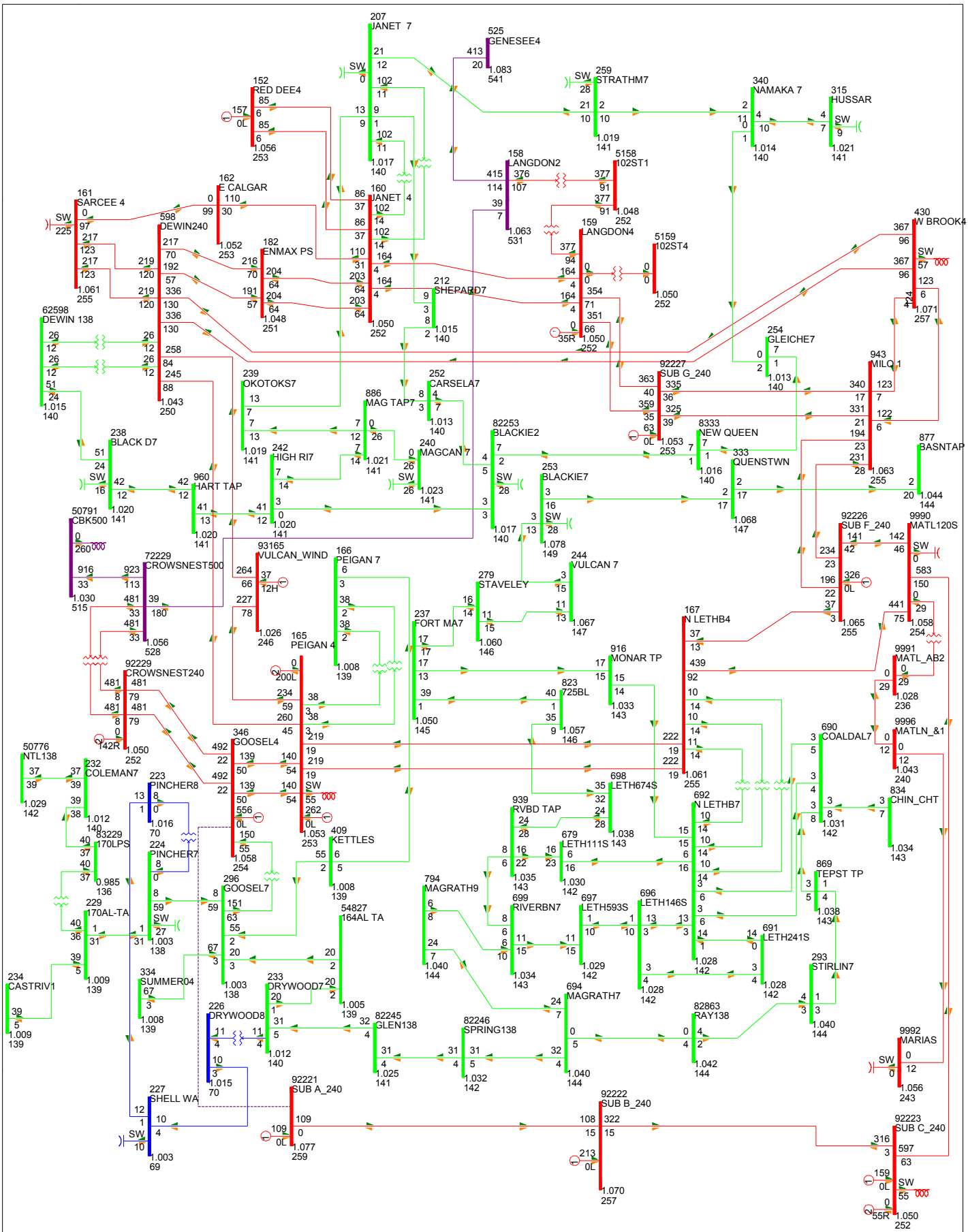


FIG 2017-1C-SP-12: GOOSELAKE TO SUB A 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

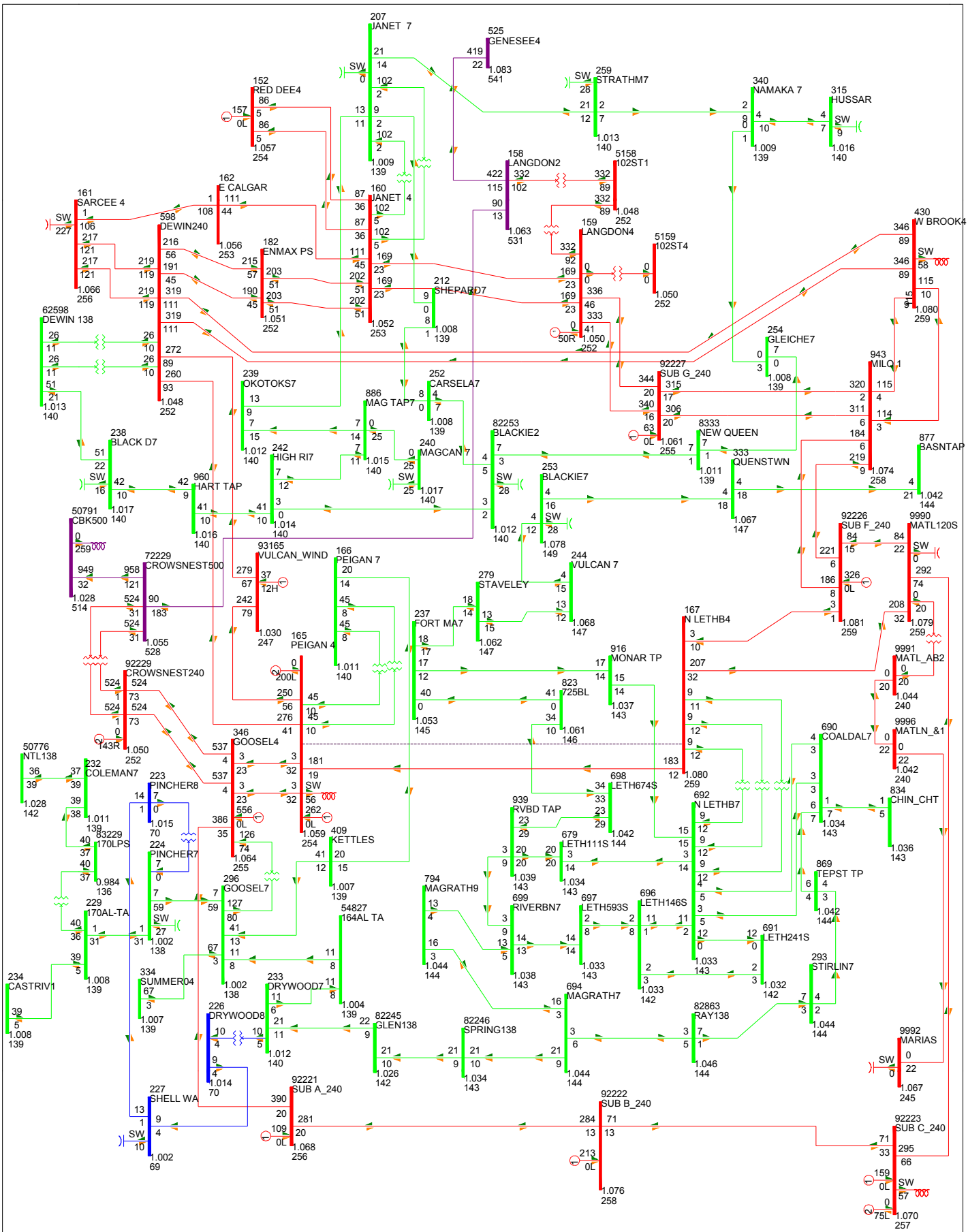


FIG 2017-1C-SP-14: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1021 MW

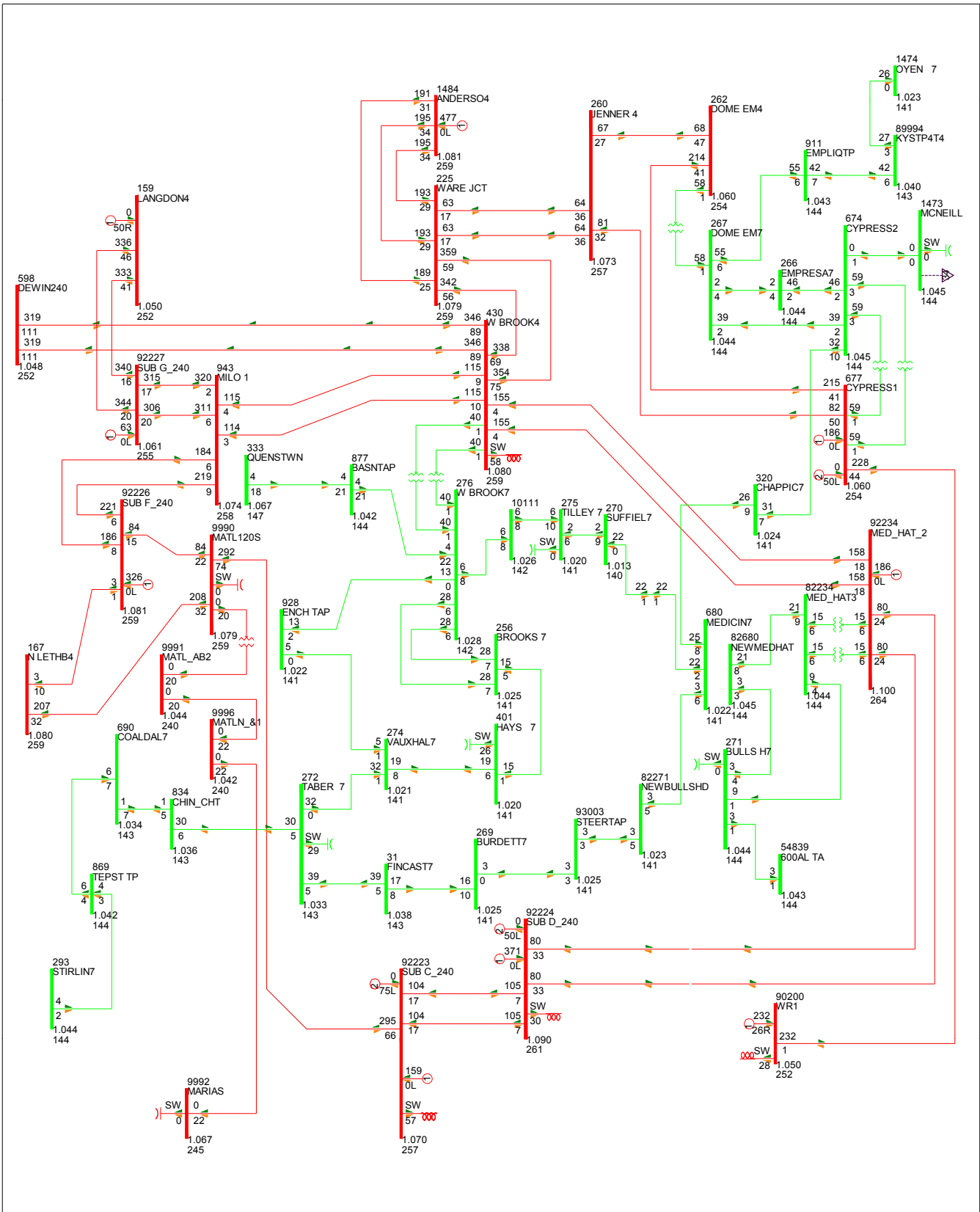


FIG 2017-1C-SP-15: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1021 MW

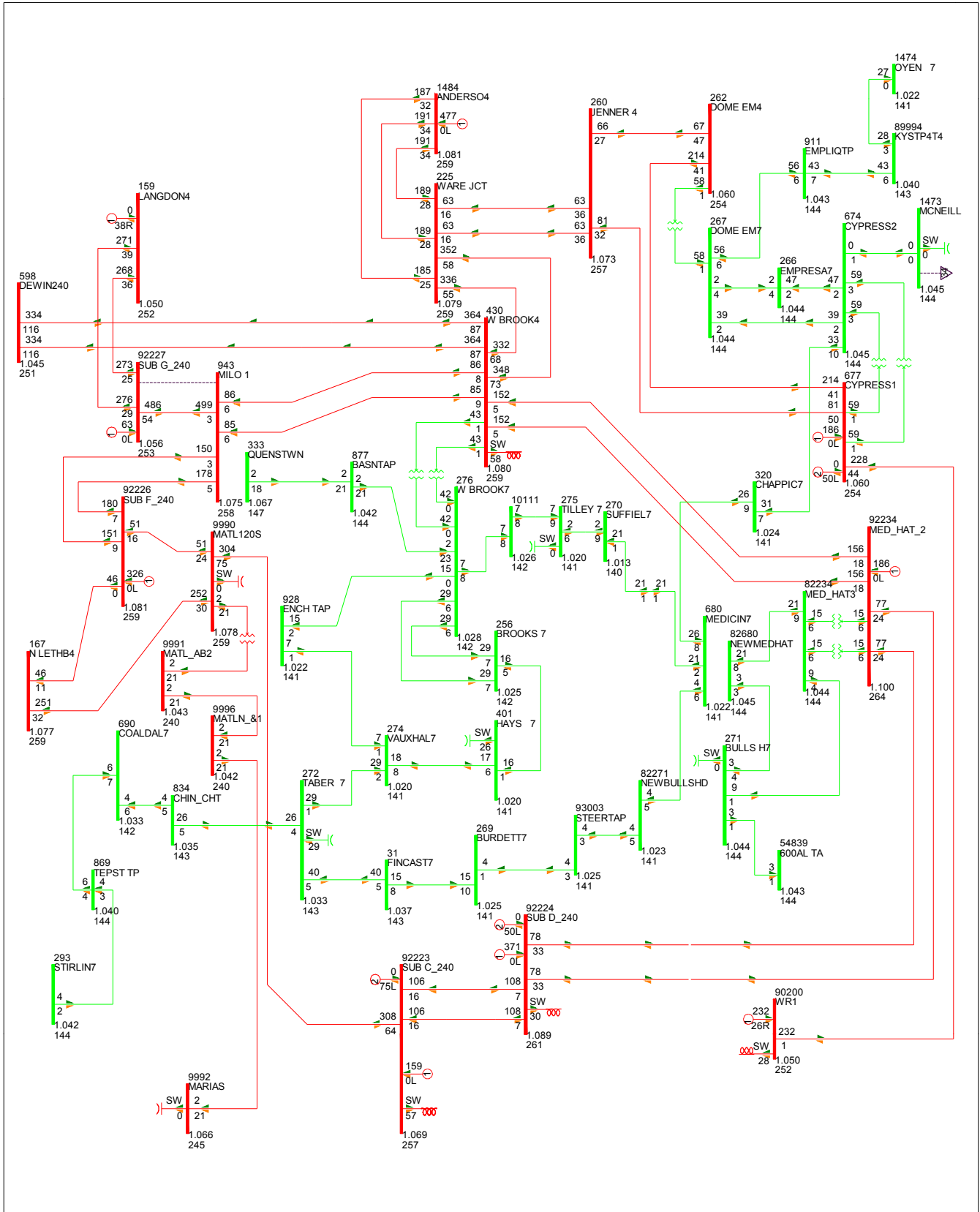


FIG 2017-1C-SP-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1007 MW

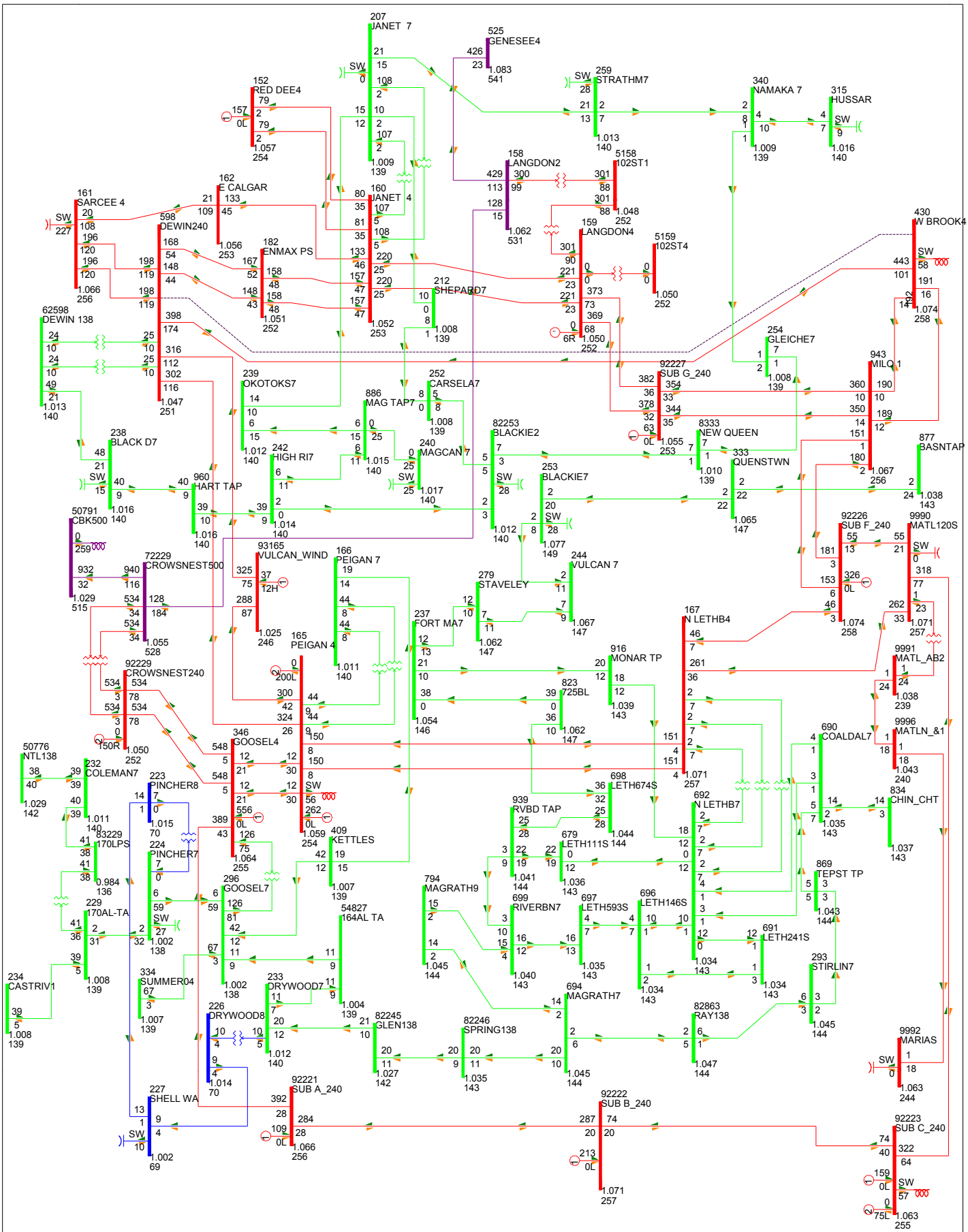


FIG 2017-1C-SP-18: WESTBROOKS TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

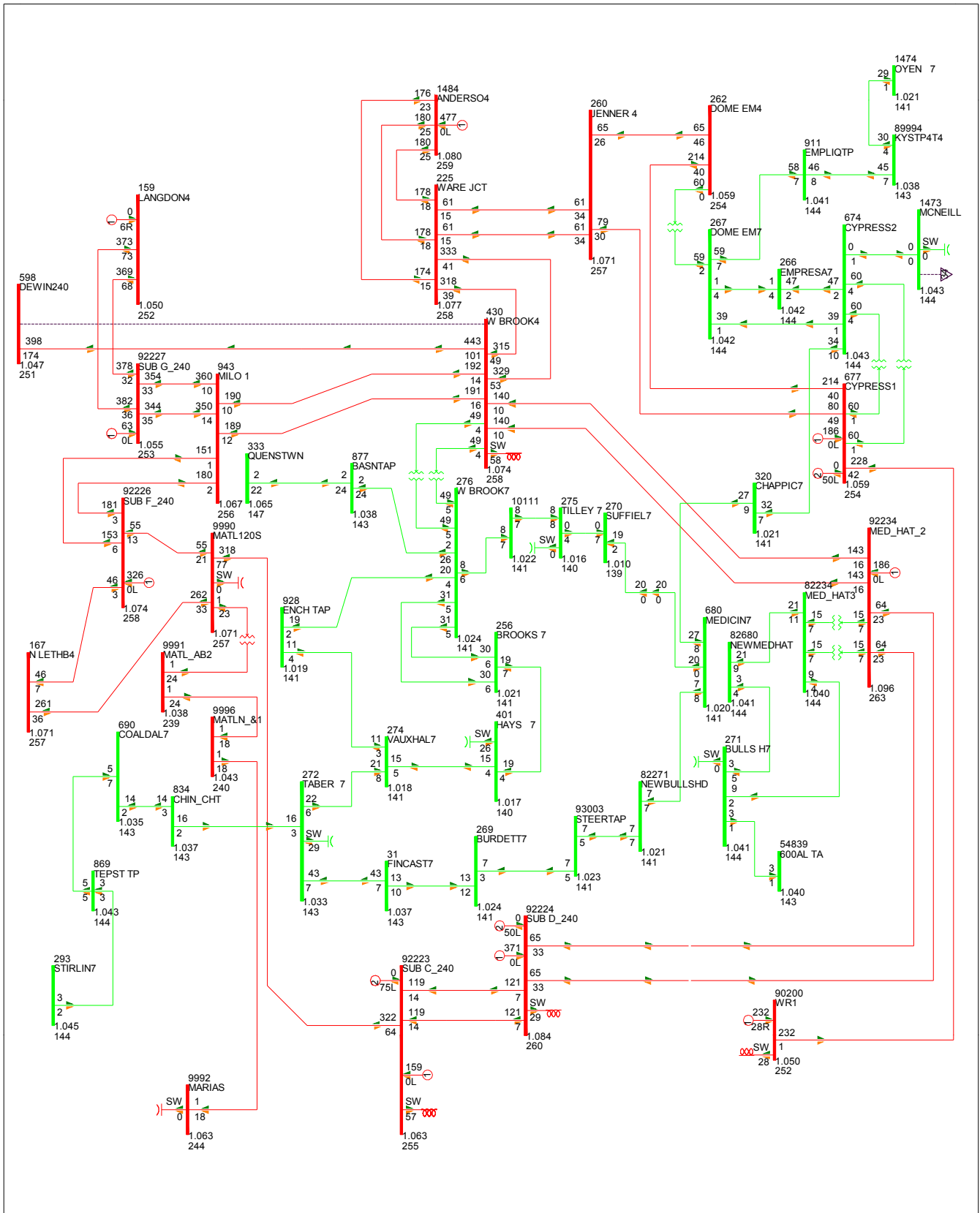


FIG 2017-1C-SP-19: WESTBROOKS TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

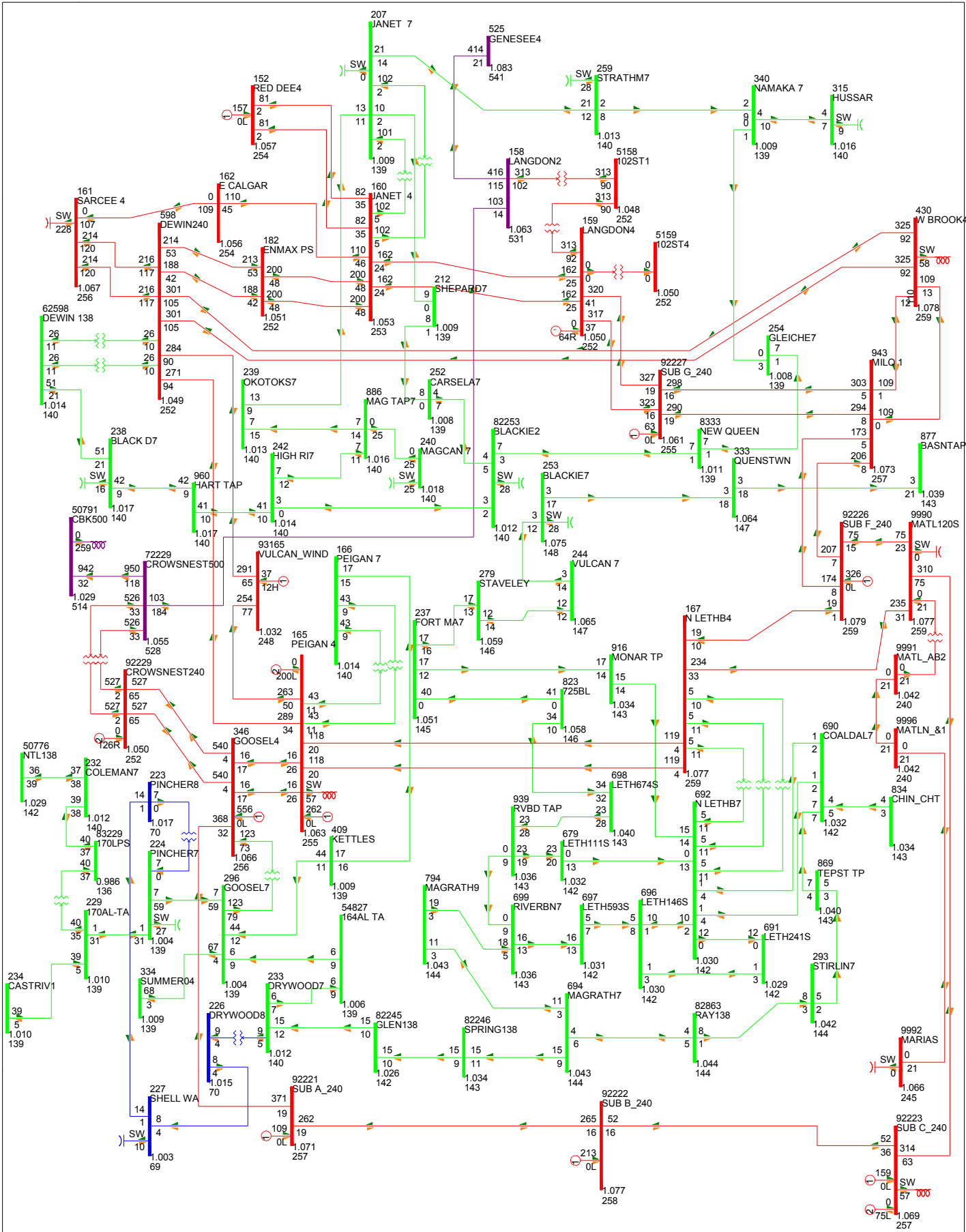


FIG 2017-1C-SP-20: WAREJUNC TO WESTBROOKS 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1012 MW

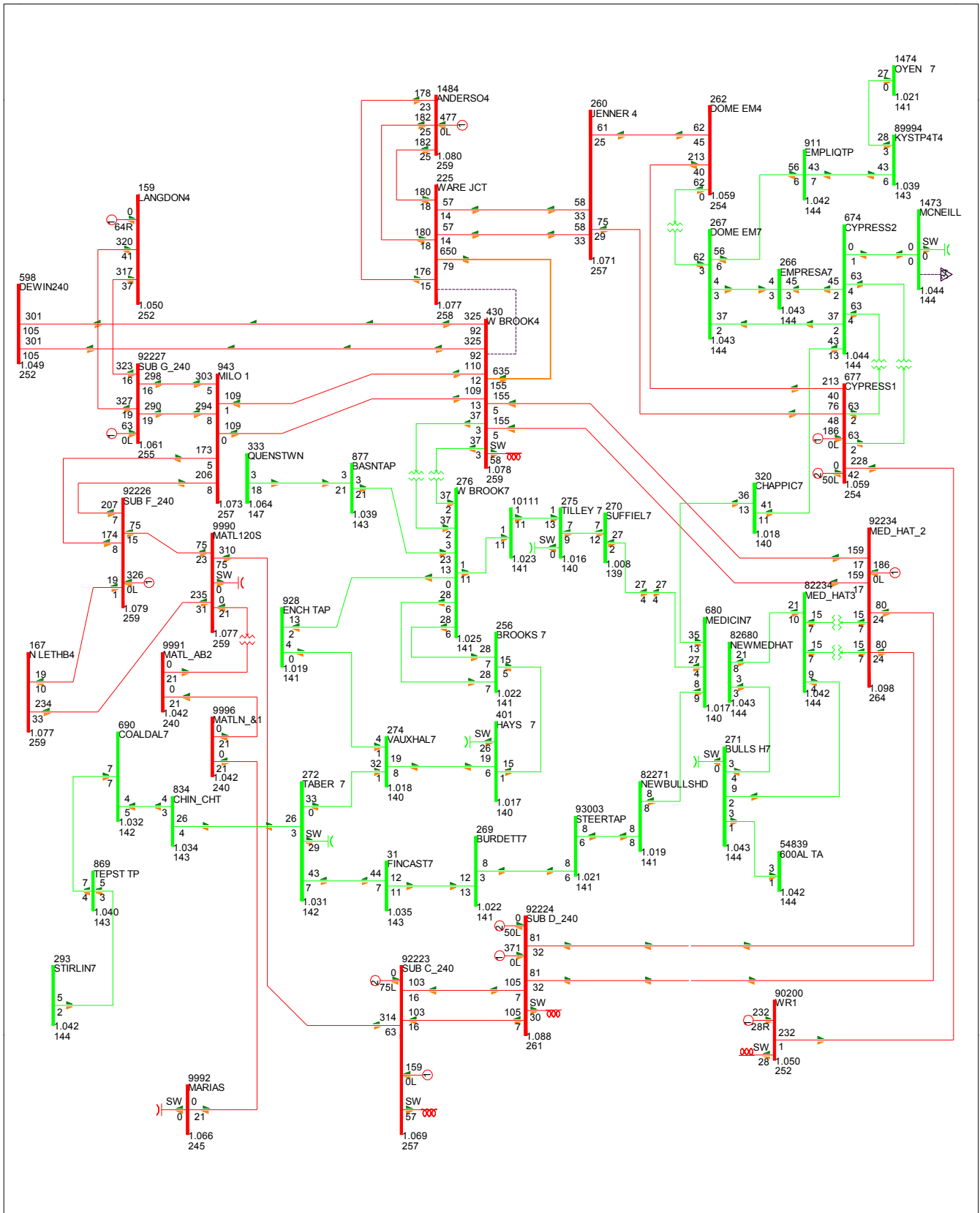


FIG 2017-1C-SP-21: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 1C

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1012 MW

GENERATION DISPATCH REPORT

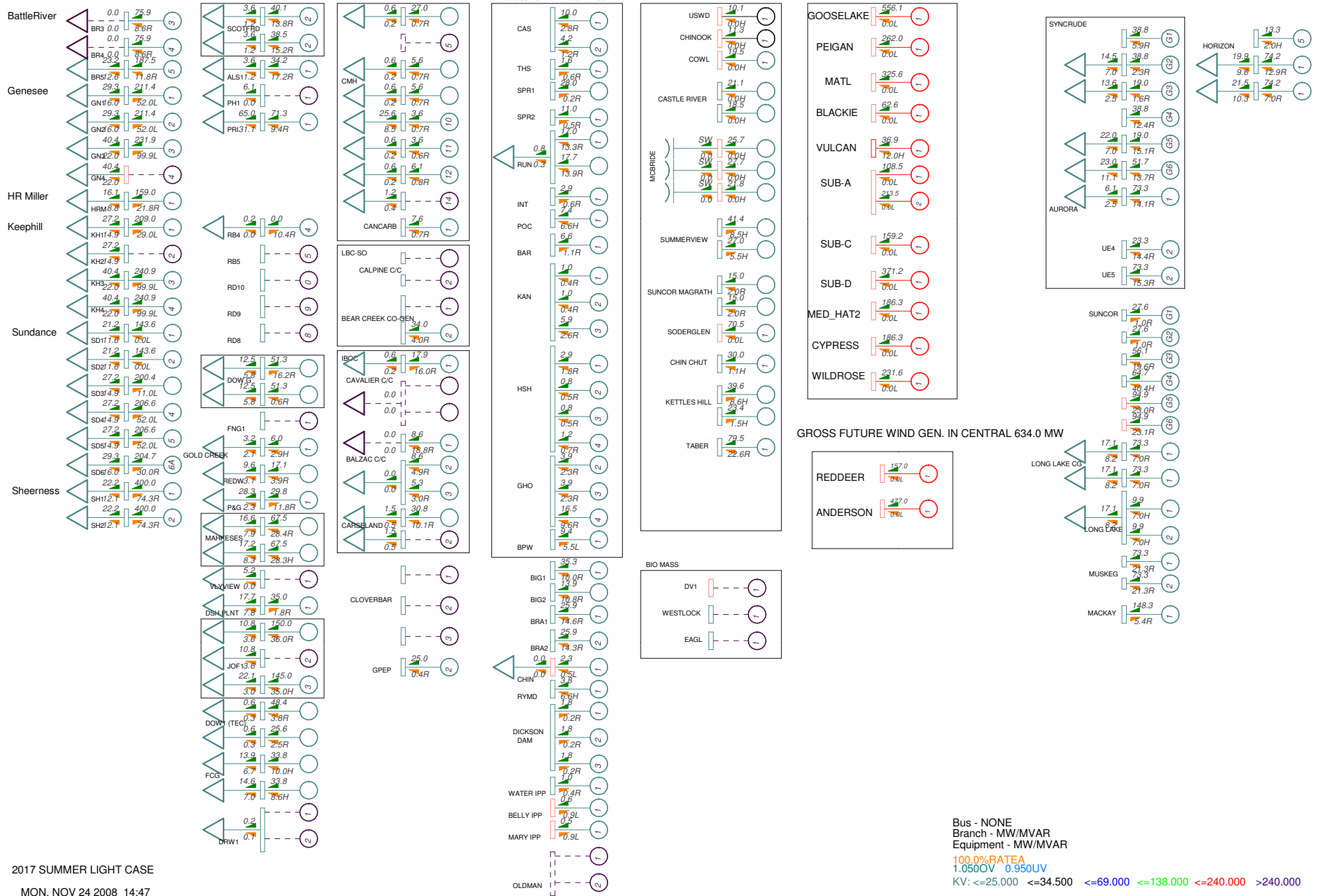
GROSS COAL GEN. 3749.2 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



2017 SUMMER LIGHT CASE

MON, NOV 24 2008 14:47

Bus - NONE
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%PATEA
 1.050OV 0.950UV
 KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-2-SL-1

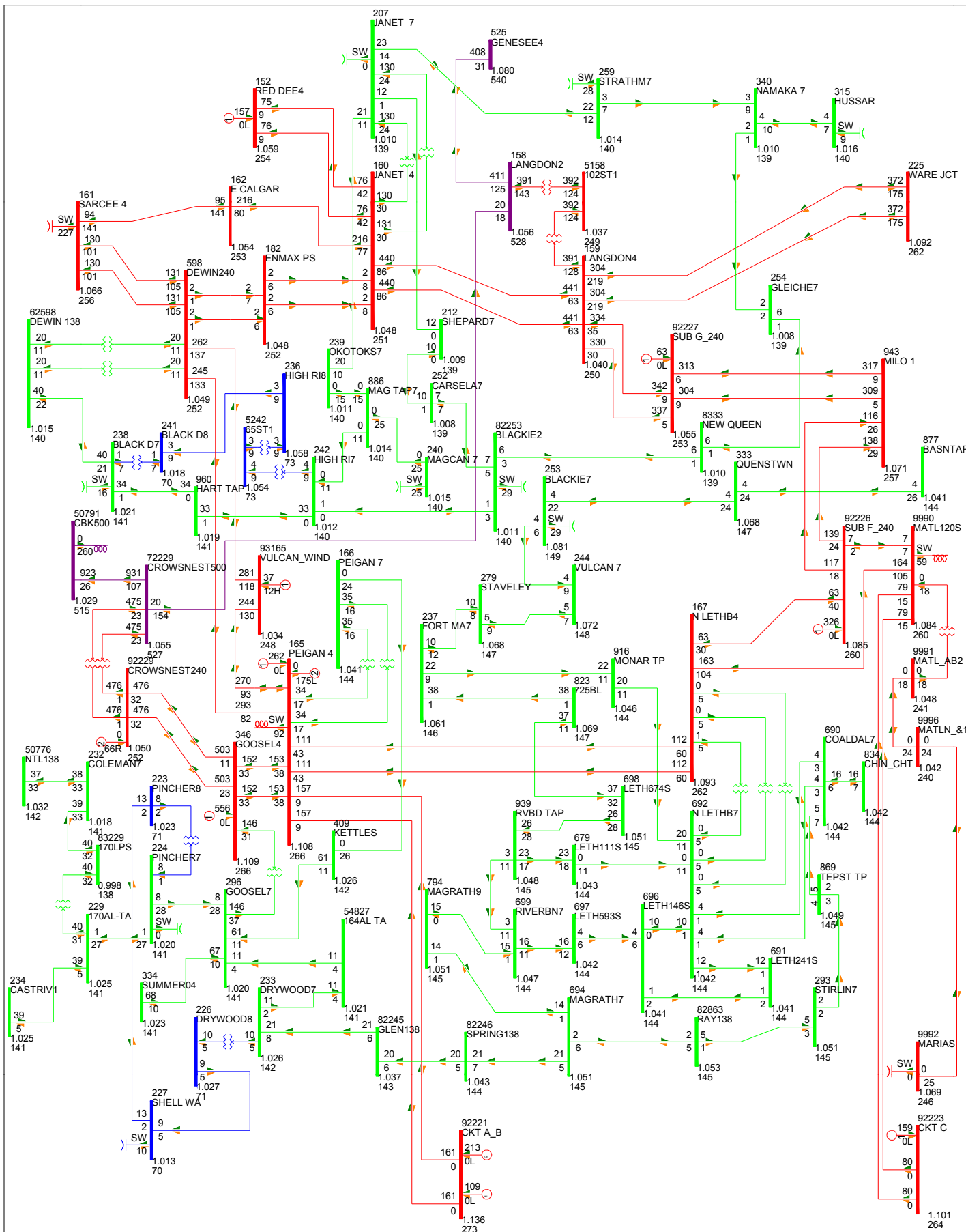


FIG 2017-2-SL-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 990 MW

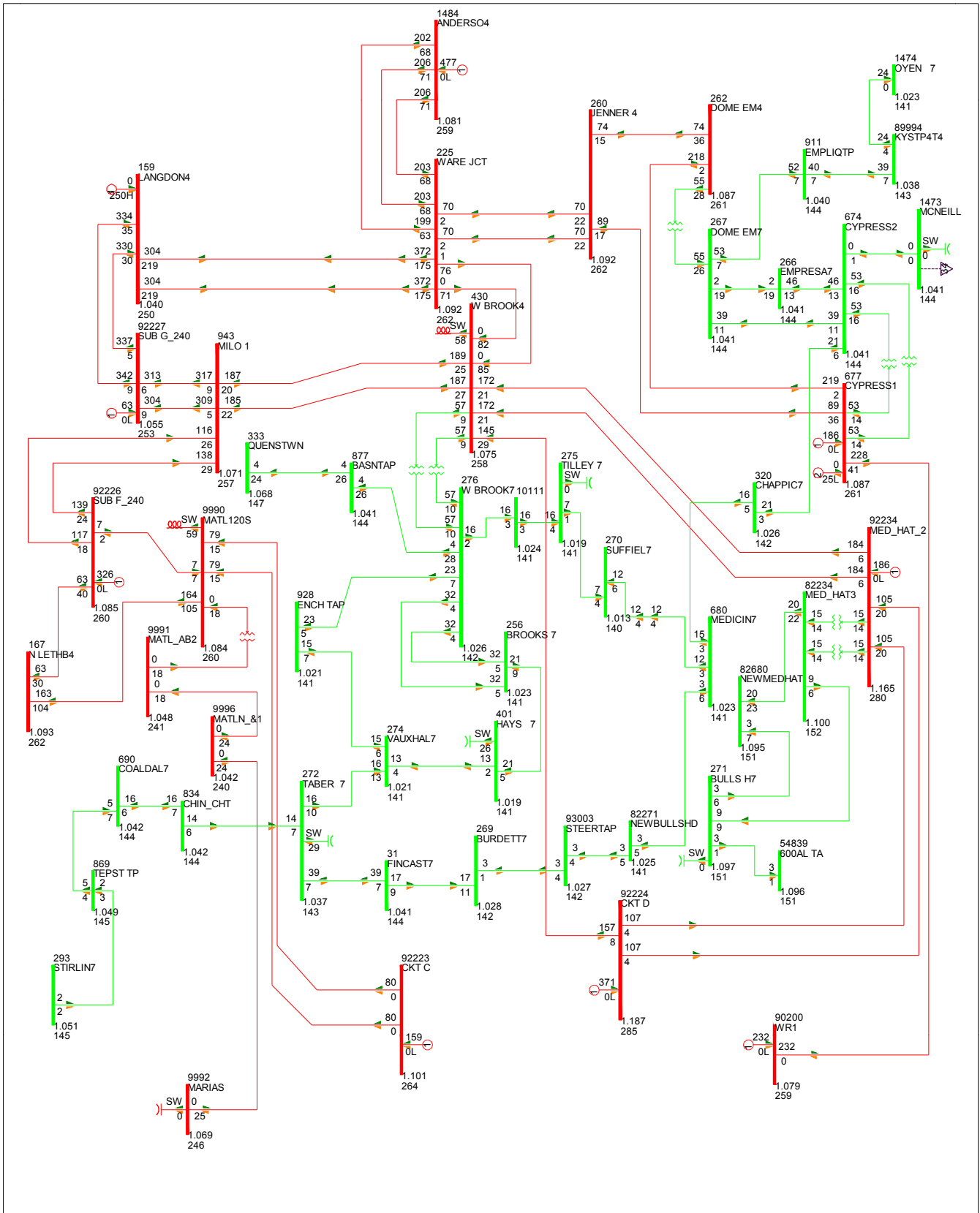


FIG 2017-2-SL-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 990 MW

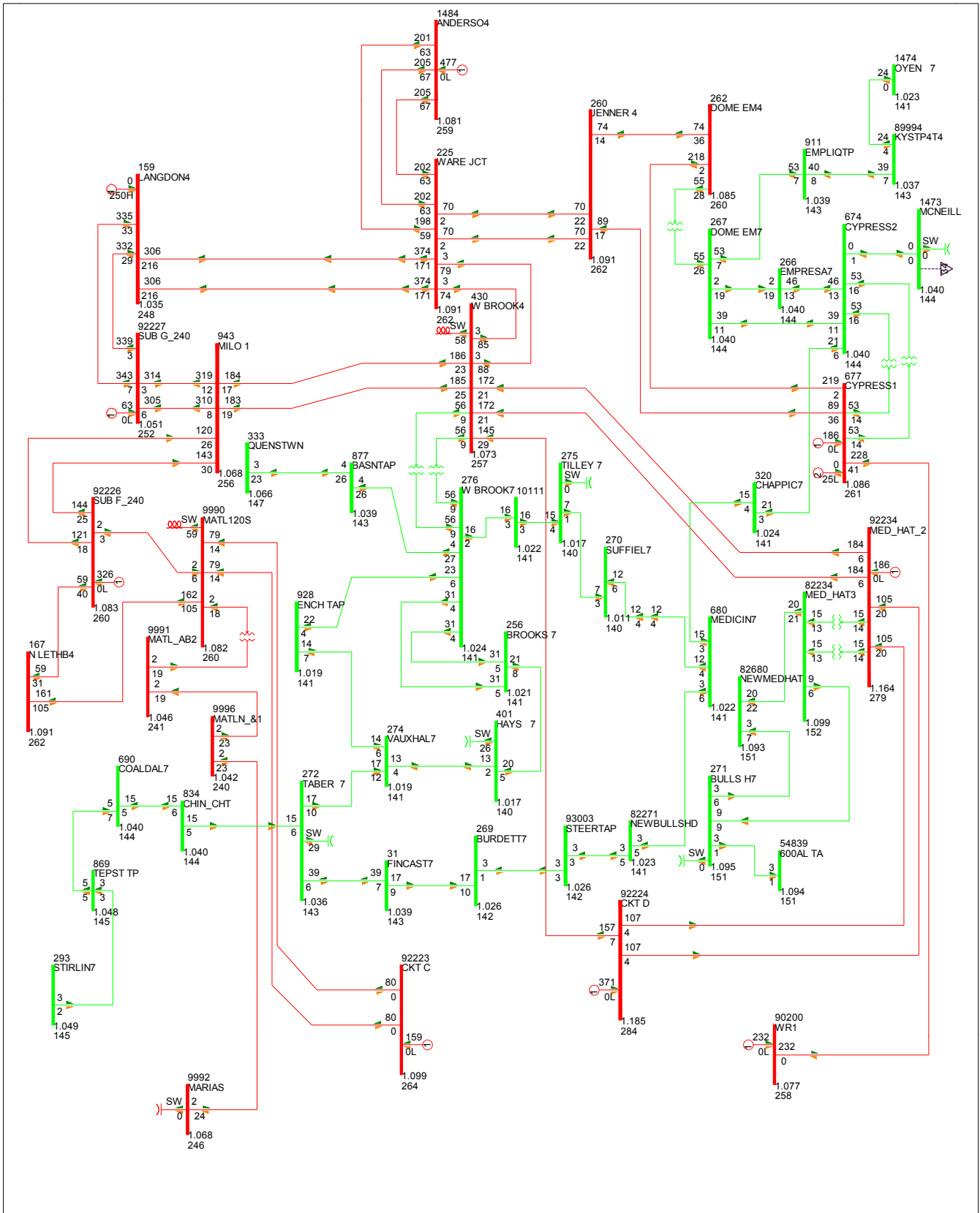


FIG 2017-2-SL-5: LANGDON TO CROWNSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

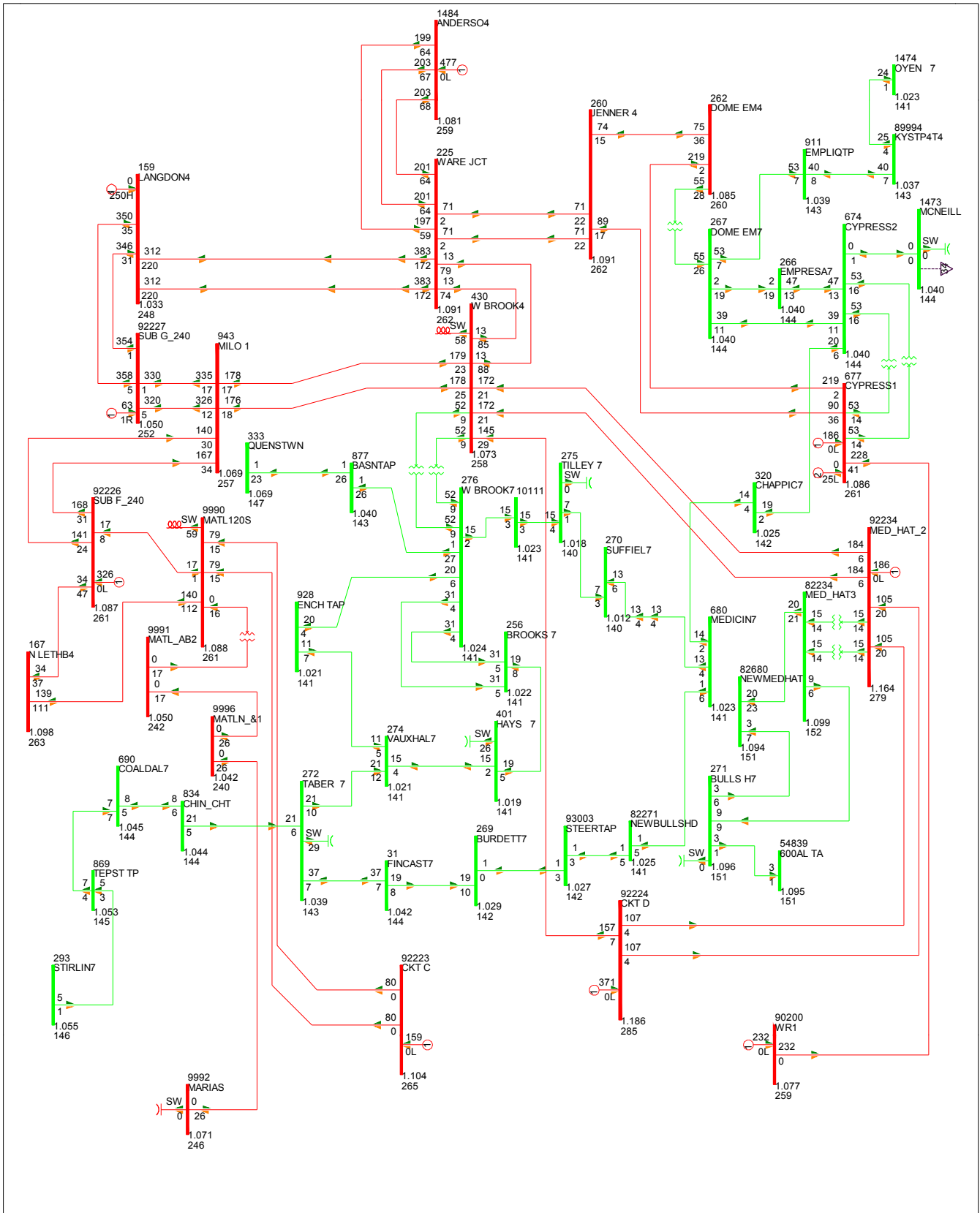


FIG 2017-2-SL-7: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:23

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 931 MW

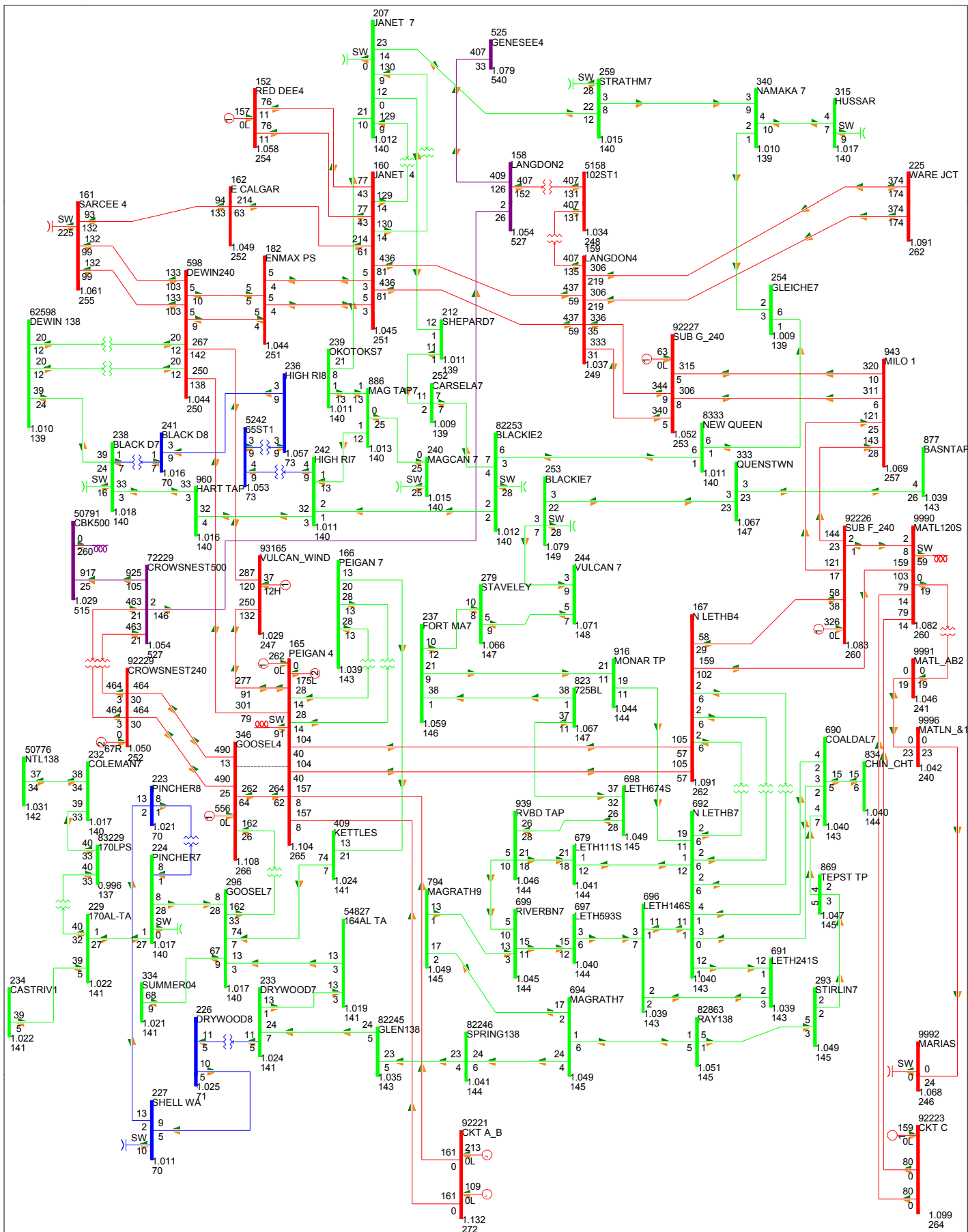


FIG 2017-2-SL-8: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 984 MW

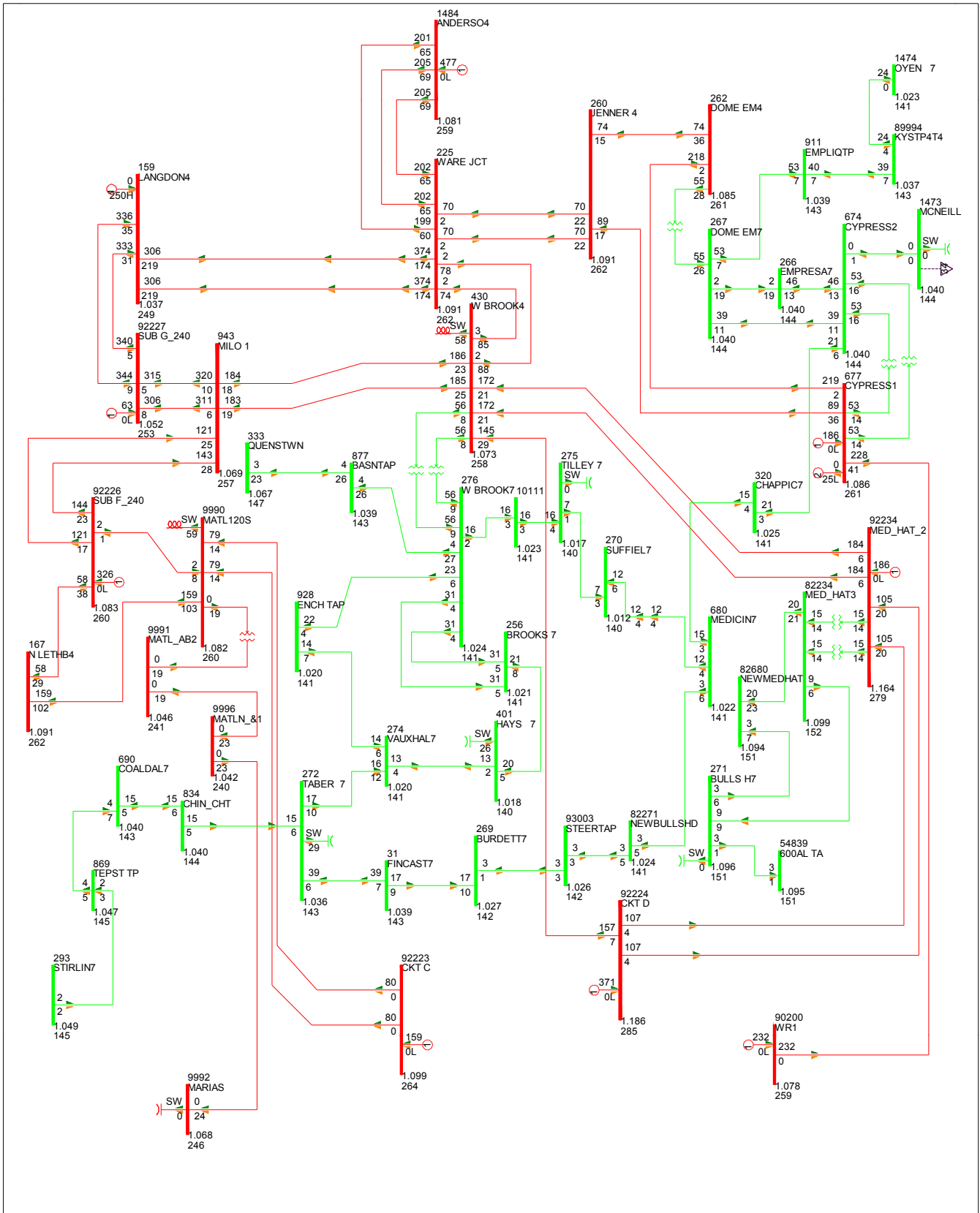


FIG 2017-2-SL-9: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 984 MW

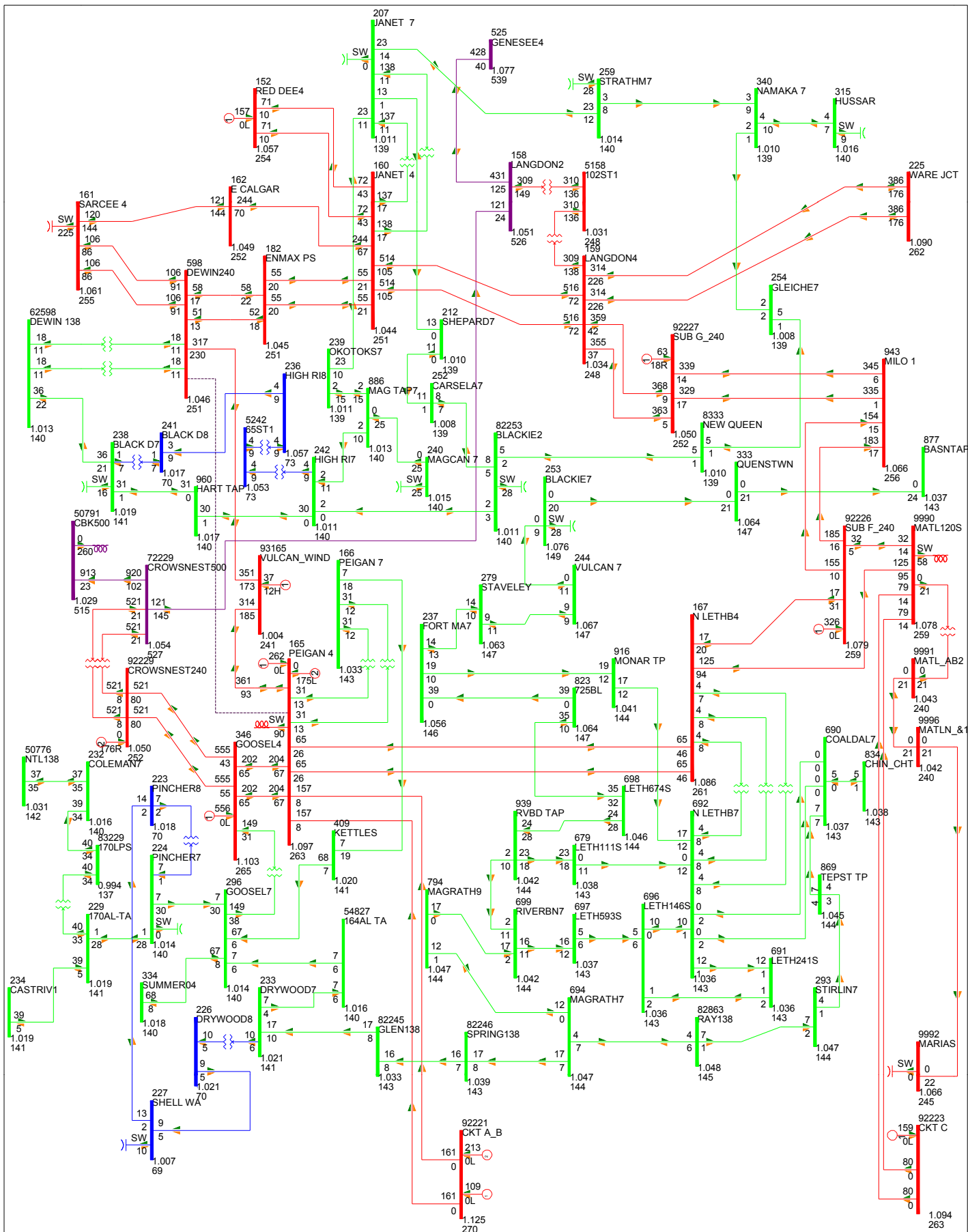


FIG 2017-2-SL-10: PEIGAN TO DEWINTON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 973 MW

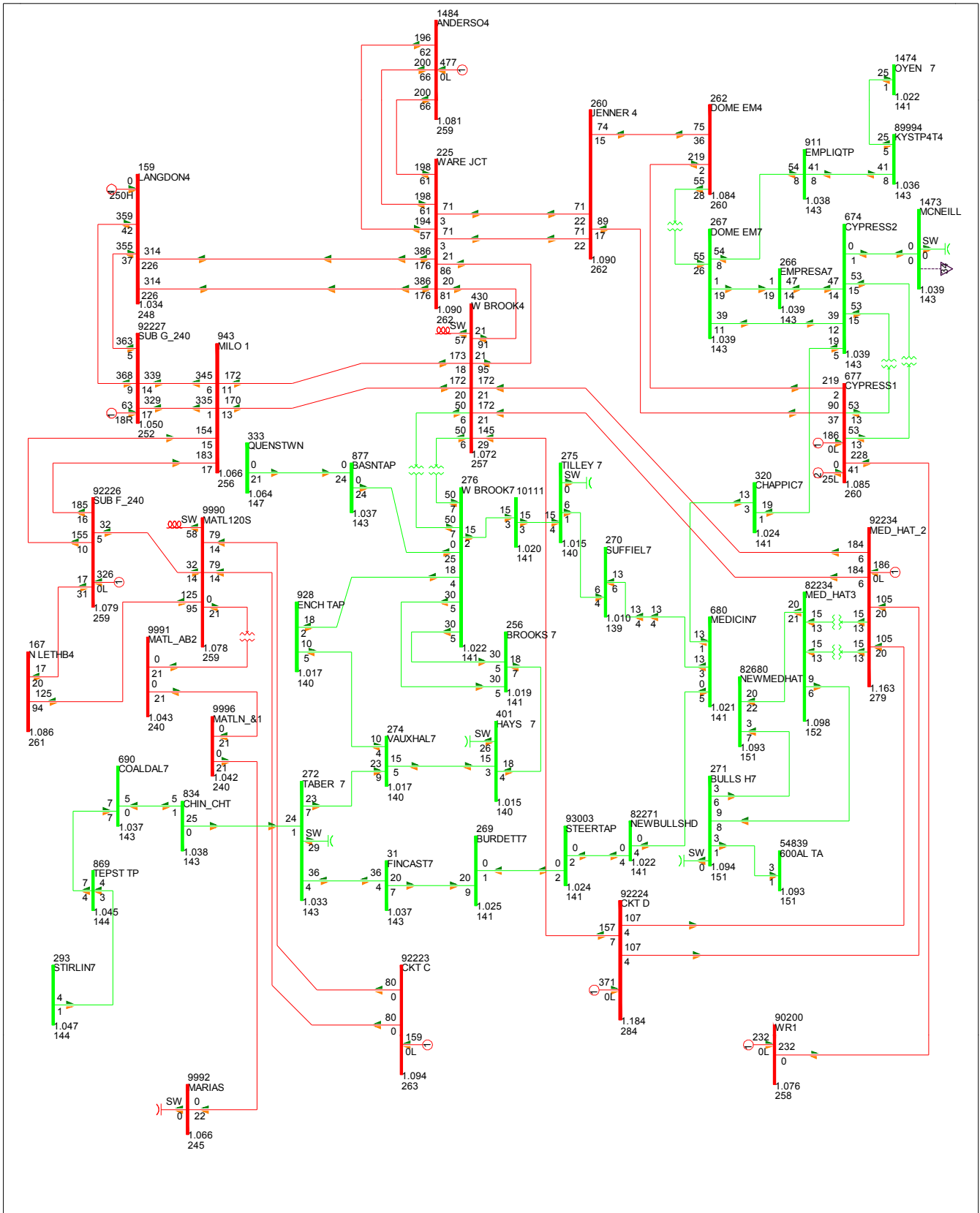


FIG 2017-2-SL-11: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 973 MW

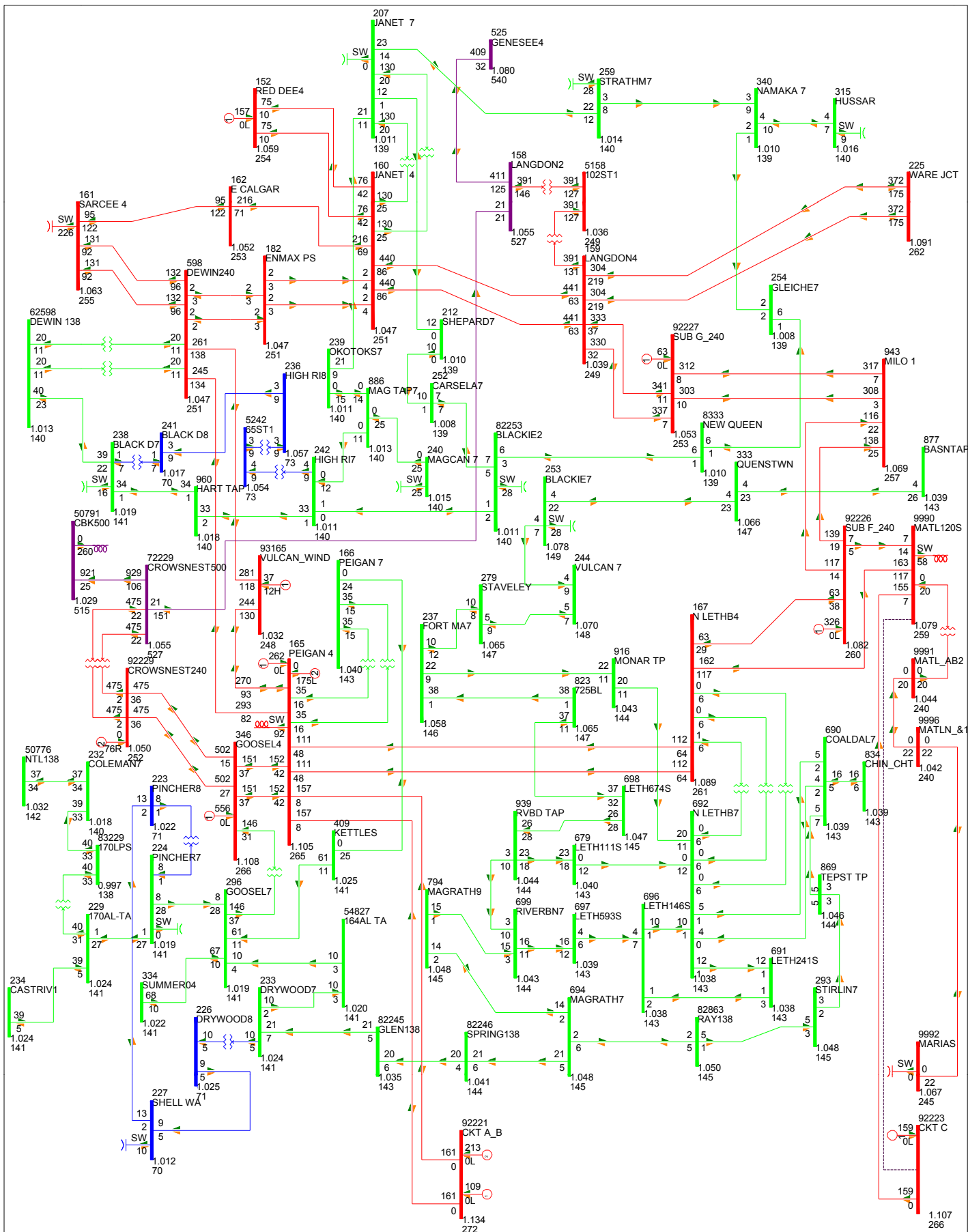


FIG 2017-2-SL-12: MATL TO SUB C 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

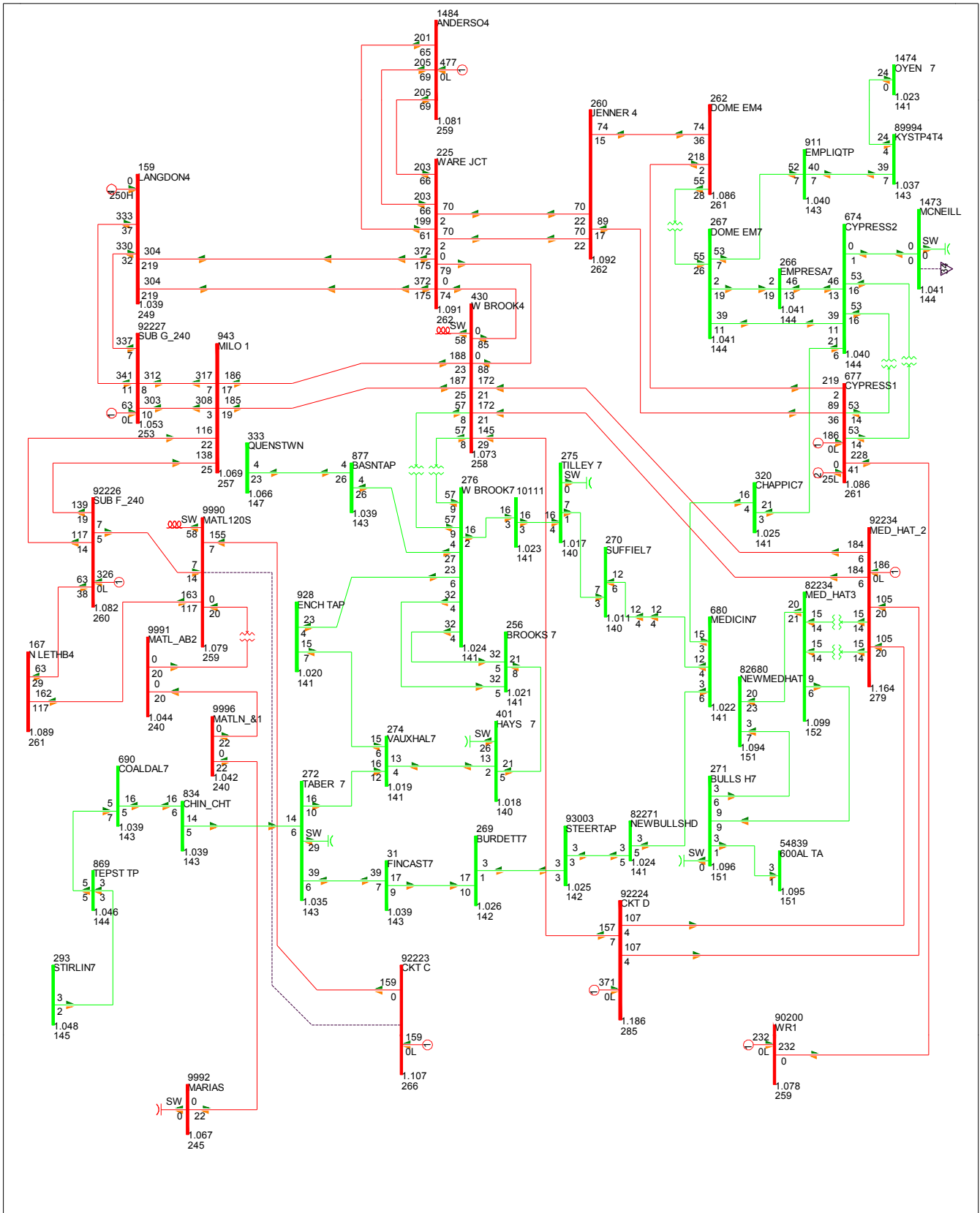


FIG 2017-2-SL-13: MATL TO SUB C 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

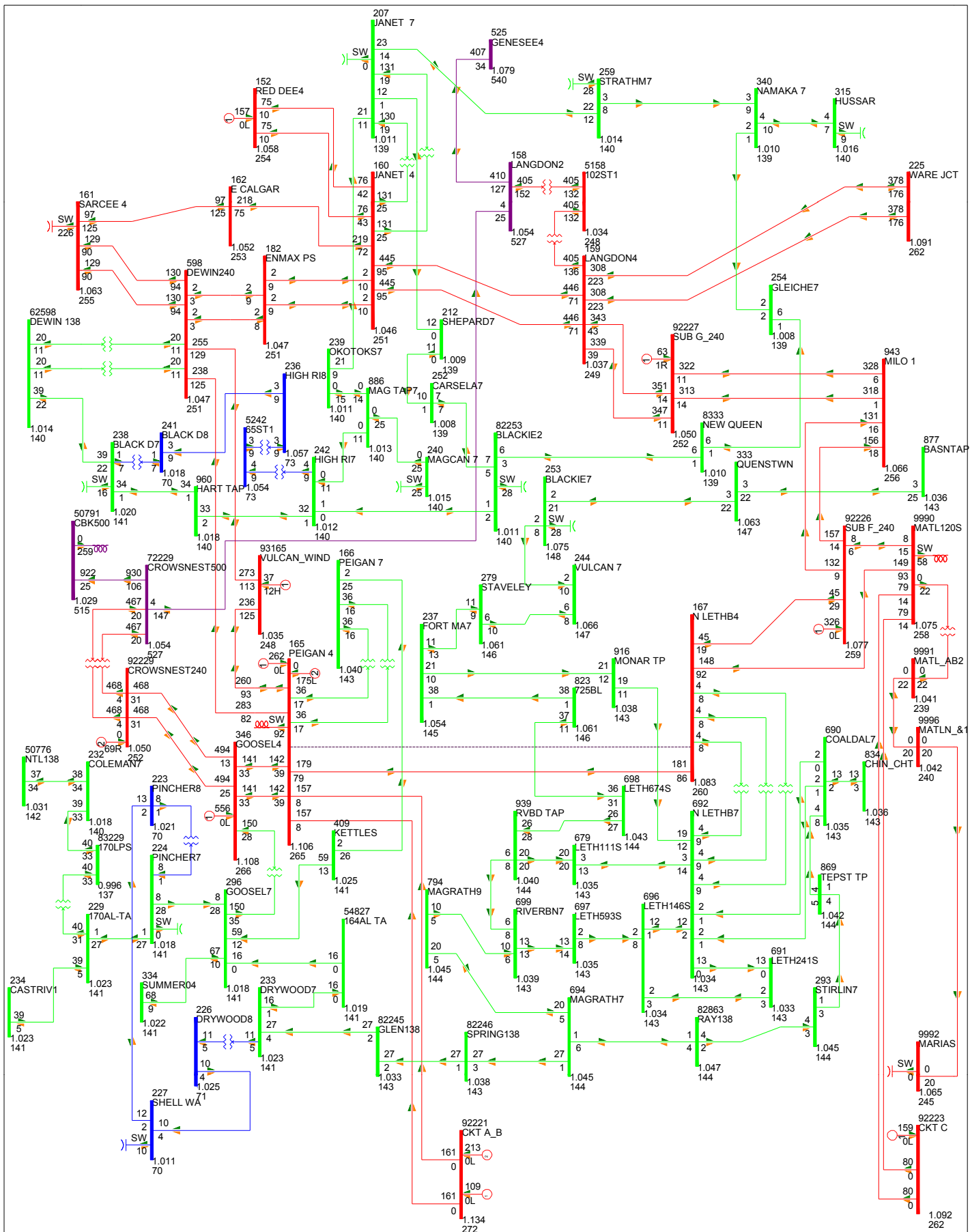


FIG 2017-2-SL-14: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 990 MW

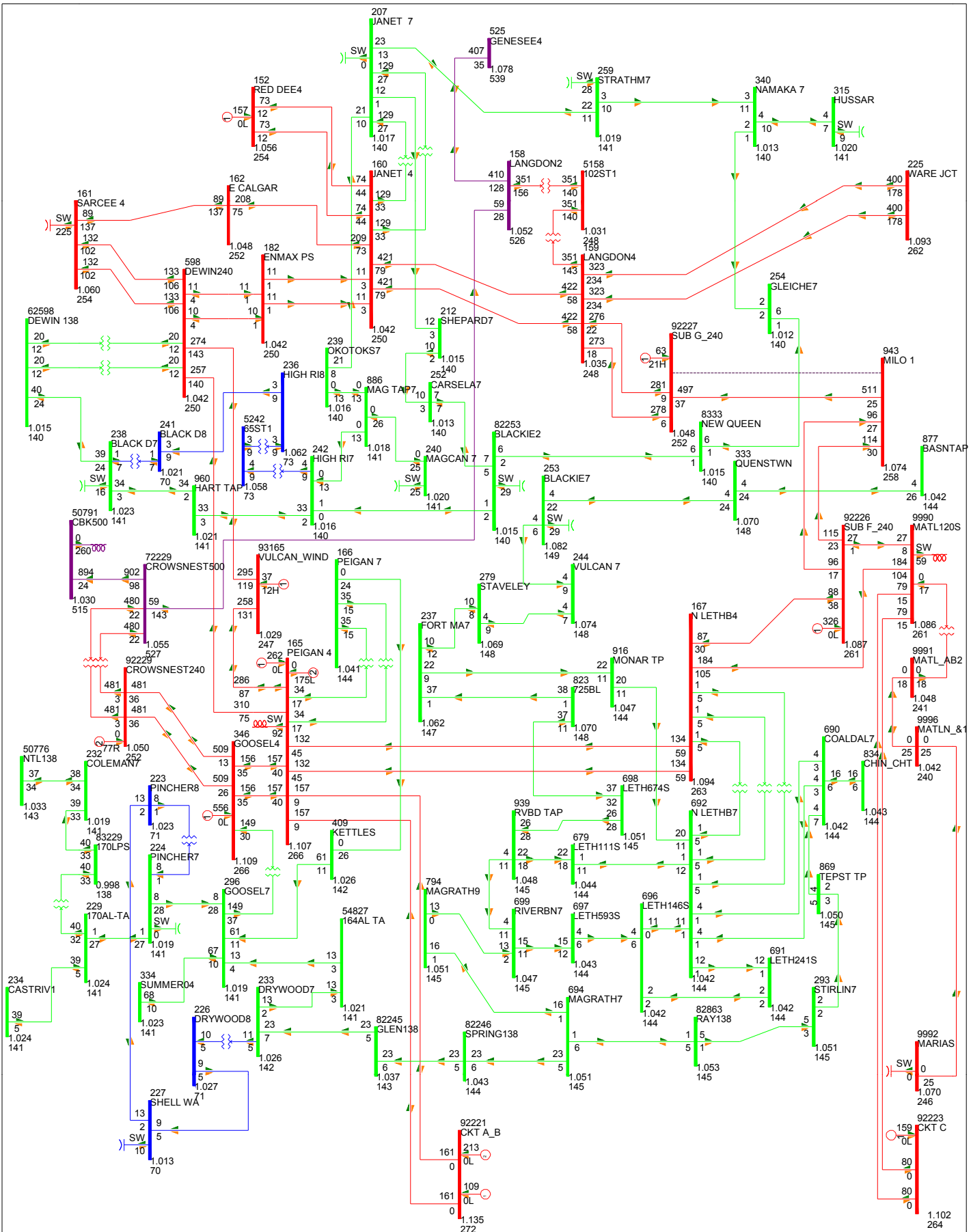


FIG 2017-2-SL-16: MILO TO SUB G 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 959 MW

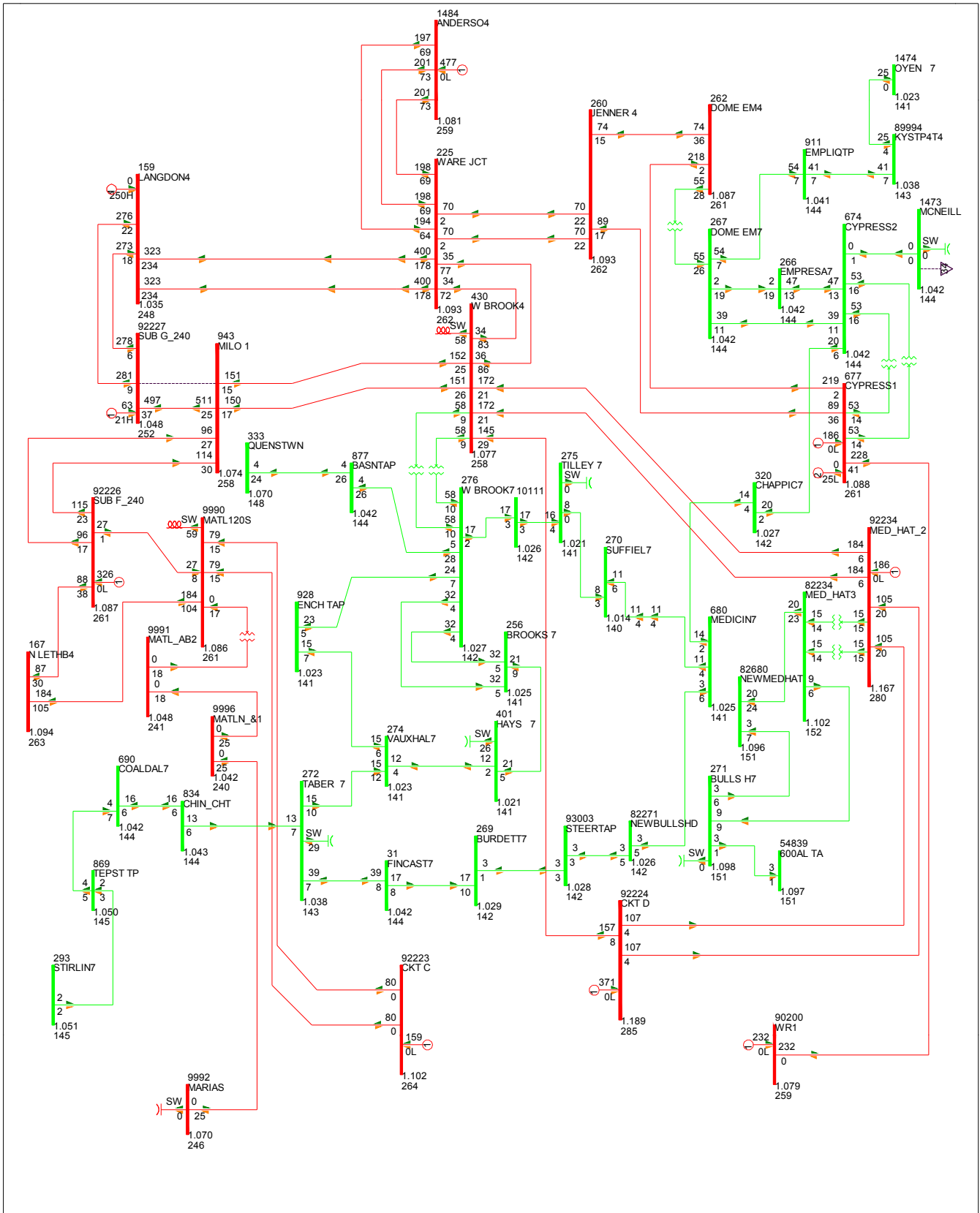


FIG 2017-2-SL-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 959 MW

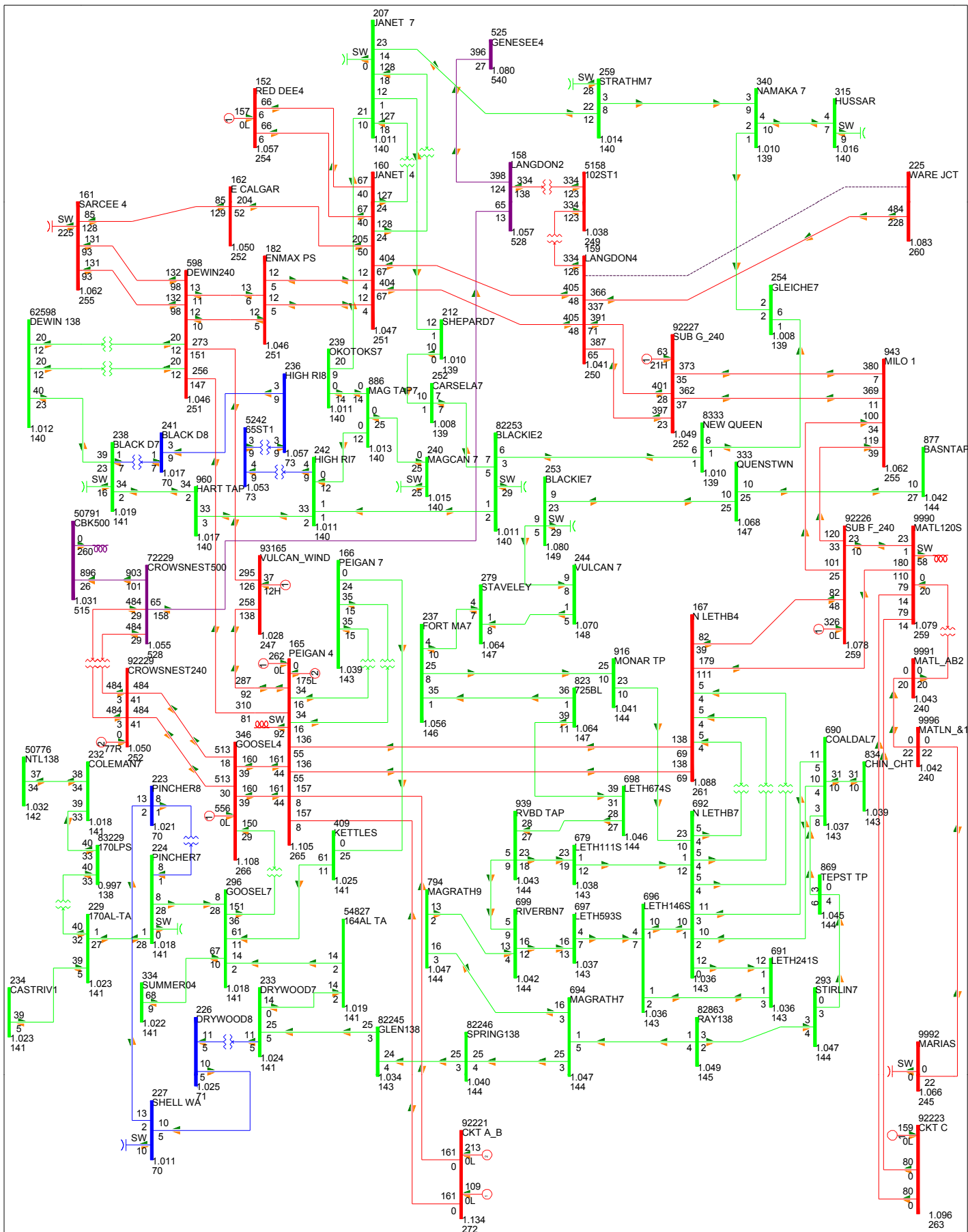


FIG 2017-2-SL-18: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 960 MW

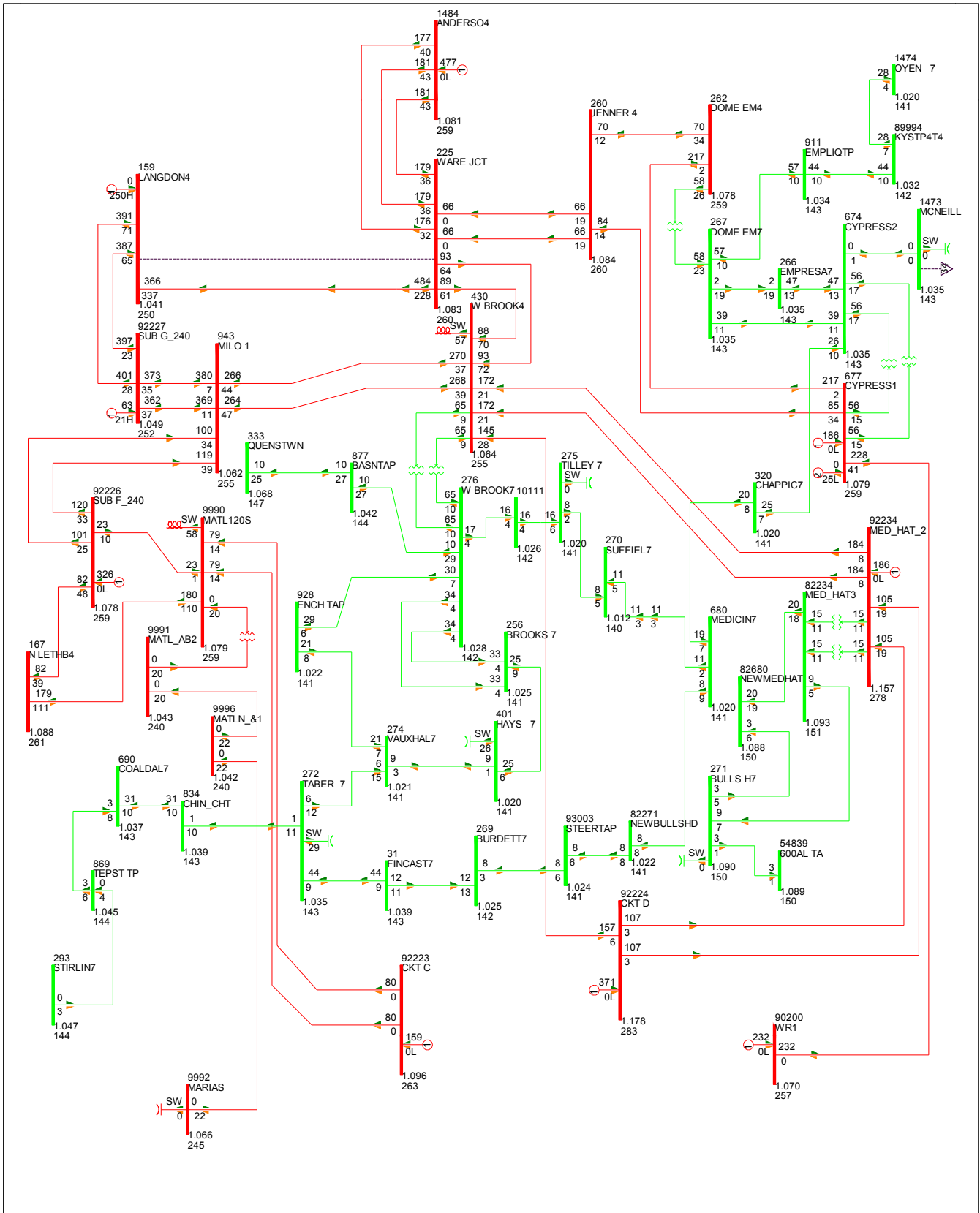


FIG 2017-2-SL-19: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 960 MW

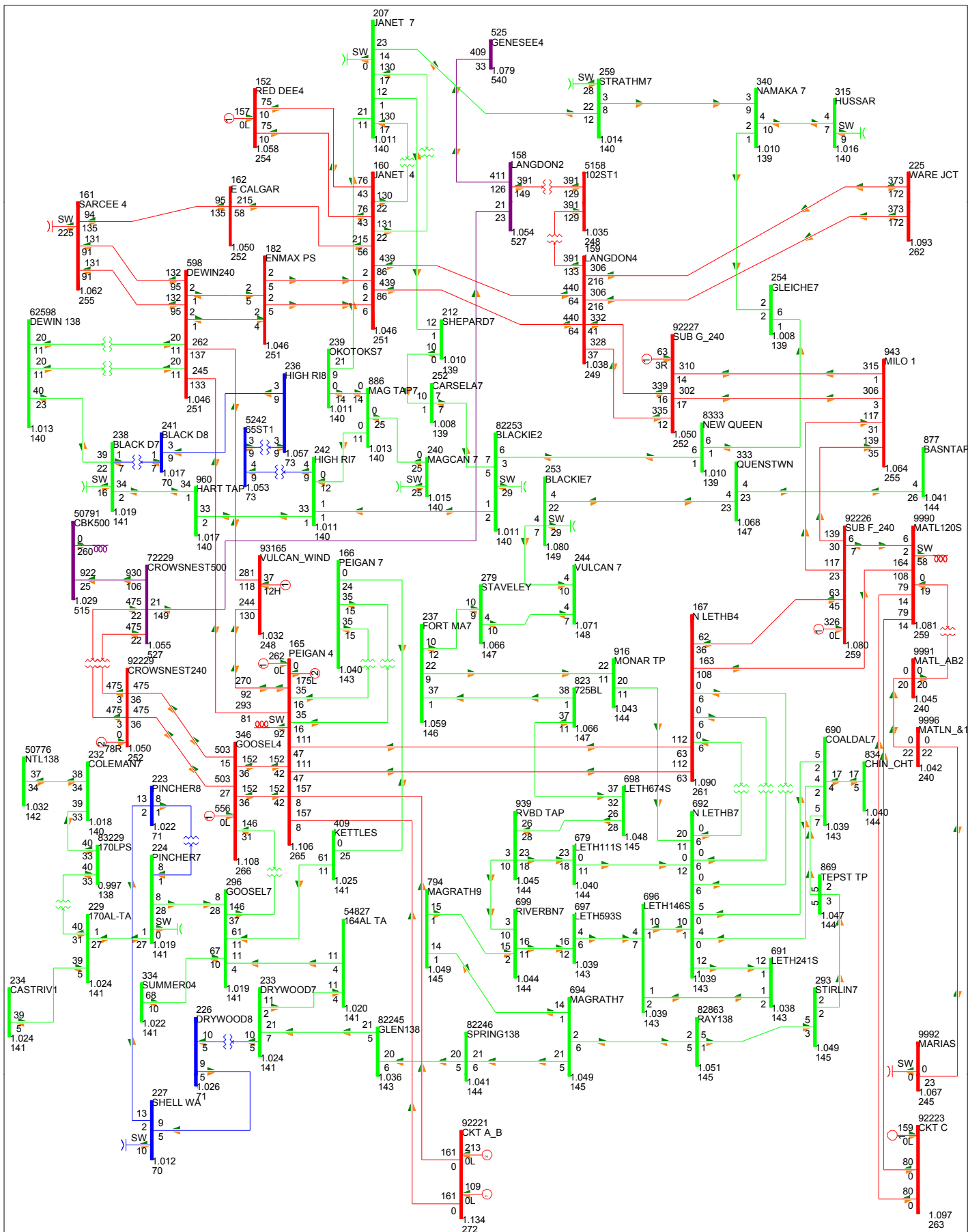


FIG 2017-2-SL-20: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 988 MW

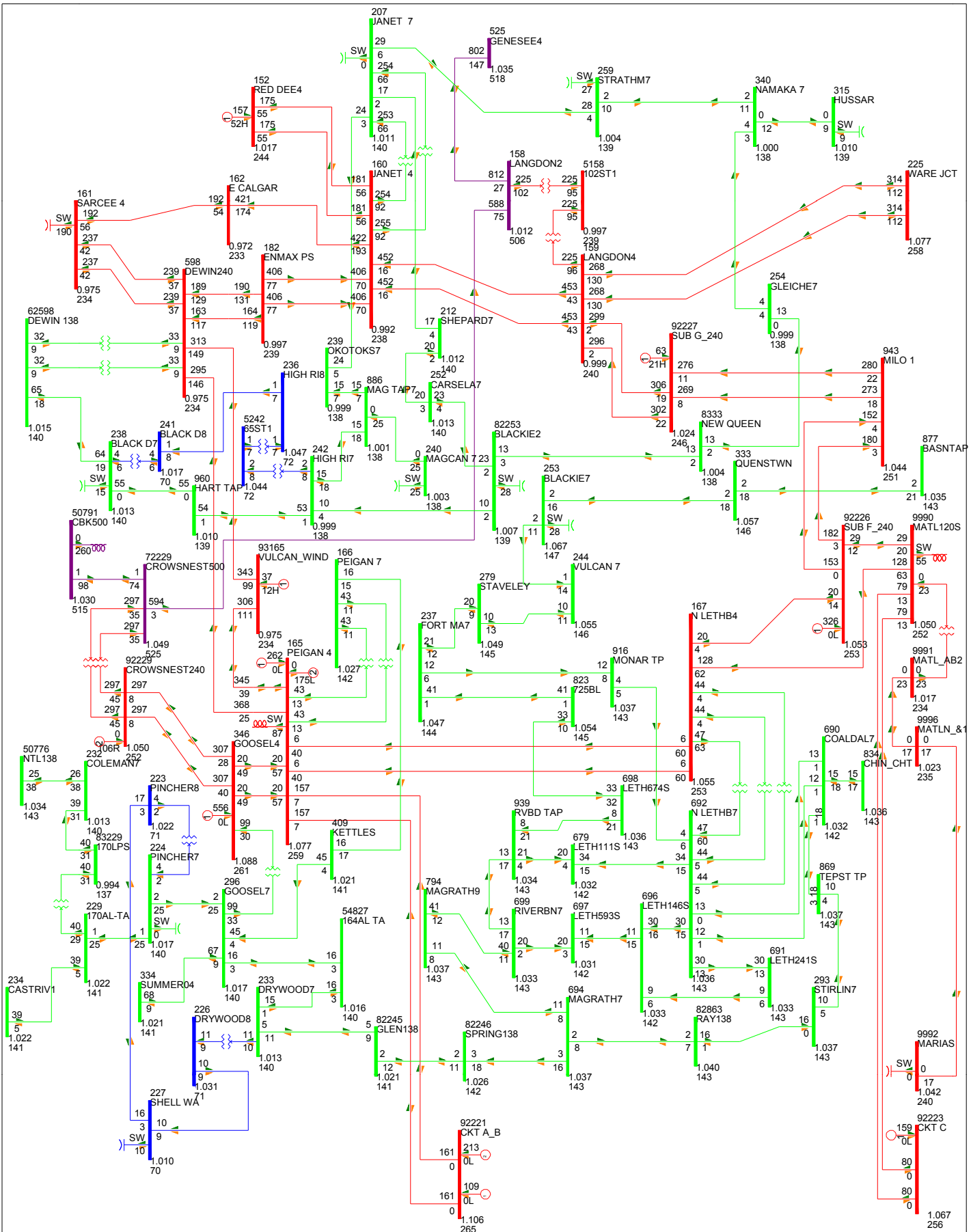


FIG 2017-2-SP-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -8 MW

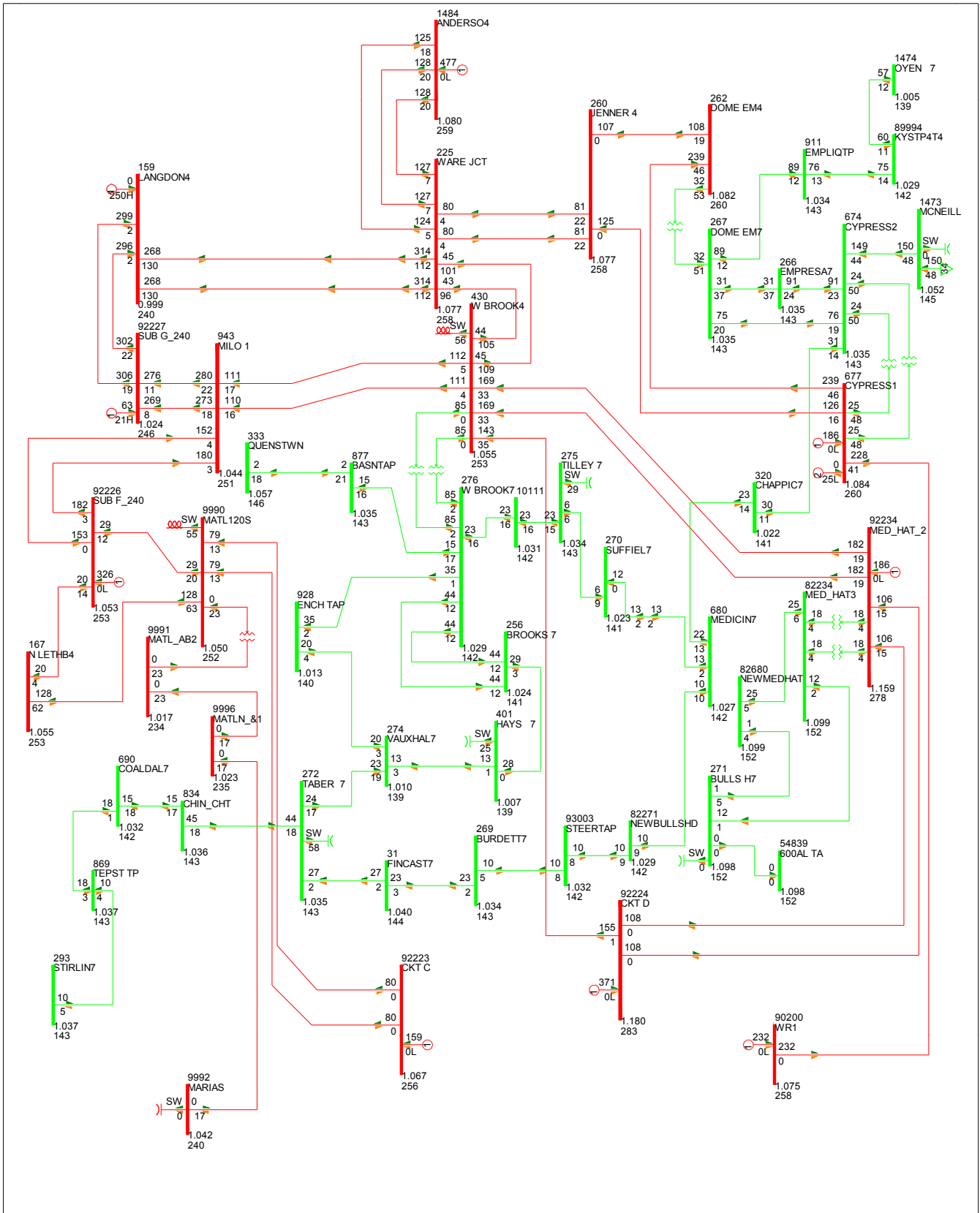


FIG 2017-2-SP-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -8 MW

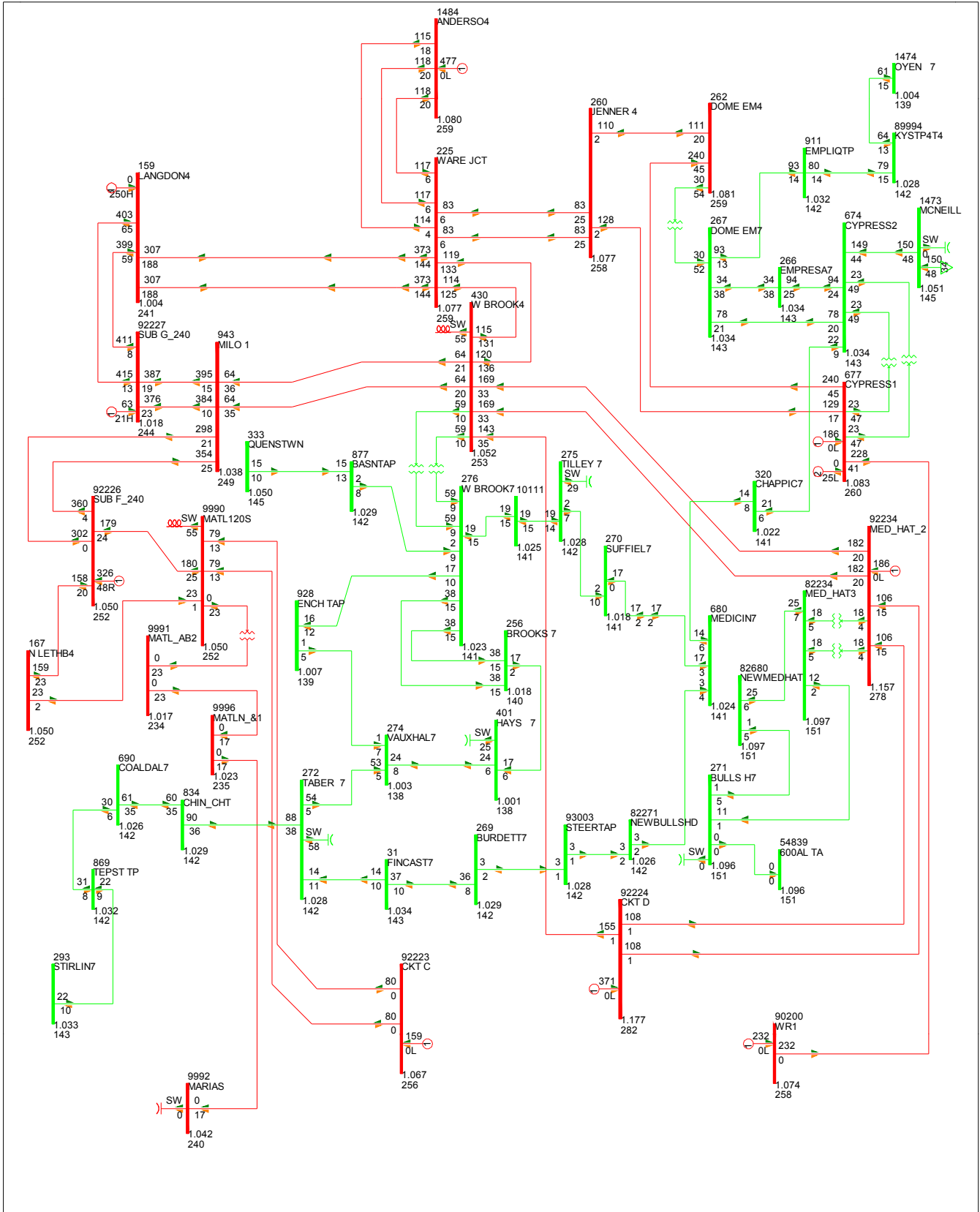


FIG 2017-2-SP-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:36

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -367 MW

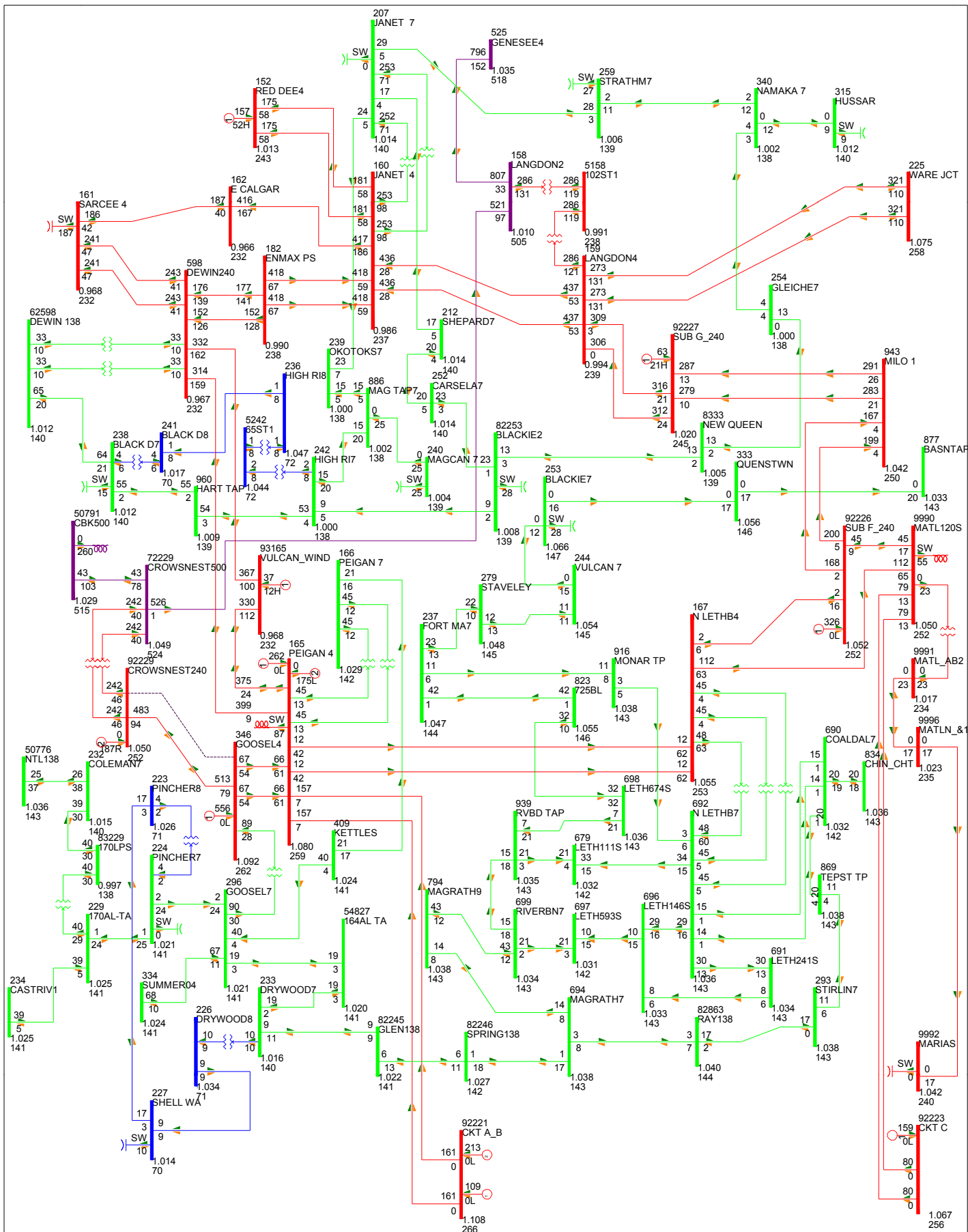


FIG 2017-2-SP-6: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:23

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -48 MW

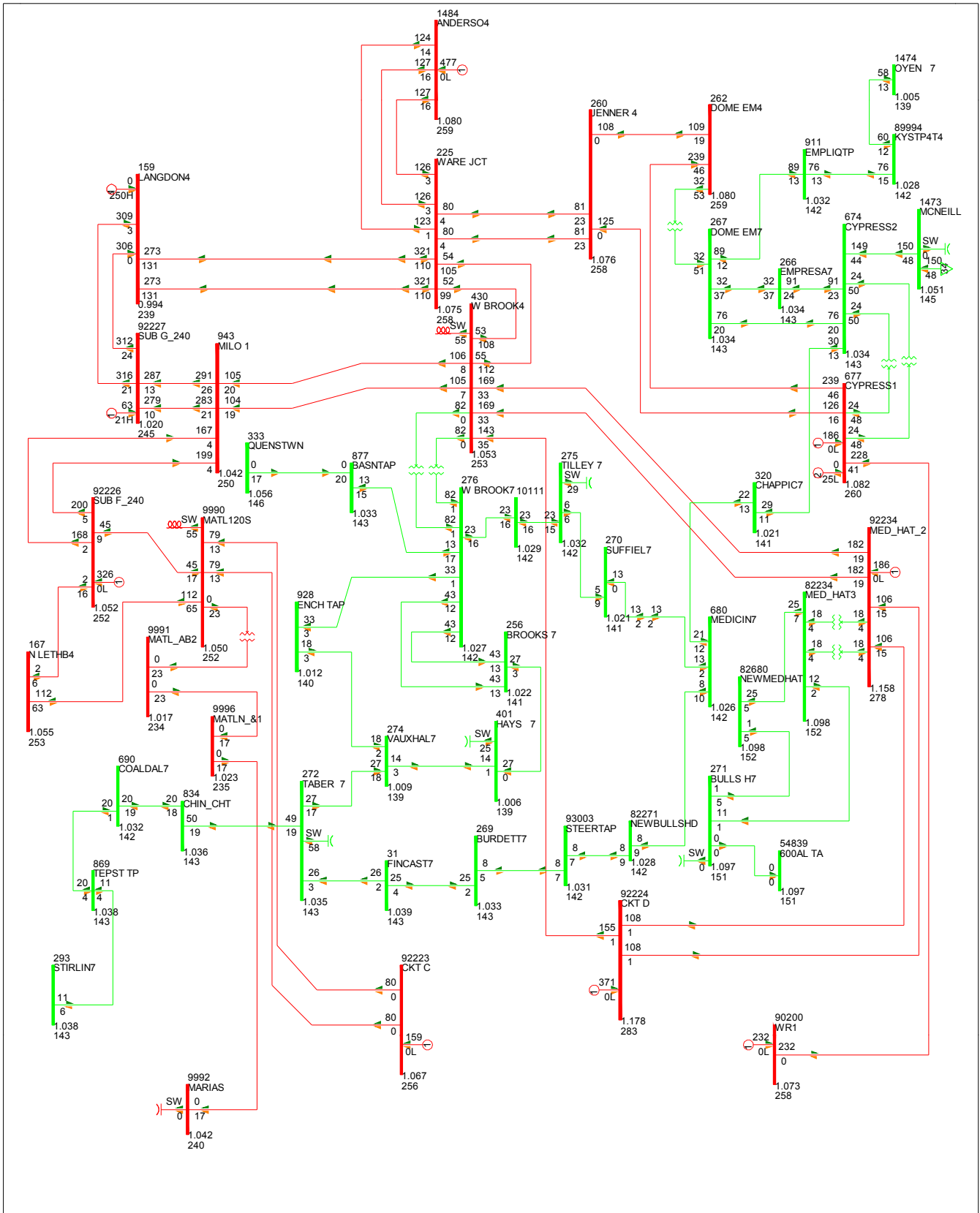


FIG 2017-2-SP-7: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:23

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -48 MW

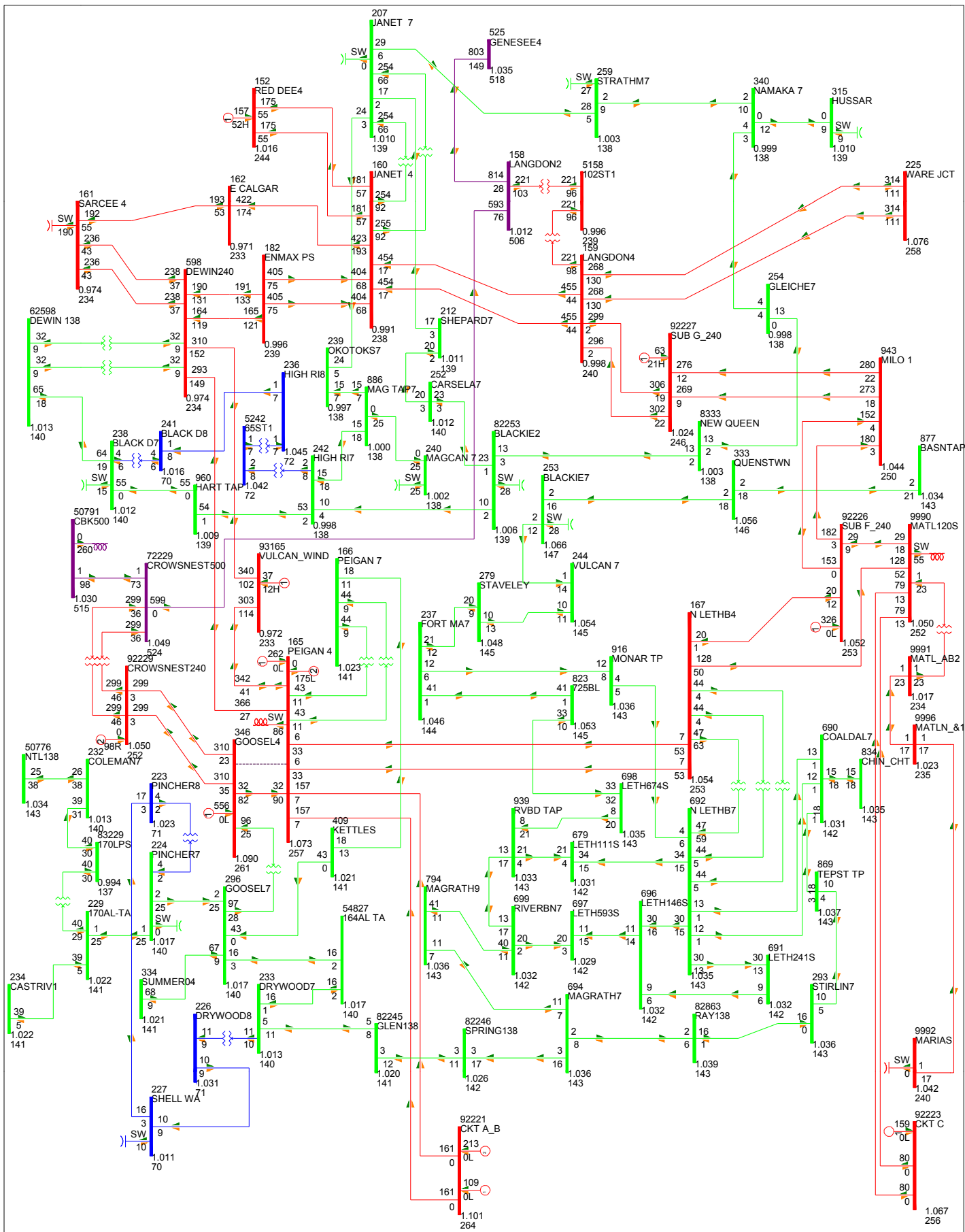


FIG 2017-2-SP-8: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -8 MW

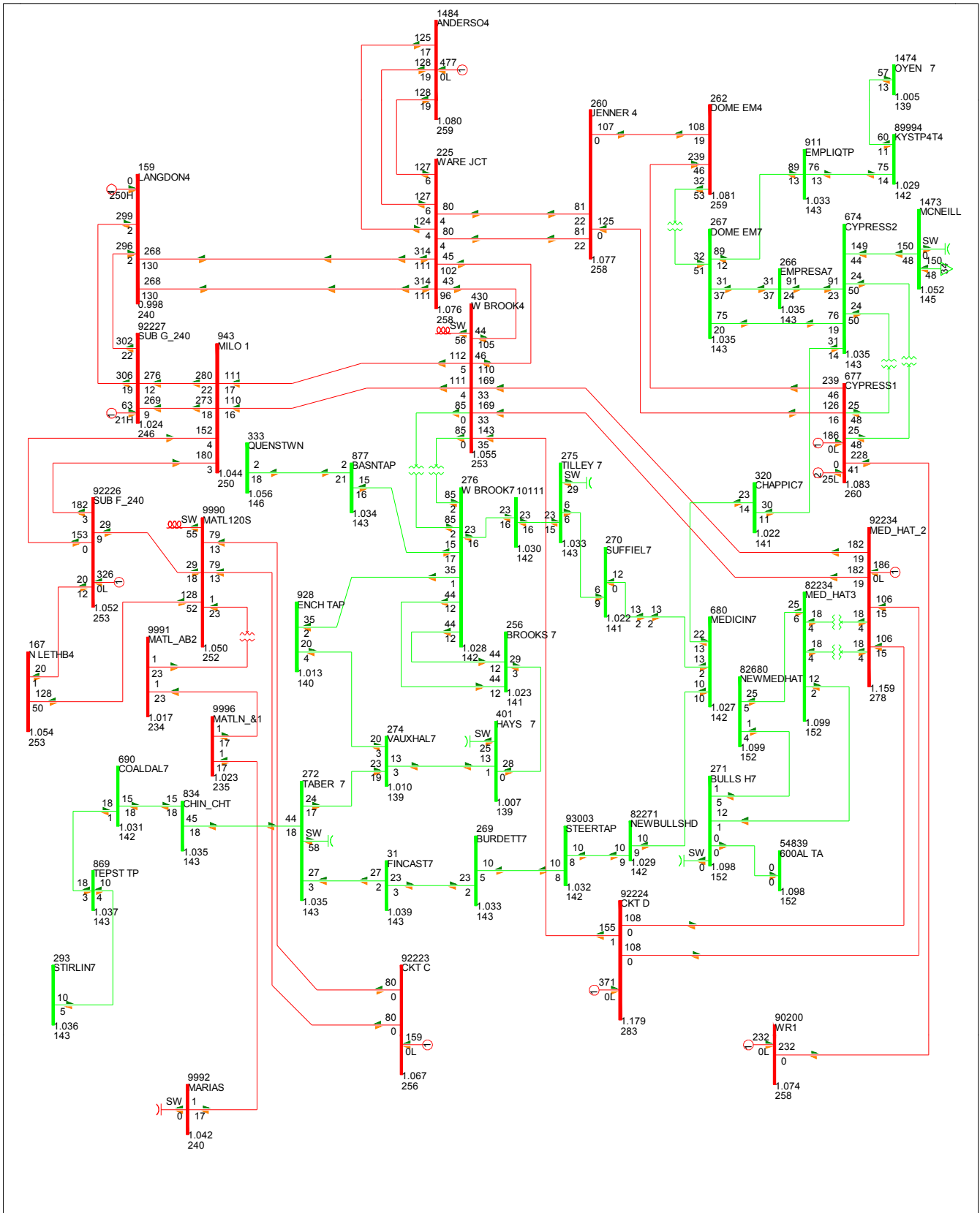


FIG 2017-2-SP-9: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -8 MW

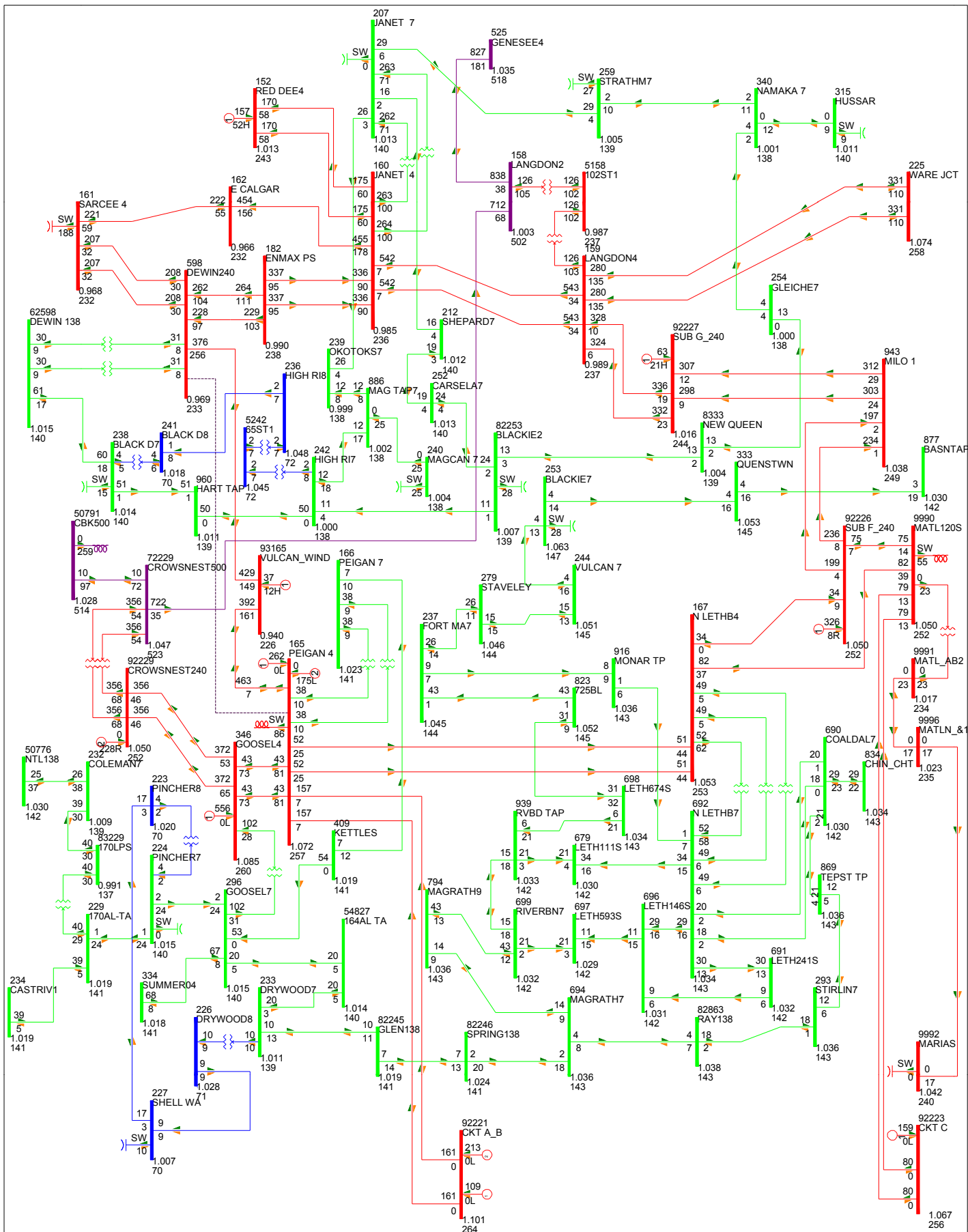


FIG 2017-2-SP-10: PEIGAN TO DEWINTON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -25 MW

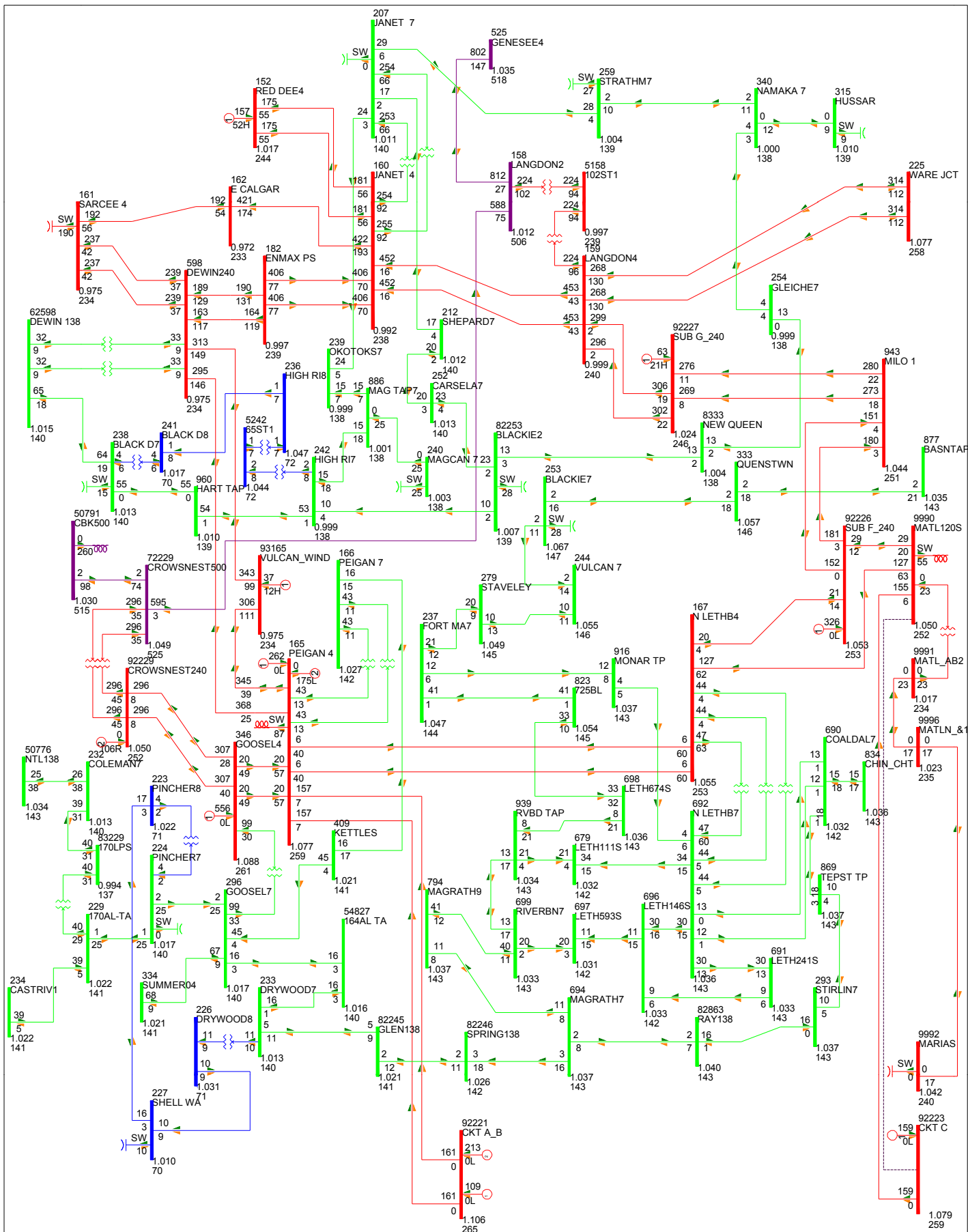


FIG 2017-2-SP-12: MATL TO SUB C 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -10 MW

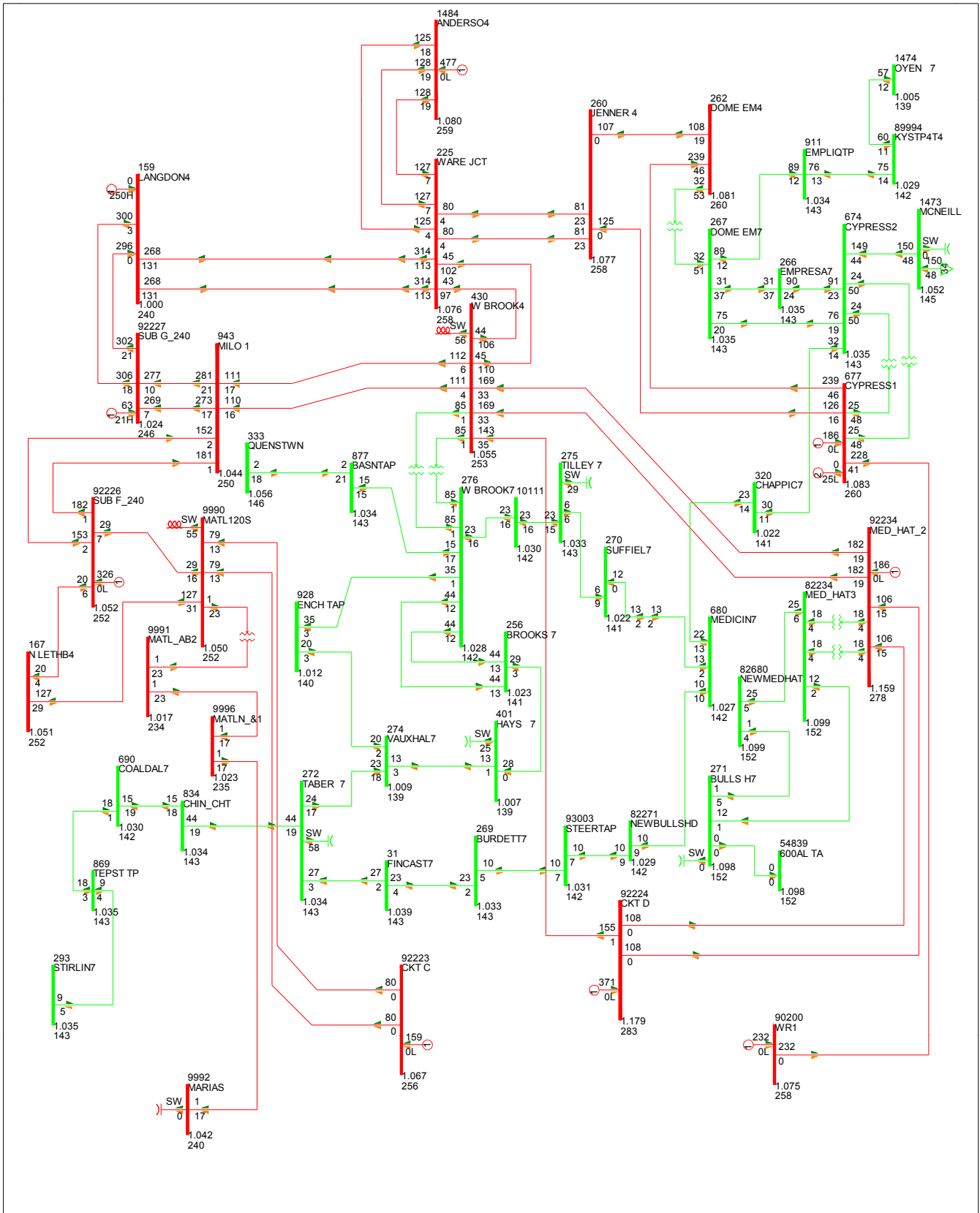


FIG 2017-2-SP-15: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -7 MW

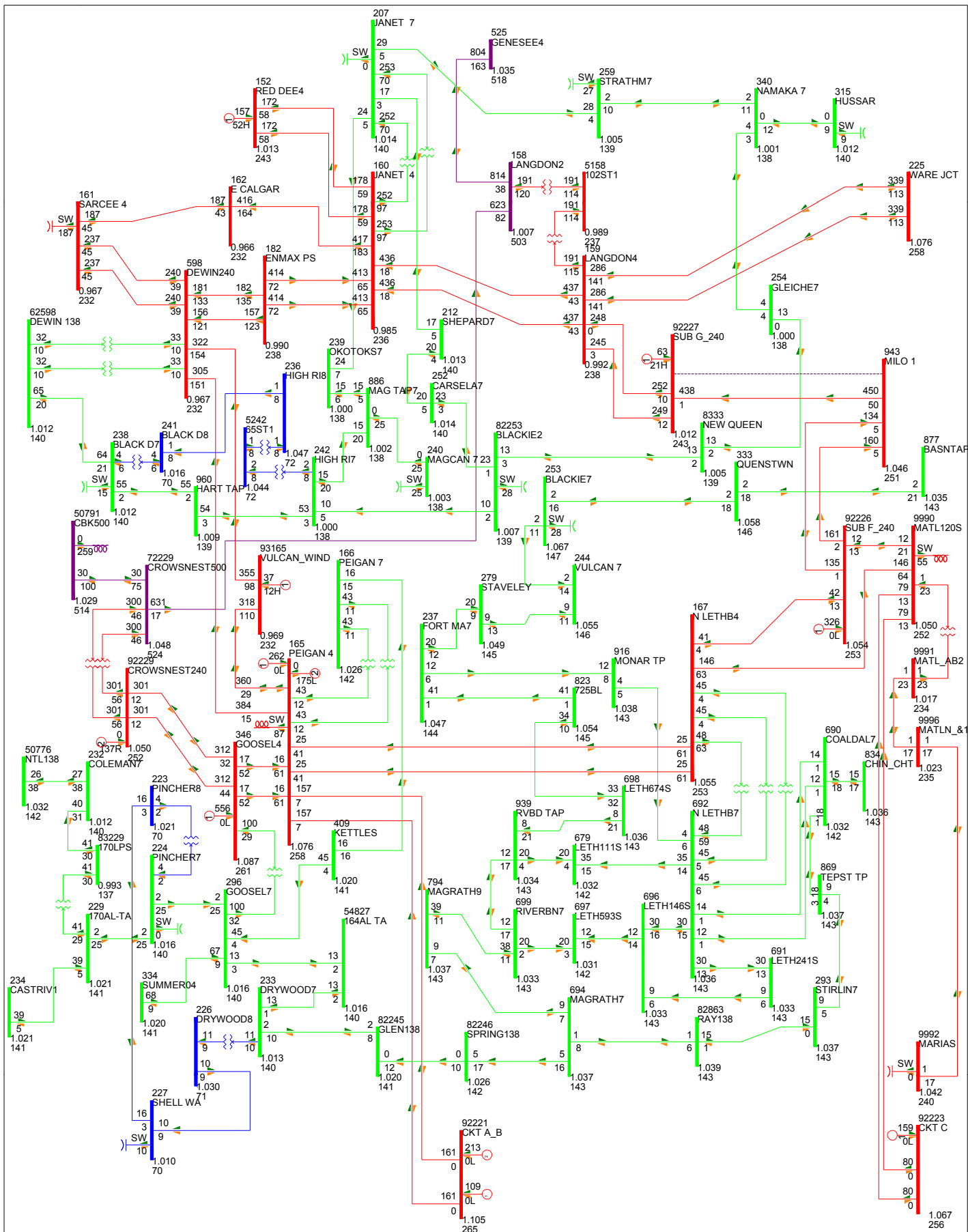


FIG 2017-2-SP-16: MILO TO SUB G 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -38 MW

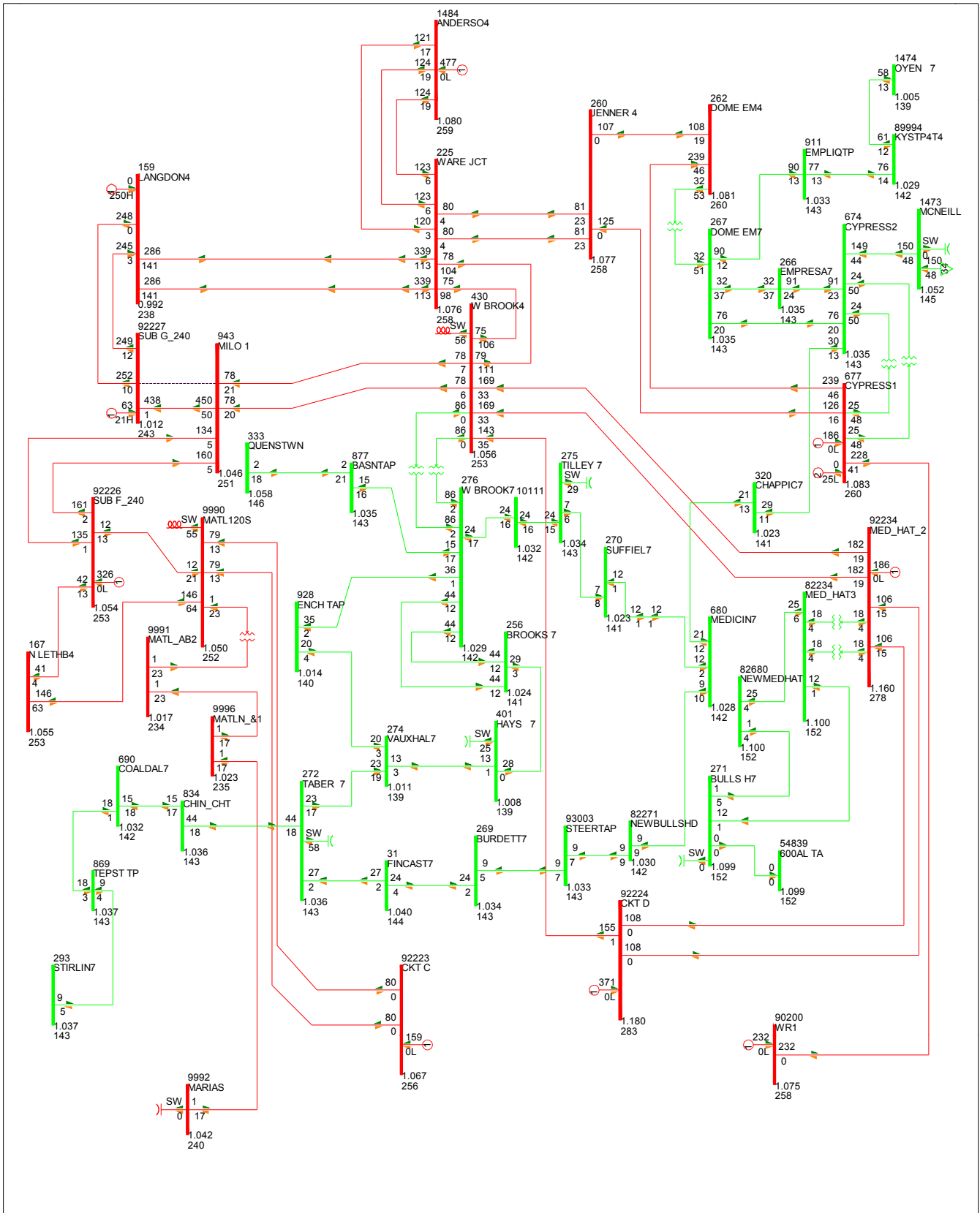


FIG 2017-2-SP-17: MILO TO SUB G 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -38 MW

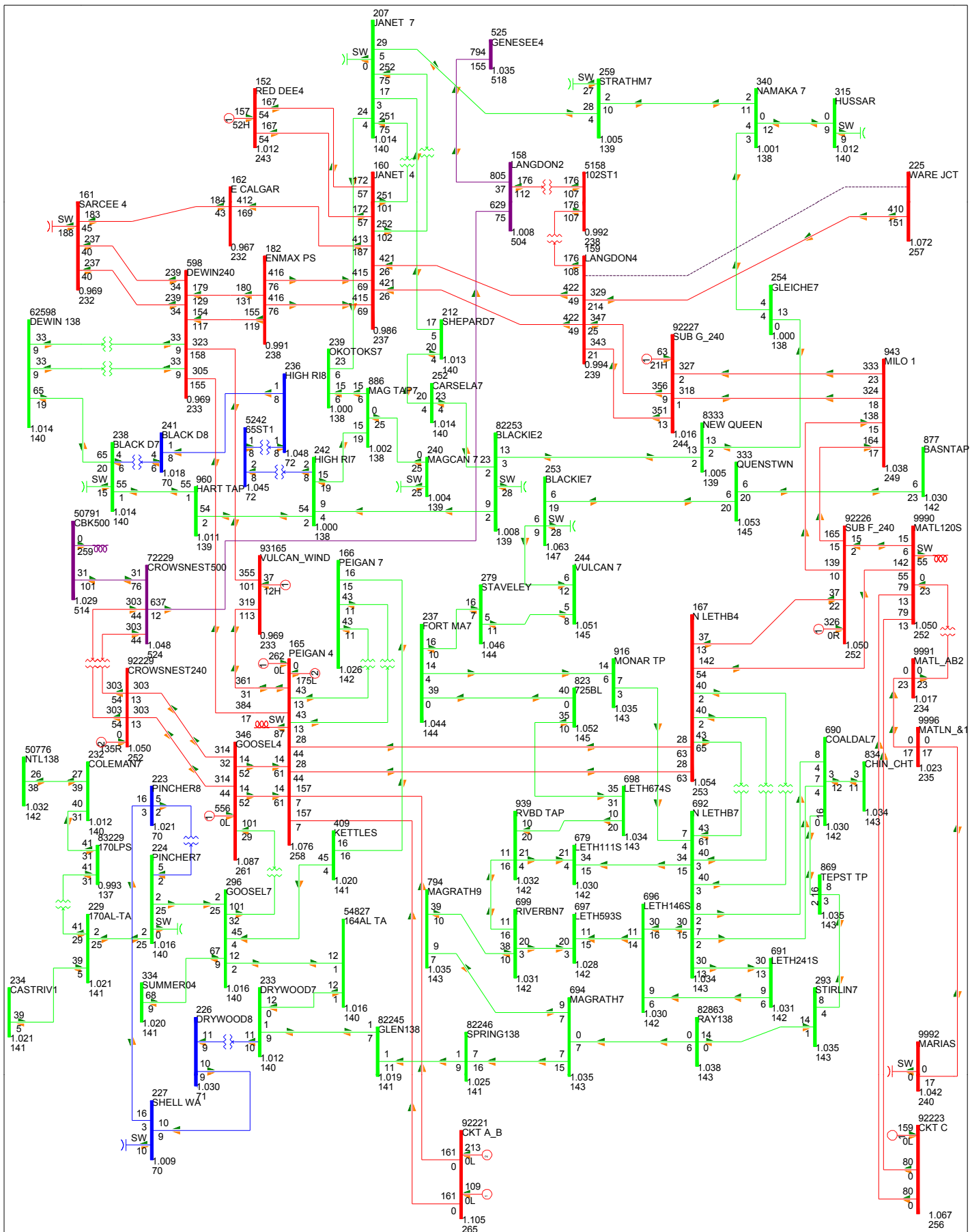


FIG 2017-2-SP-18: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -39 MW

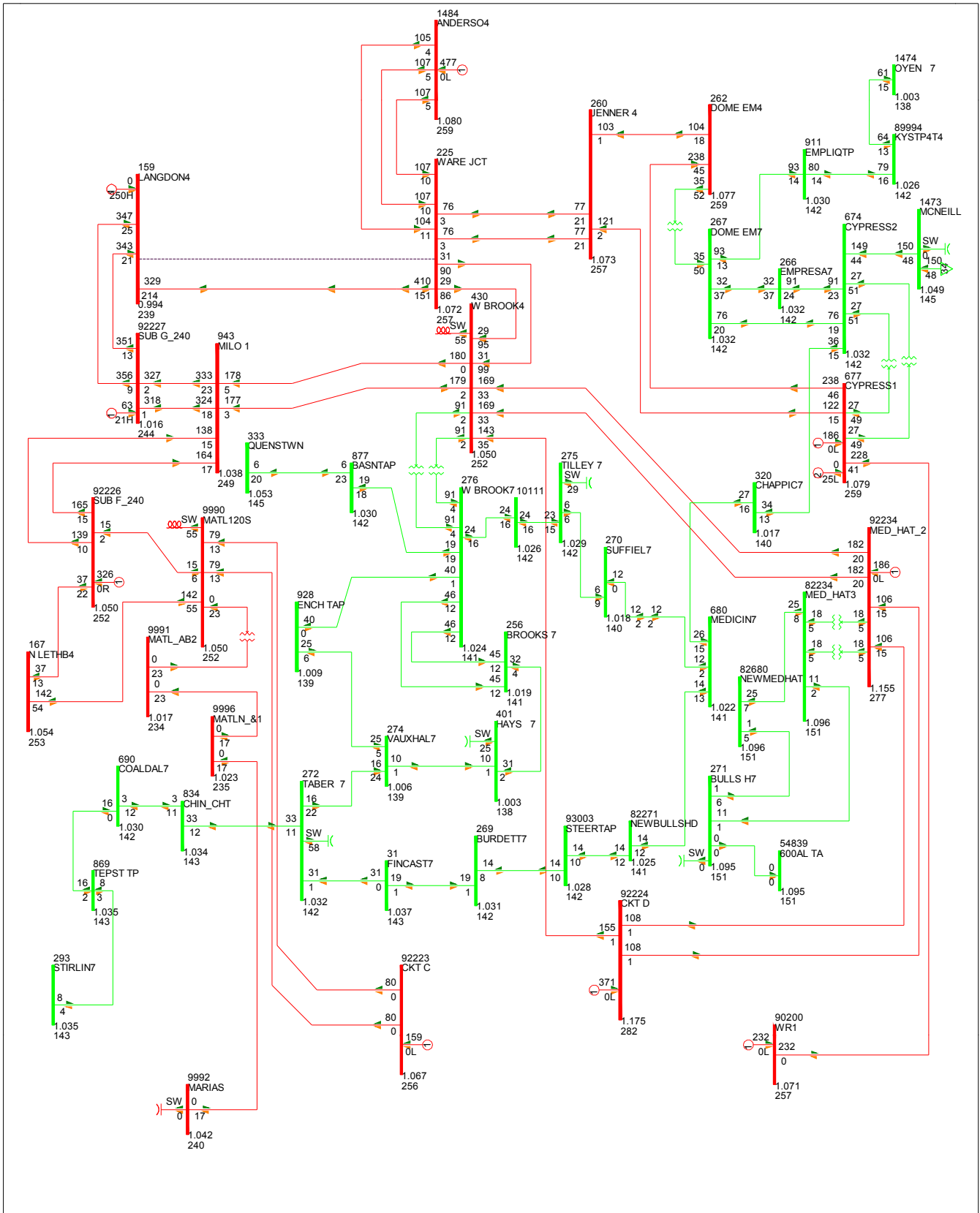


FIG 2017-2-SP-19: WAREJUNC TO LANGDON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -39 MW

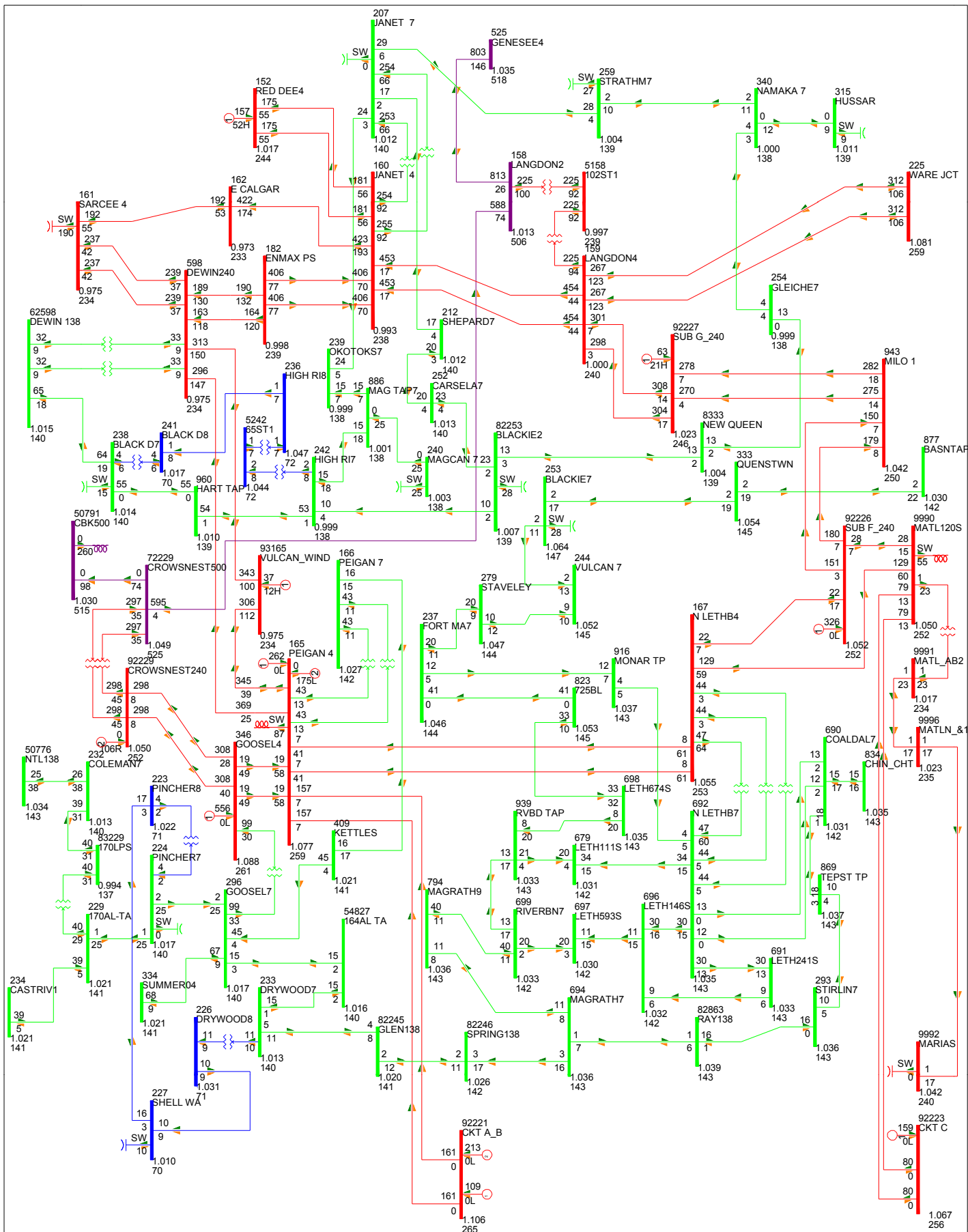


FIG 2017-2-SP-20: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 2

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -7 MW

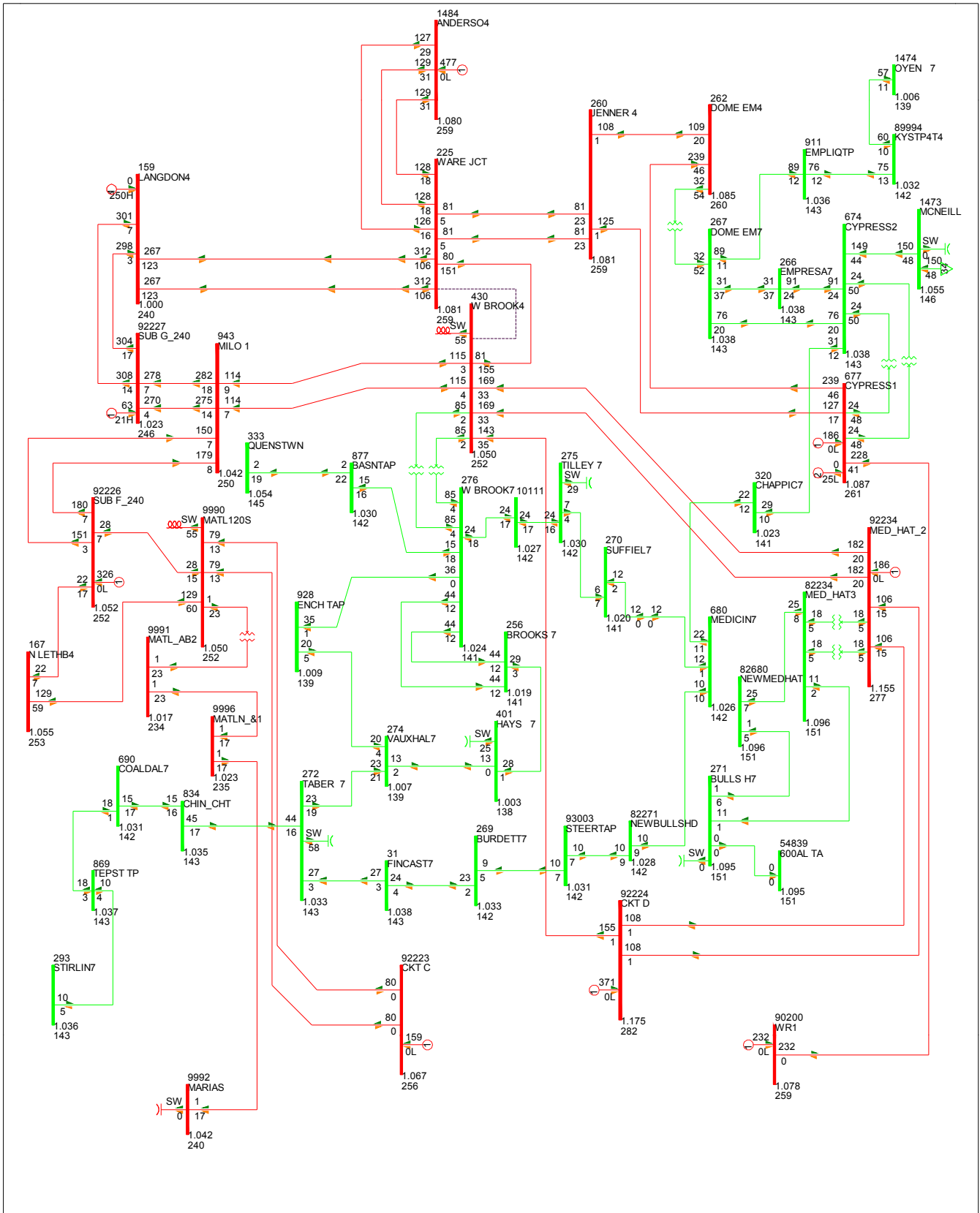


FIG 2017-2-SP-21: WAREJUNC TO WESTBROOKS 240 KV PROPORTIONAL WIND SCENARIO

2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 2

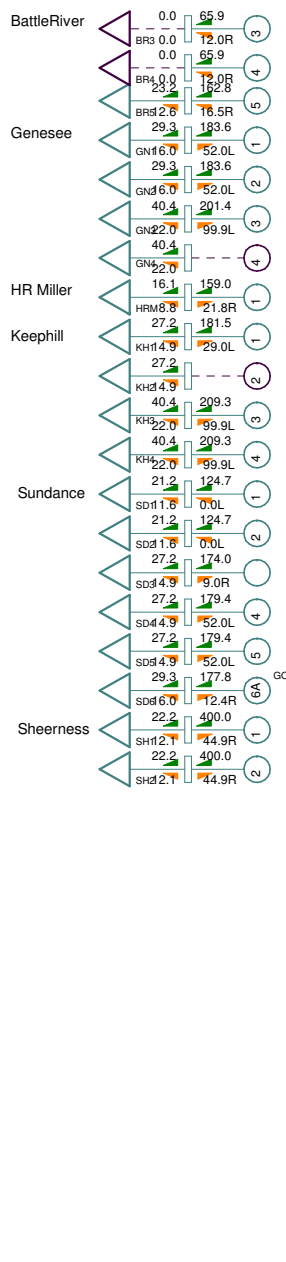
Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR

100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

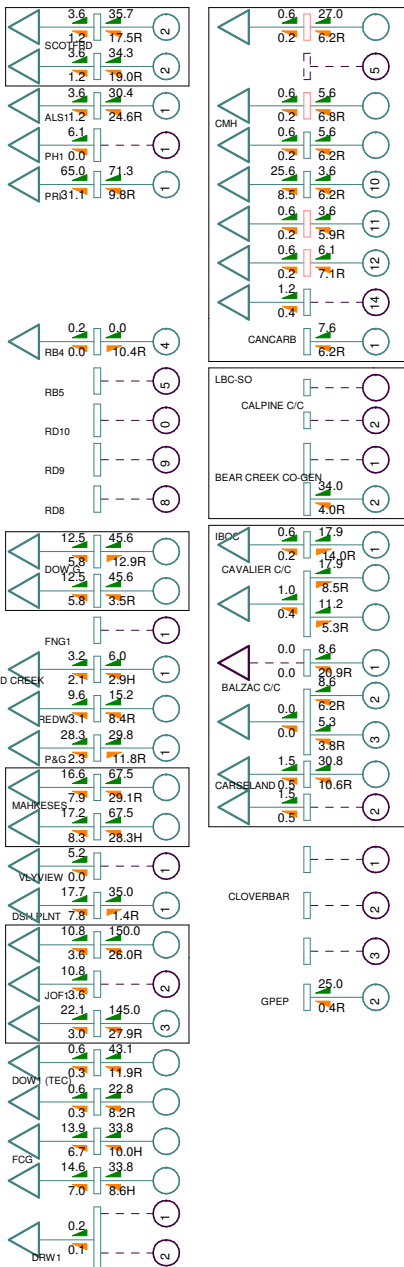
BC Export: -7 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3382.2 MW

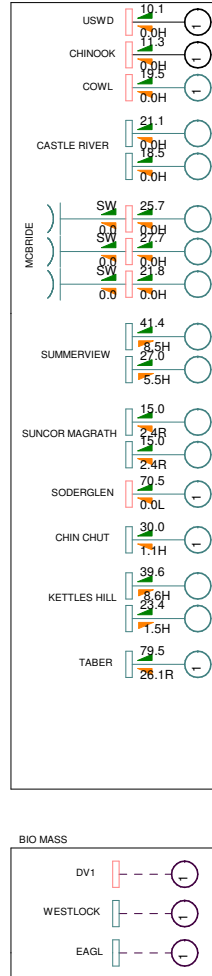
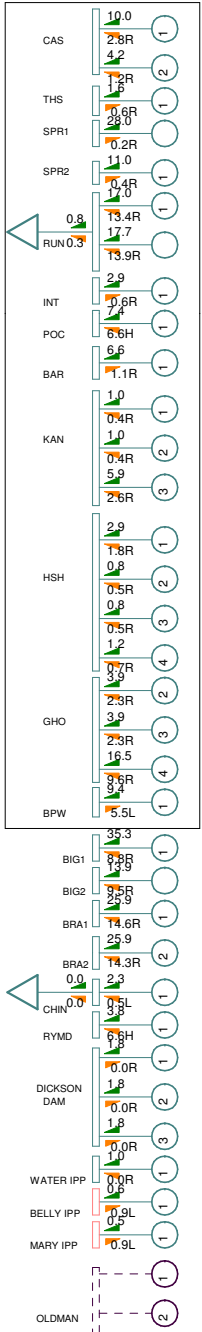


GAS GENERATION

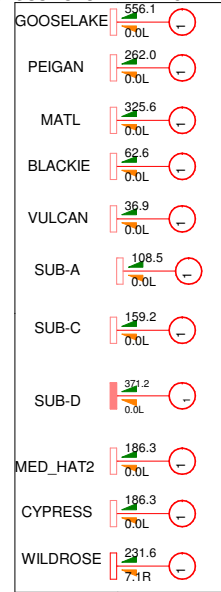


HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

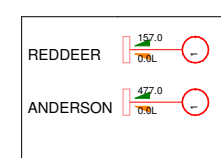
GROSS BOW HYDRO GEN. 153.7 MW



GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW



GROSS FUTURE WIND GEN. IN CENTRAL 634.0 MW



FORT MCMURRAY GEN.

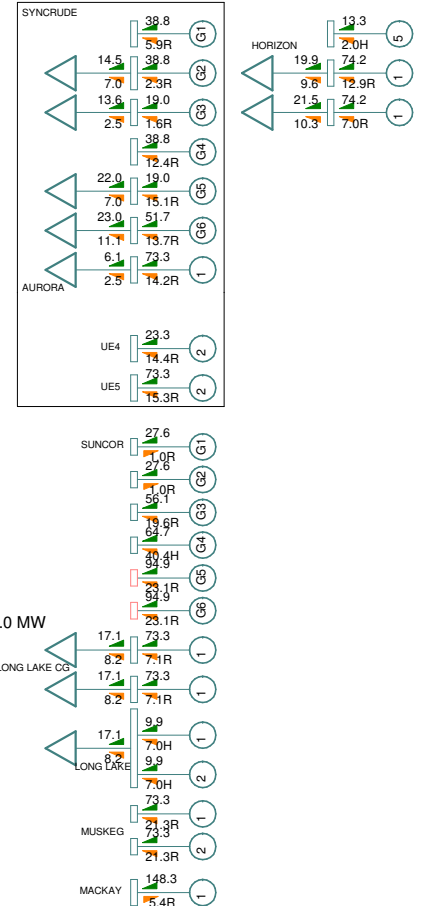


Fig 2017-3-SL-1

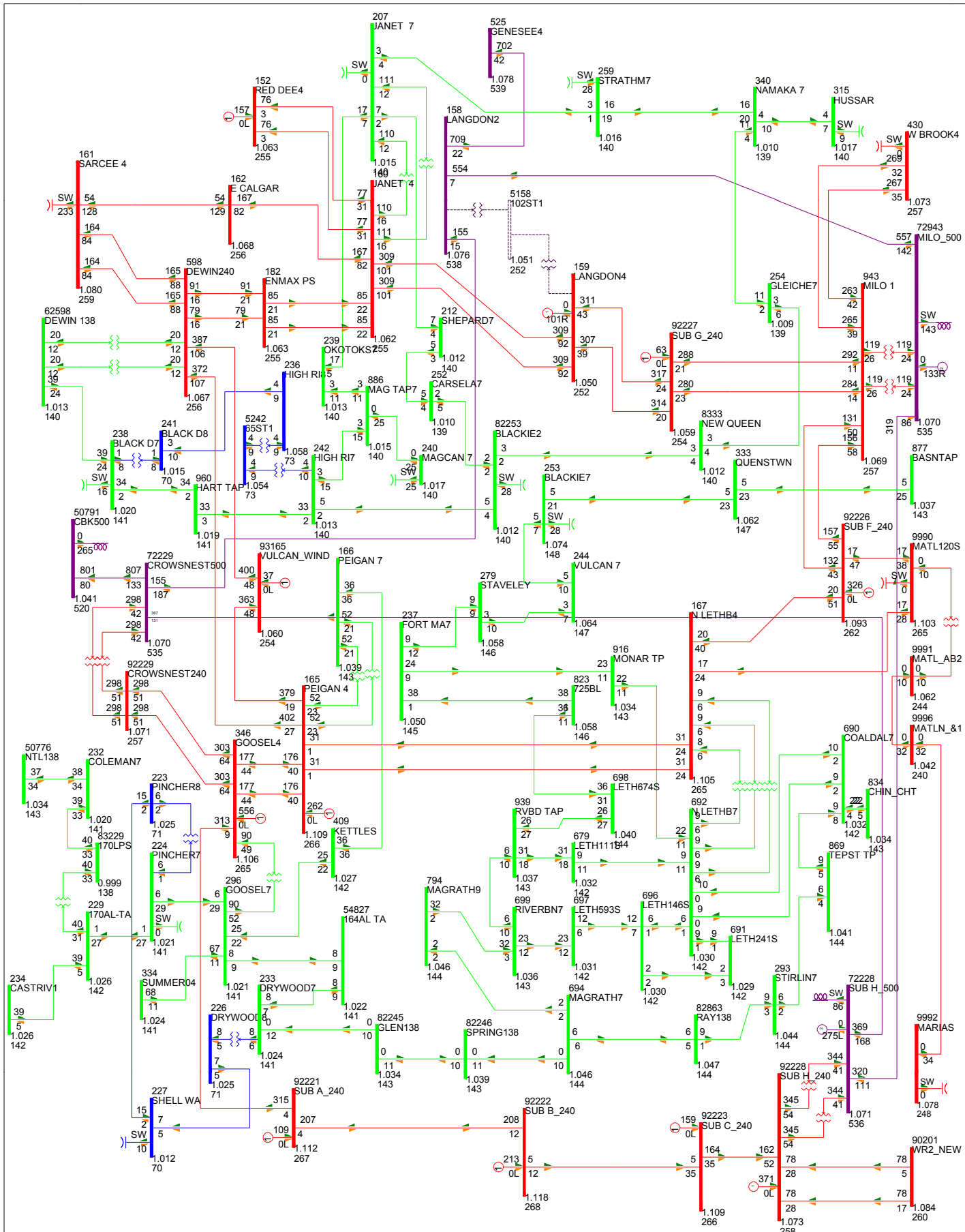


FIG 2017-3-SL-6: LANGDON 500/240 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000

BC Export: 843 MW

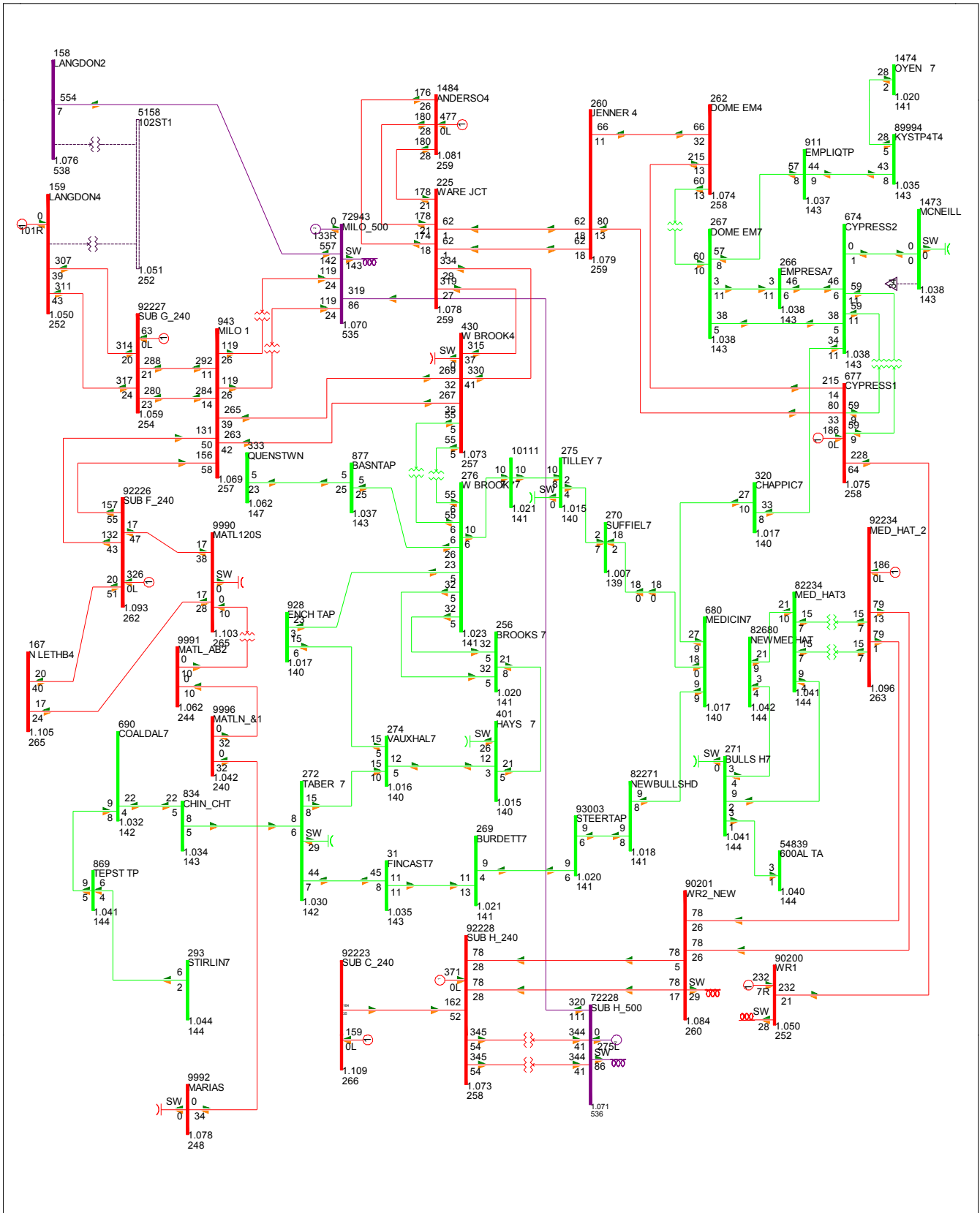


FIG 2017-3-SL-7: LANGDON 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 843 MW

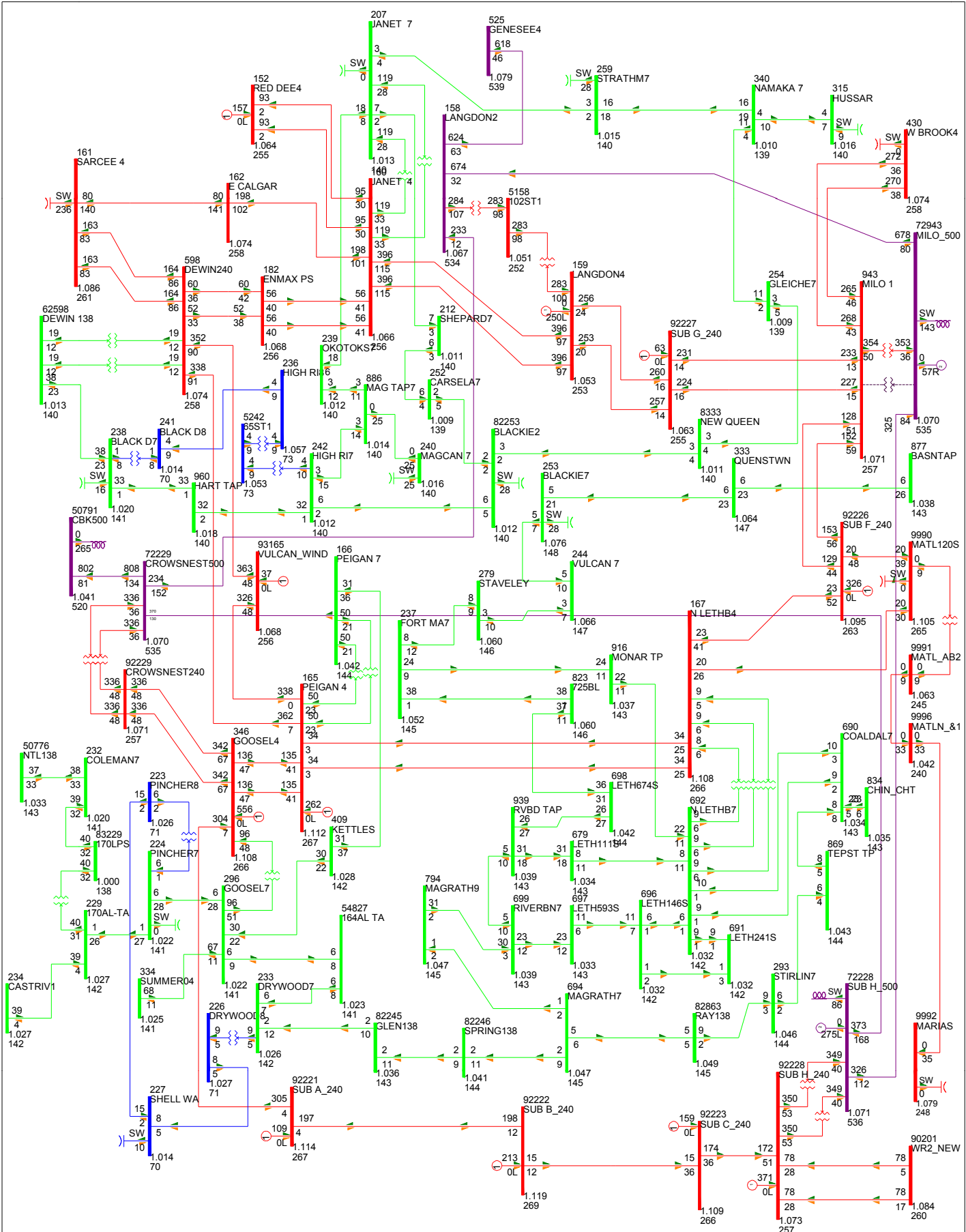


FIG 2017-3-SL-8: MILO 500/240 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 850 MW

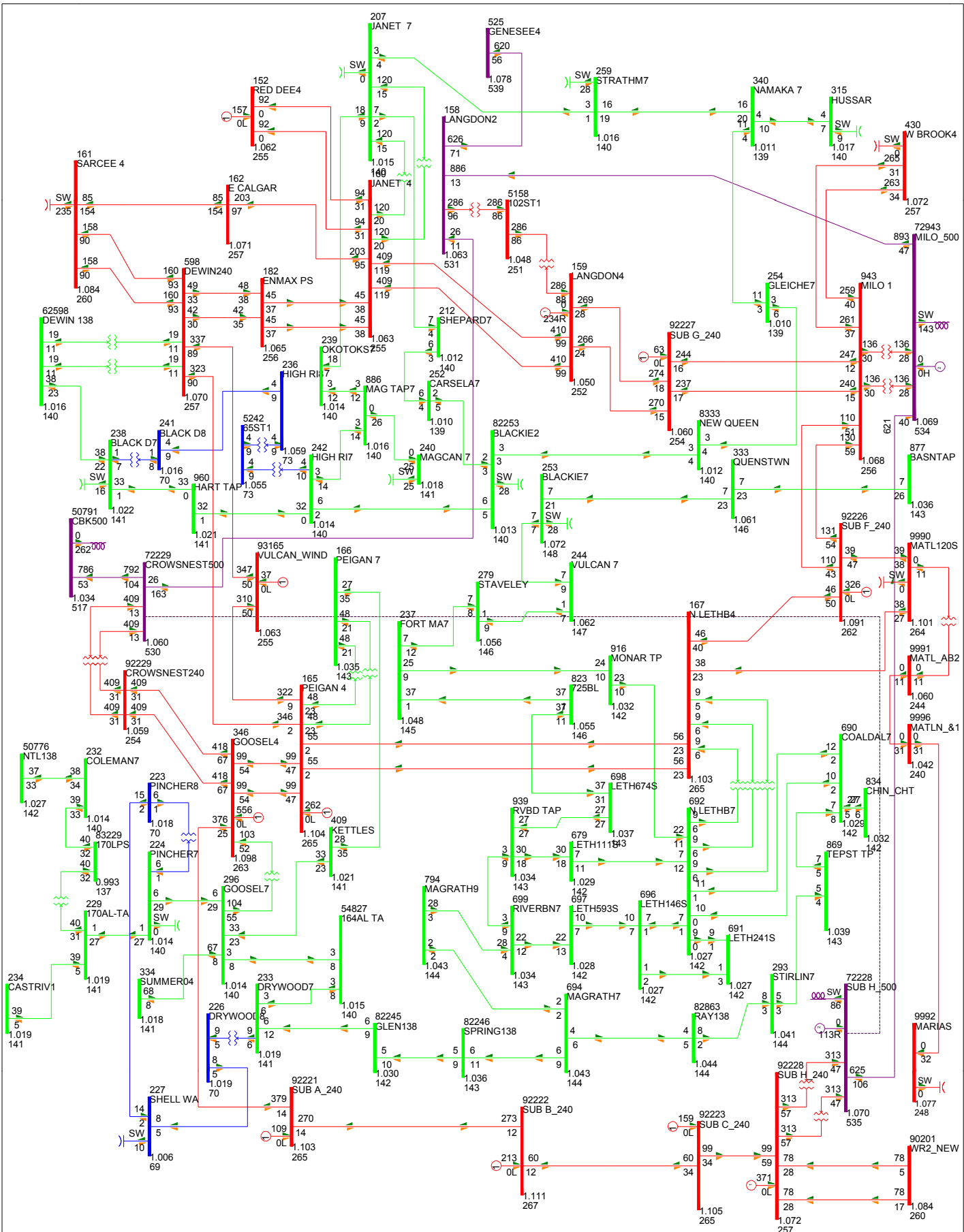


FIG 2017-3-SL-10: CROWSNEST TO SUB H 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 841 MW

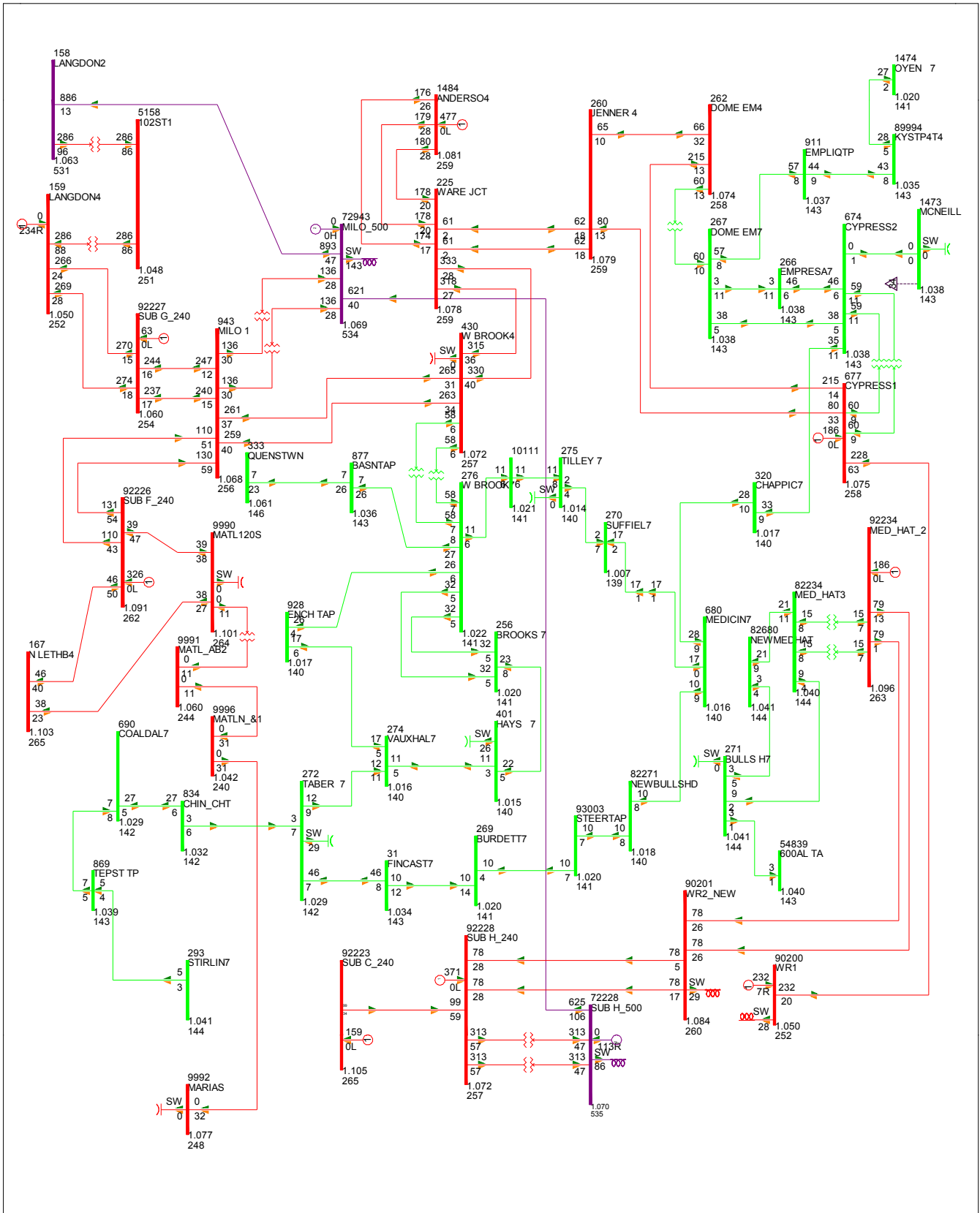


FIG 2017-3-SL-11: CROWSNEST TO SUB H 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 841 MW

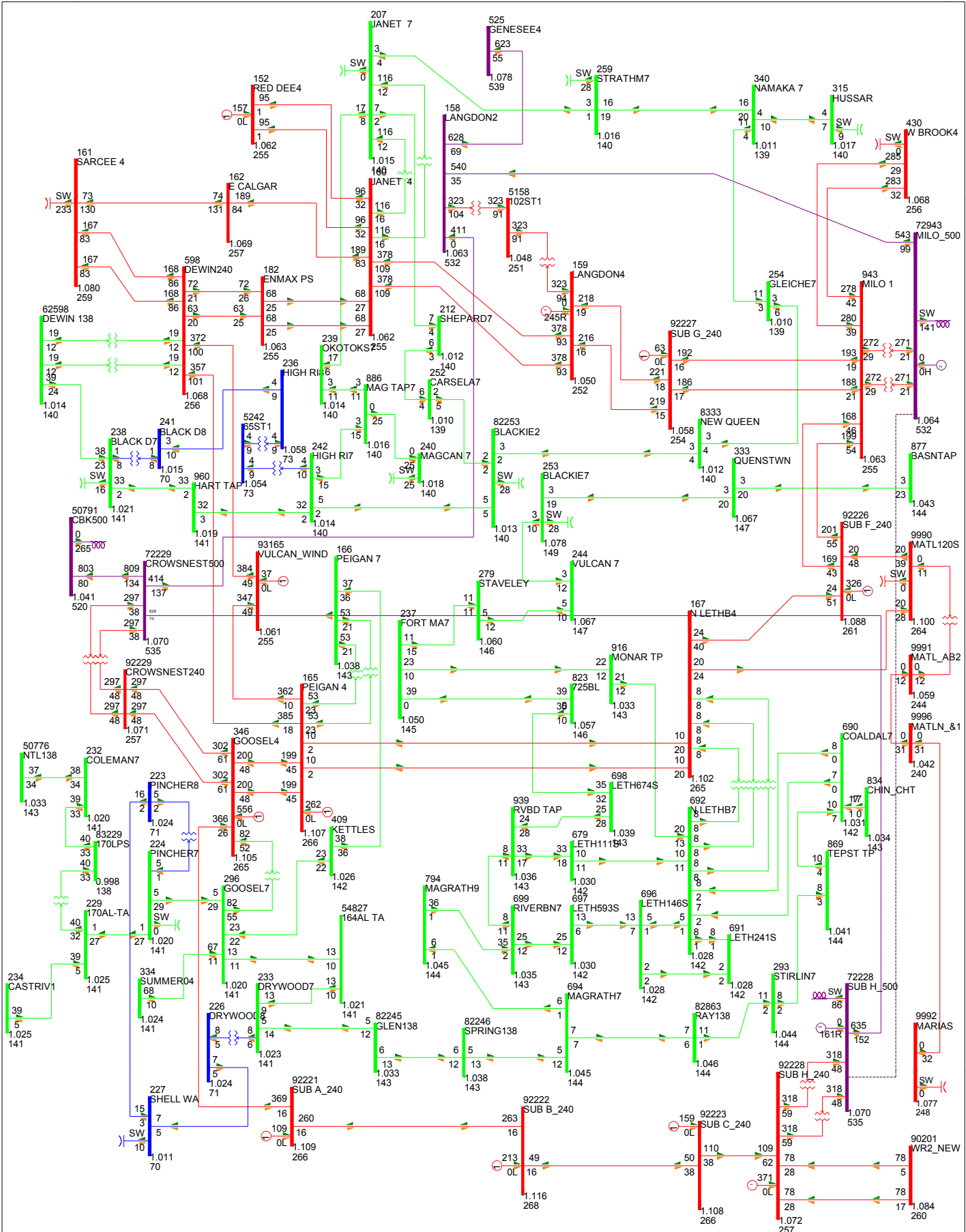


FIG 2017-3-SL-12: MILO TO SUB H 500 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000

BC Export: 845 MW

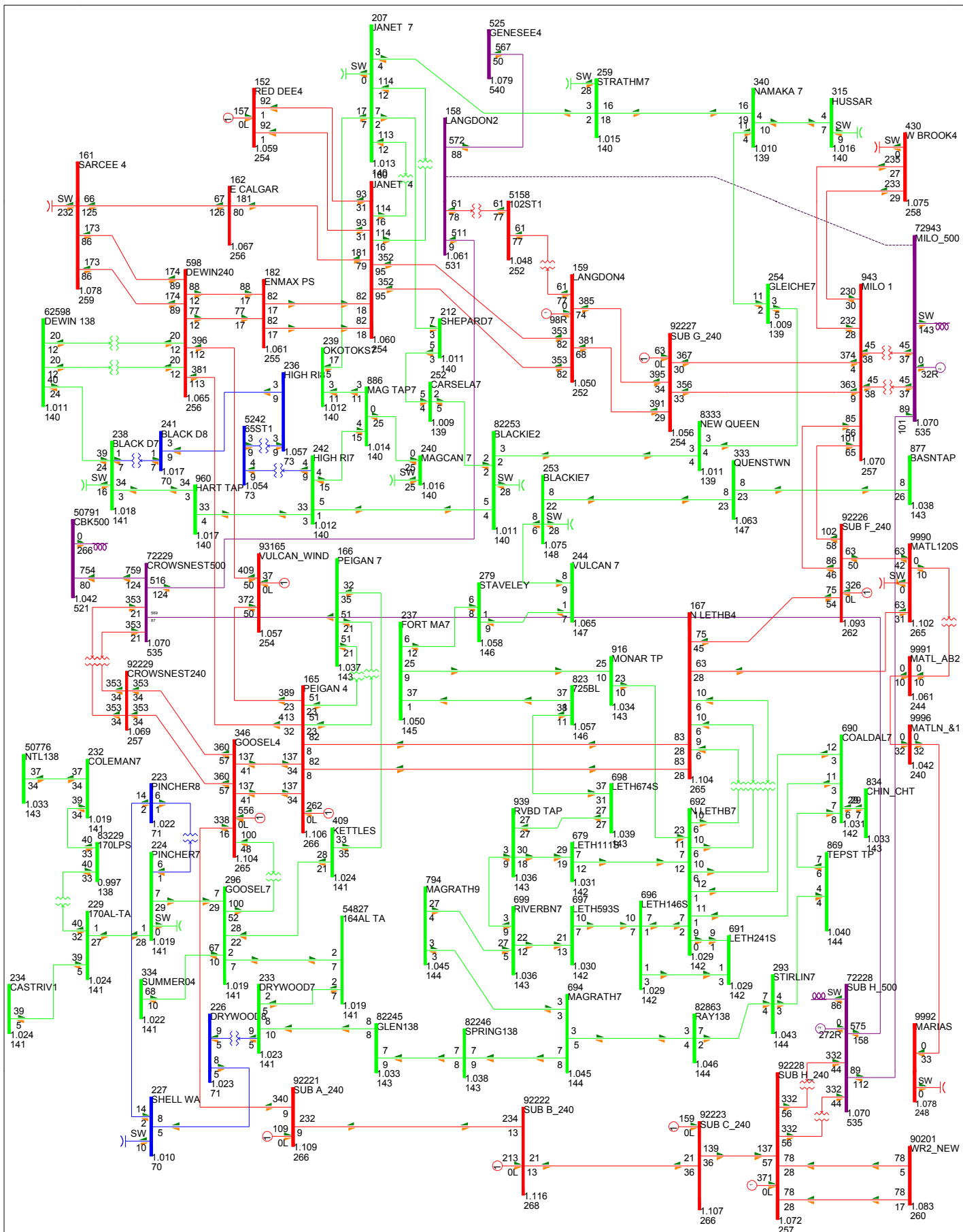


FIG 2017-3-SL-14: LANGDON TO MILO 500 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000

BC Export: 797 MW

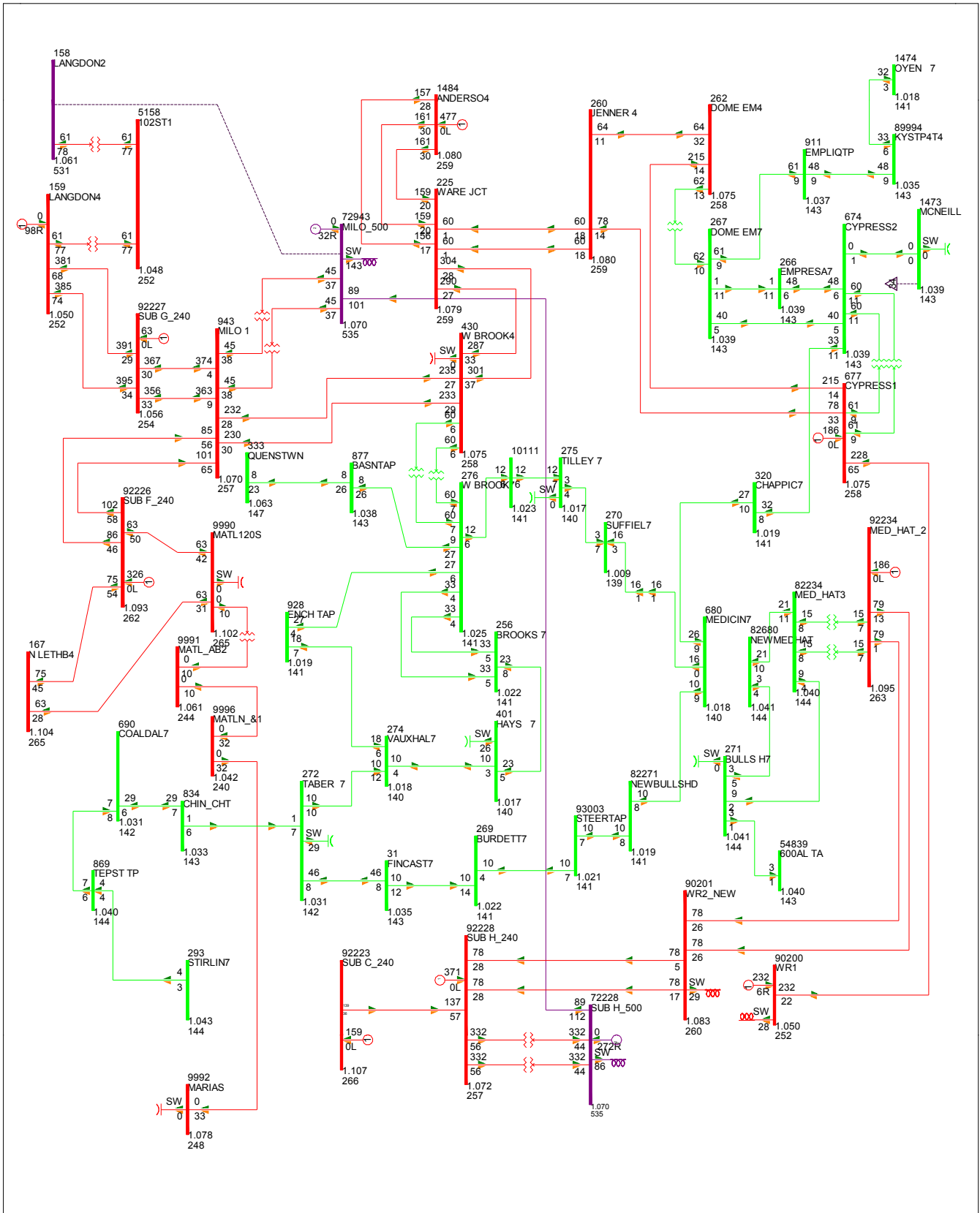


FIG 2017-3-SL-15: LANGDON TO MILO 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 797 MW

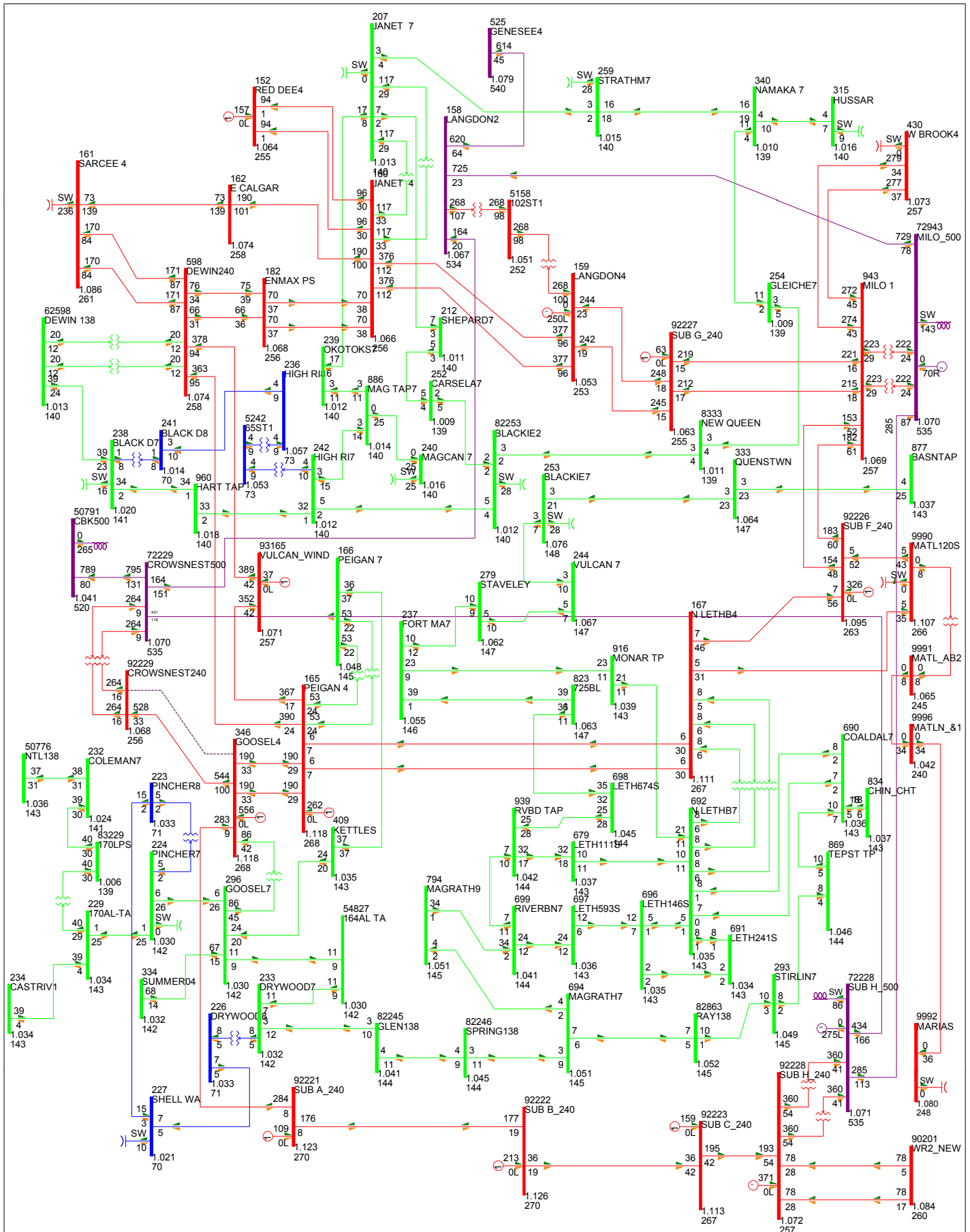


FIG 2017-3-SL-16: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 840 MW

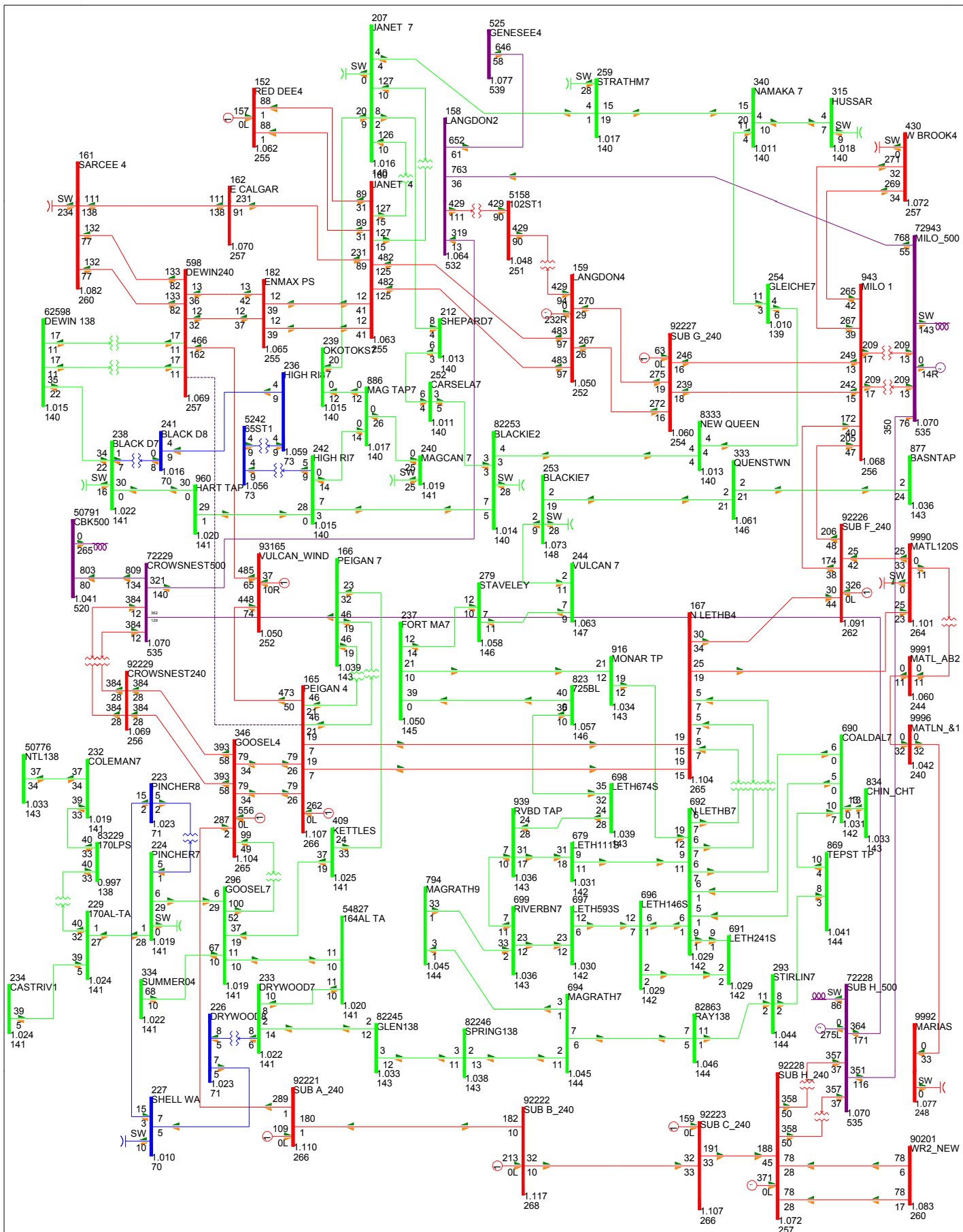


FIG 2017-3-SL-18: PEIGAN TO DEWINTON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 845 MW

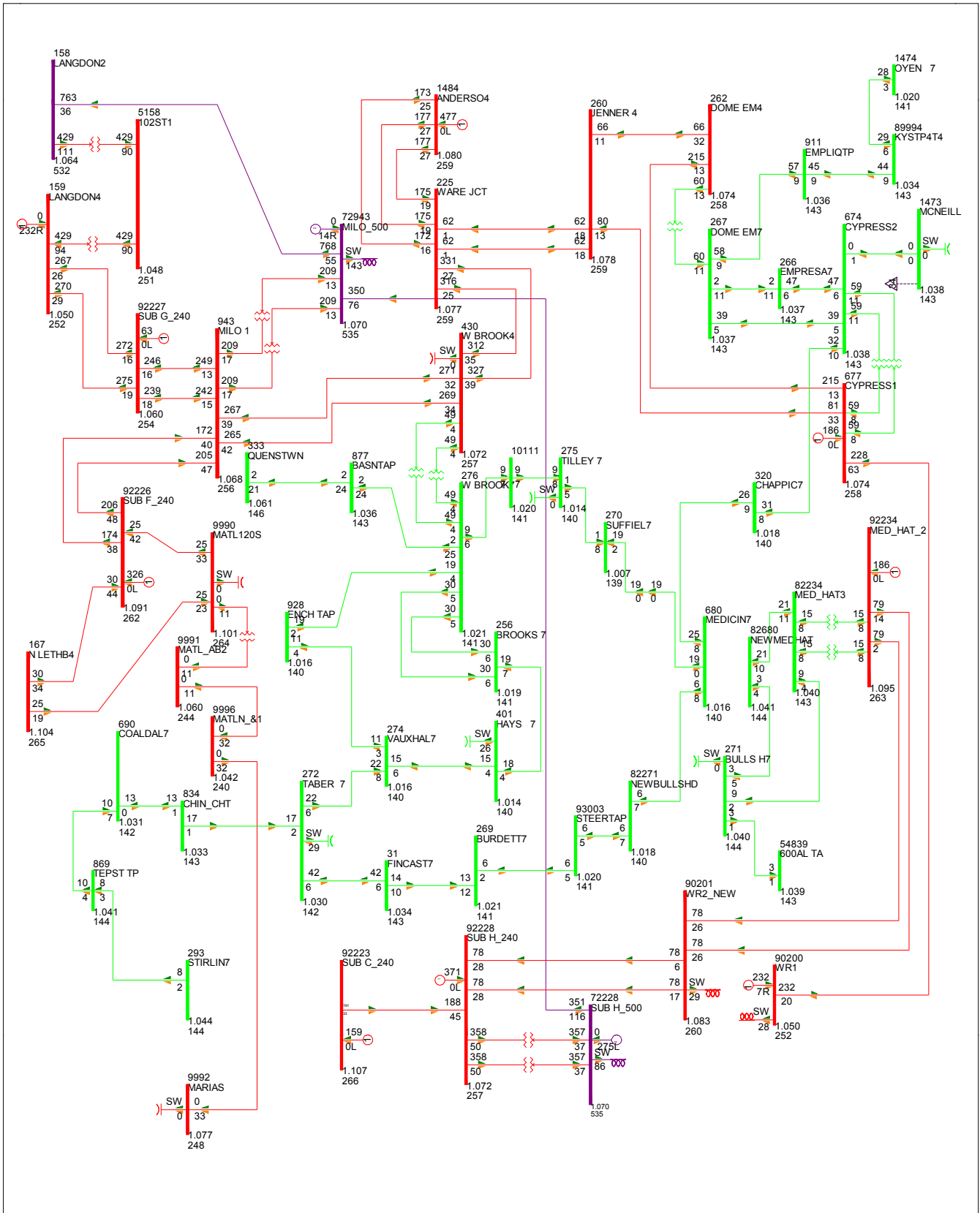


FIG 2017-3-SL-19: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 845 MW

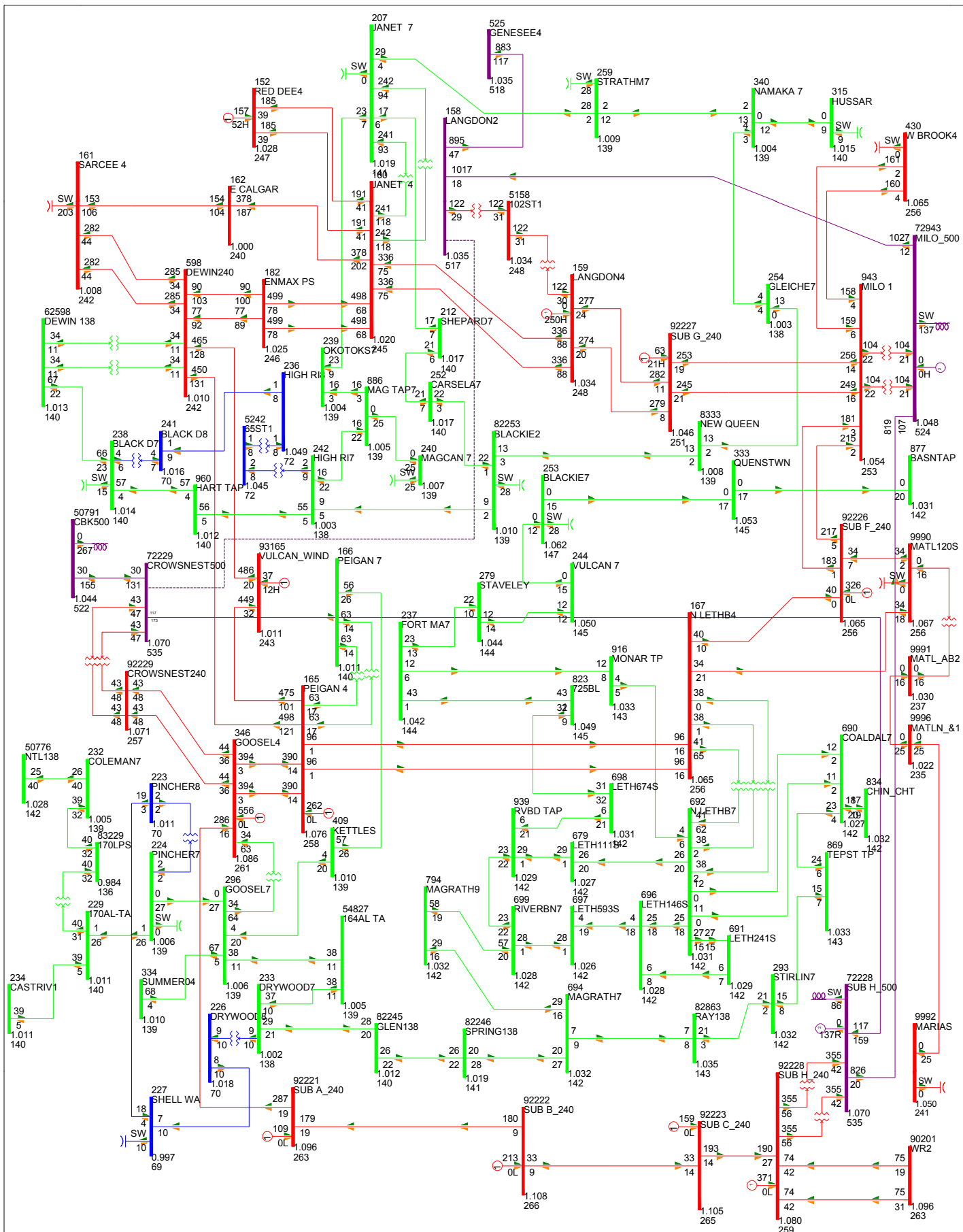


FIG 2017-3-SP-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -61 MW

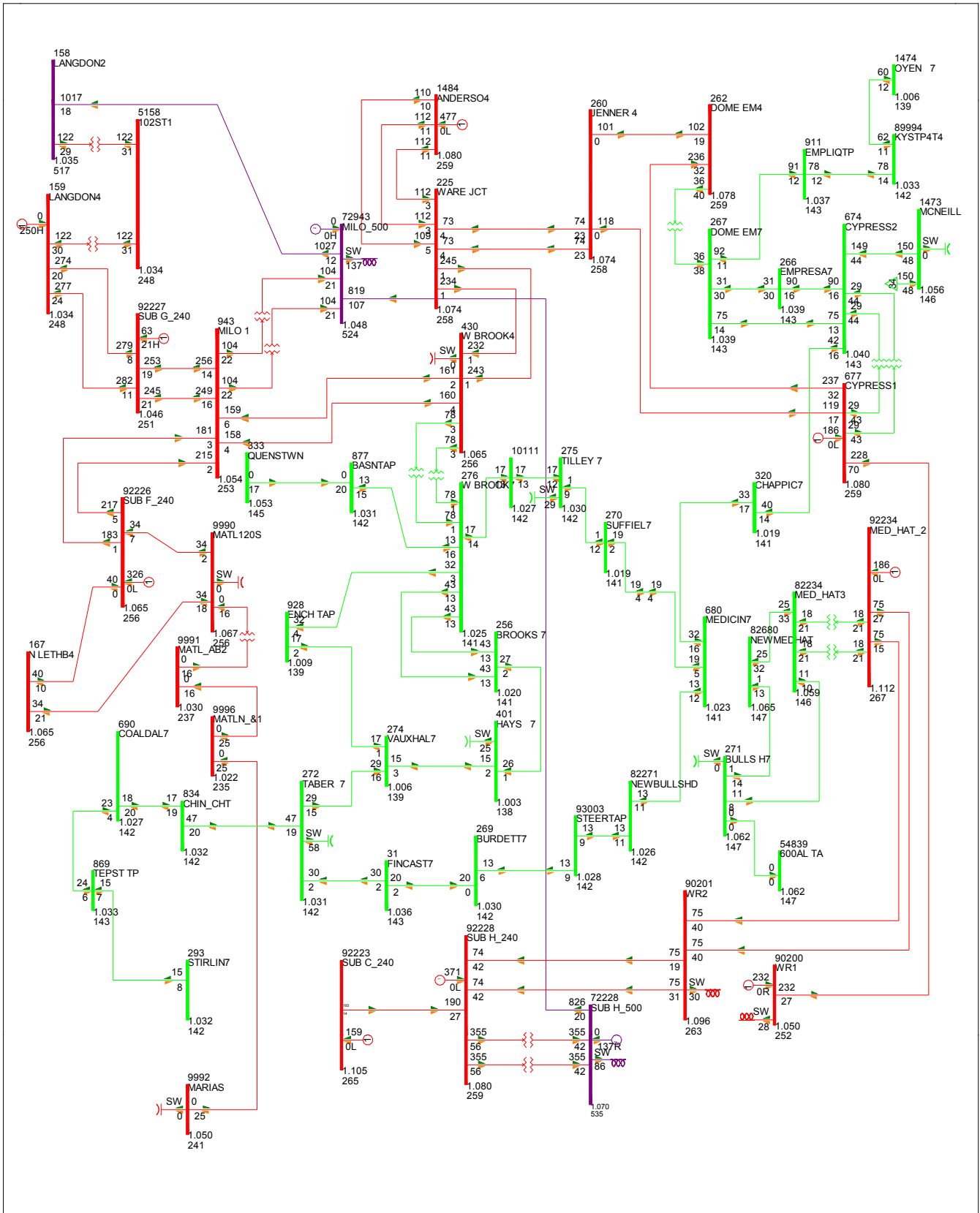


FIG 2017-3-SP-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:43

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -61 MW

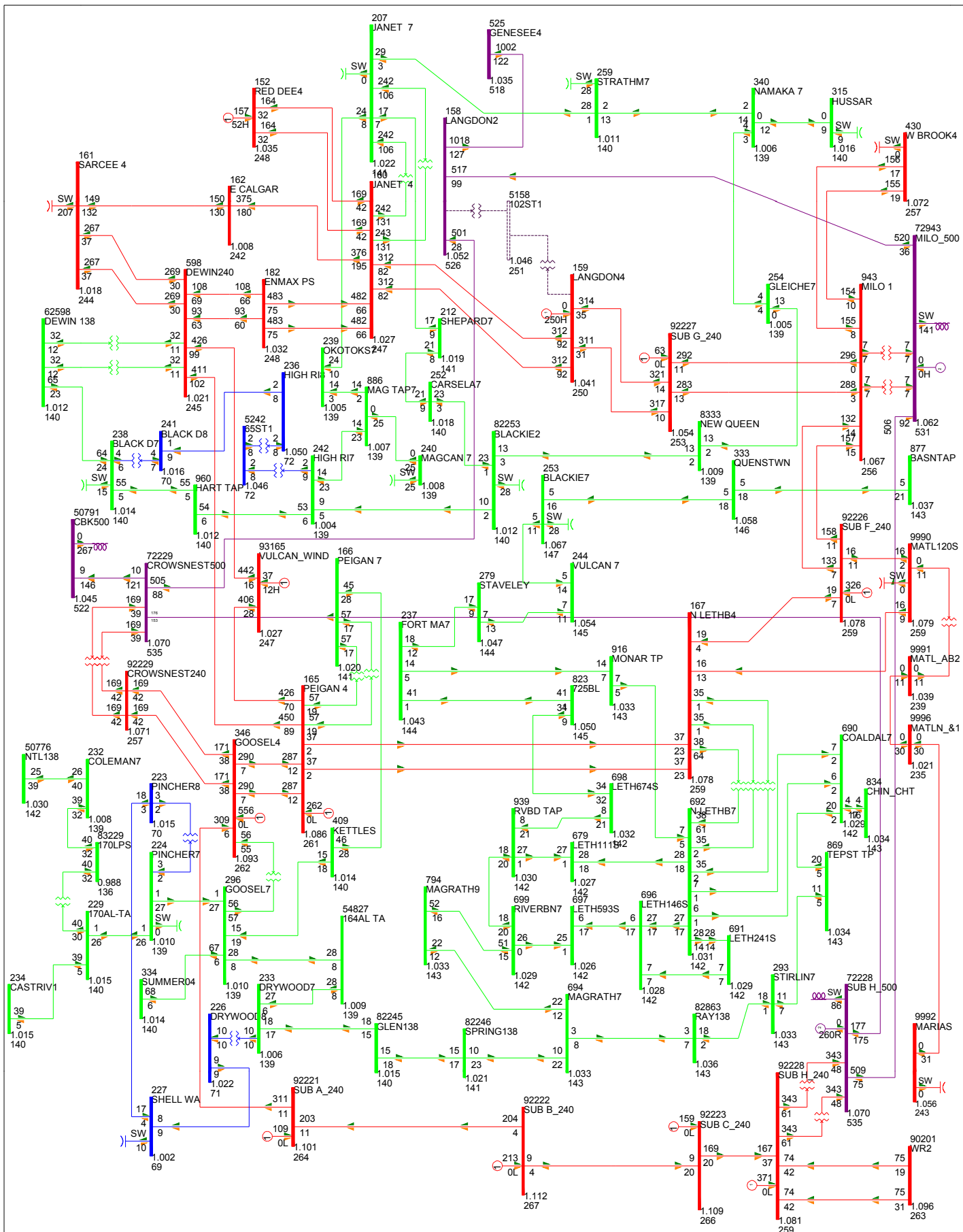


FIG 2017-3-SP-6: LANGDON 500/240 KV XMER

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -7 MW

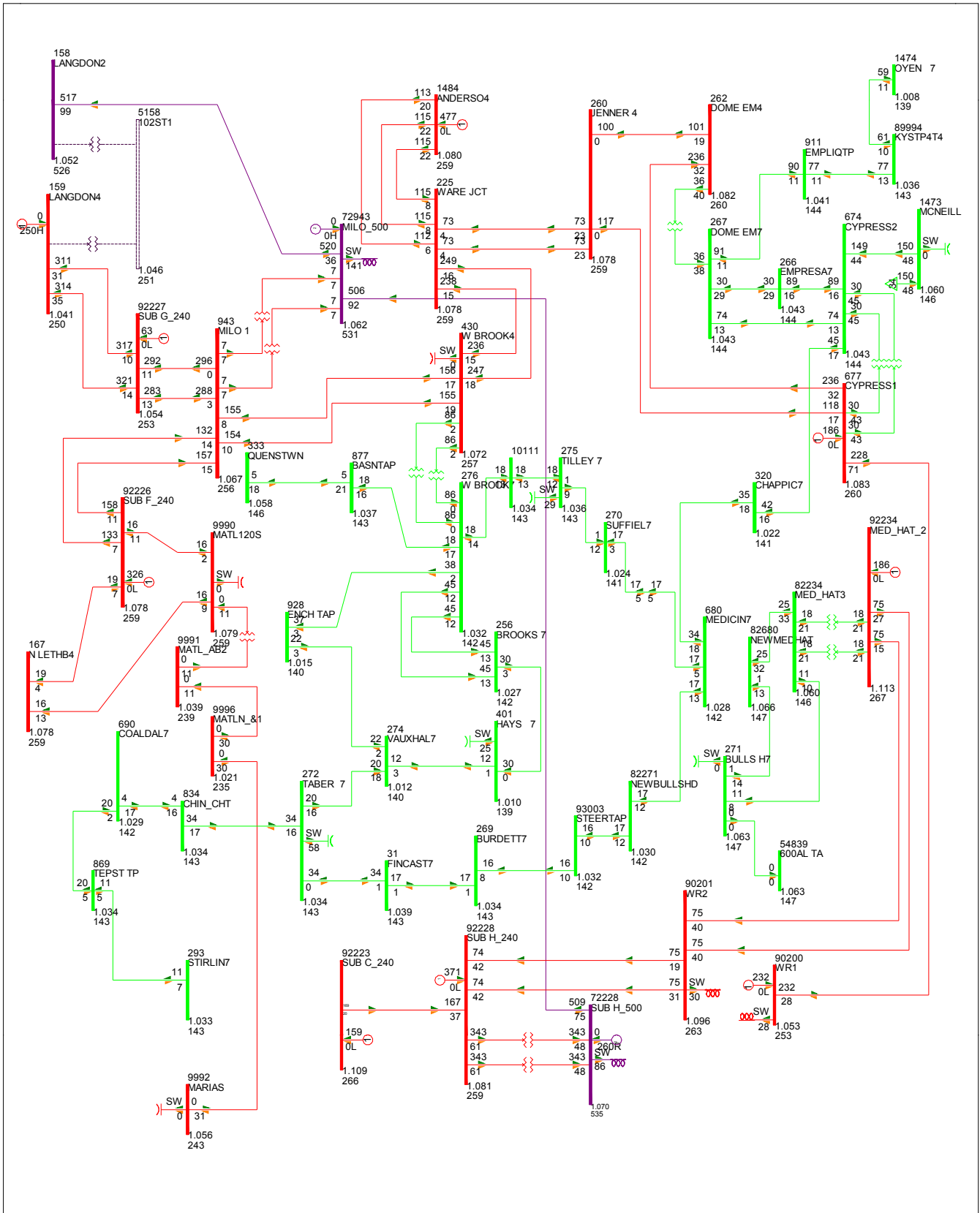


FIG 2017-3-SP-7: LANGDON 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -7 MW

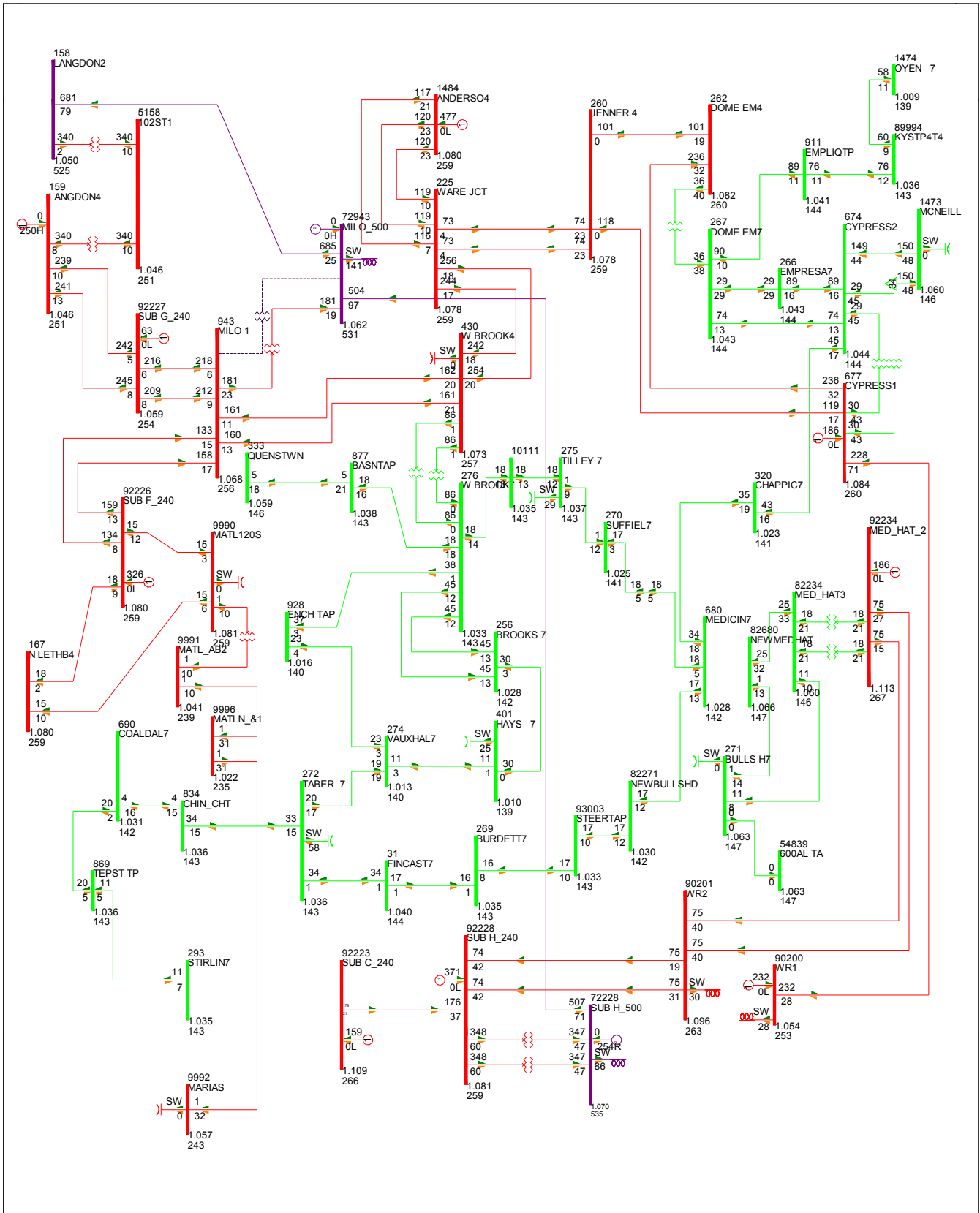


FIG 2017-3-SP-9: MILO 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 0 MW

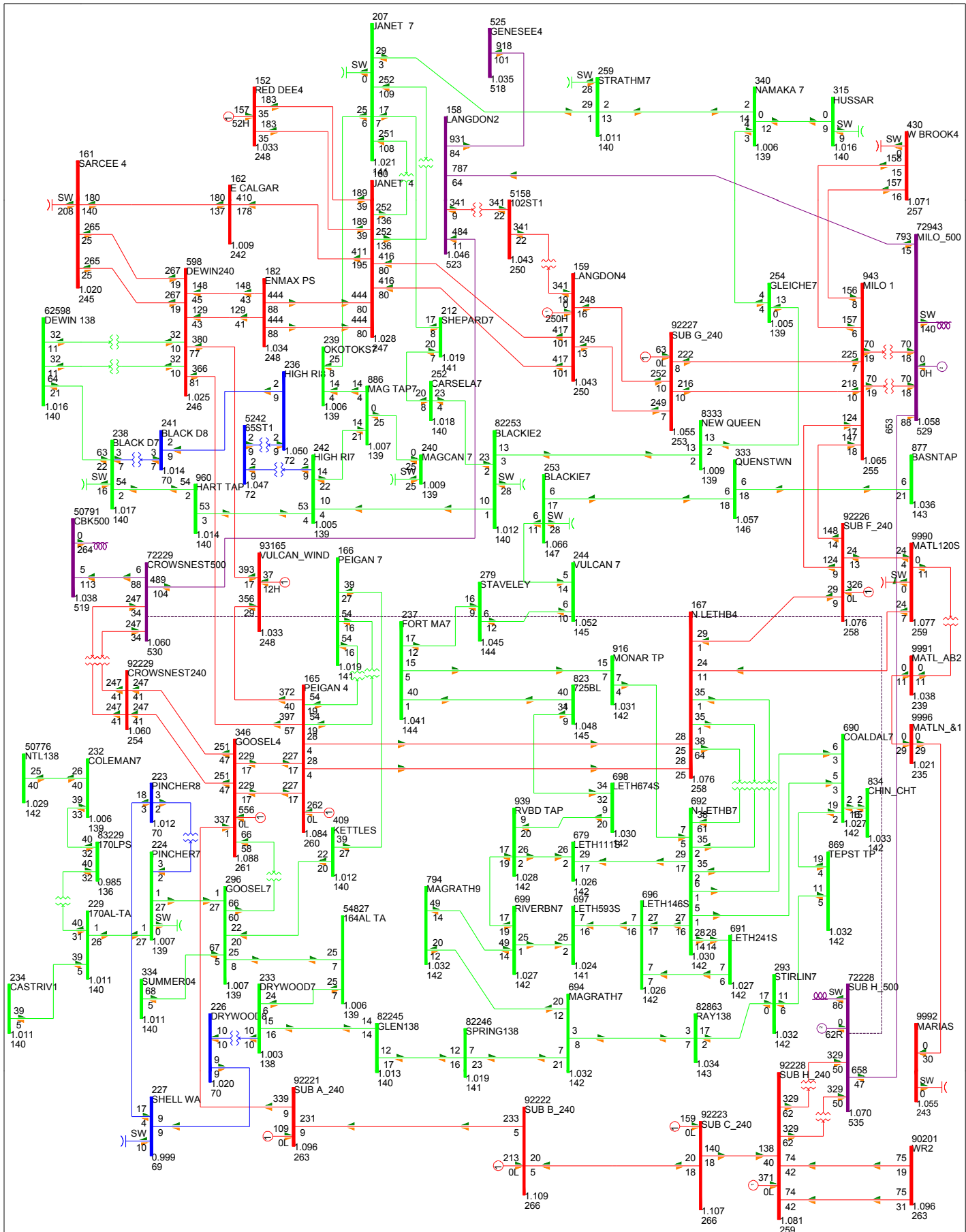


FIG 2017-3-SP-10: CROWSNEST TO SUB H 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -2 MW

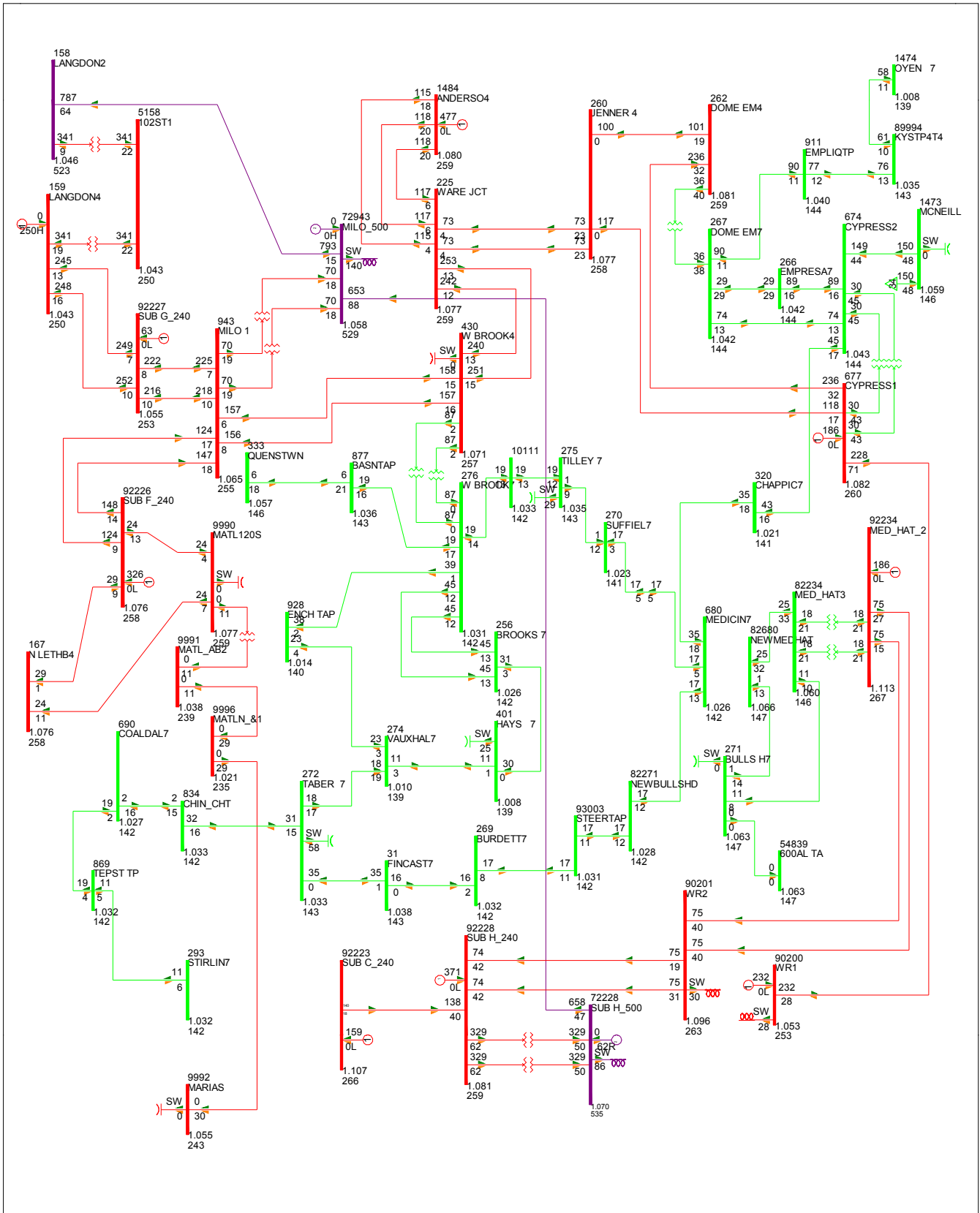


FIG 2017-3-SP-11: CROWSNEST TO SUB H 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -2 MW

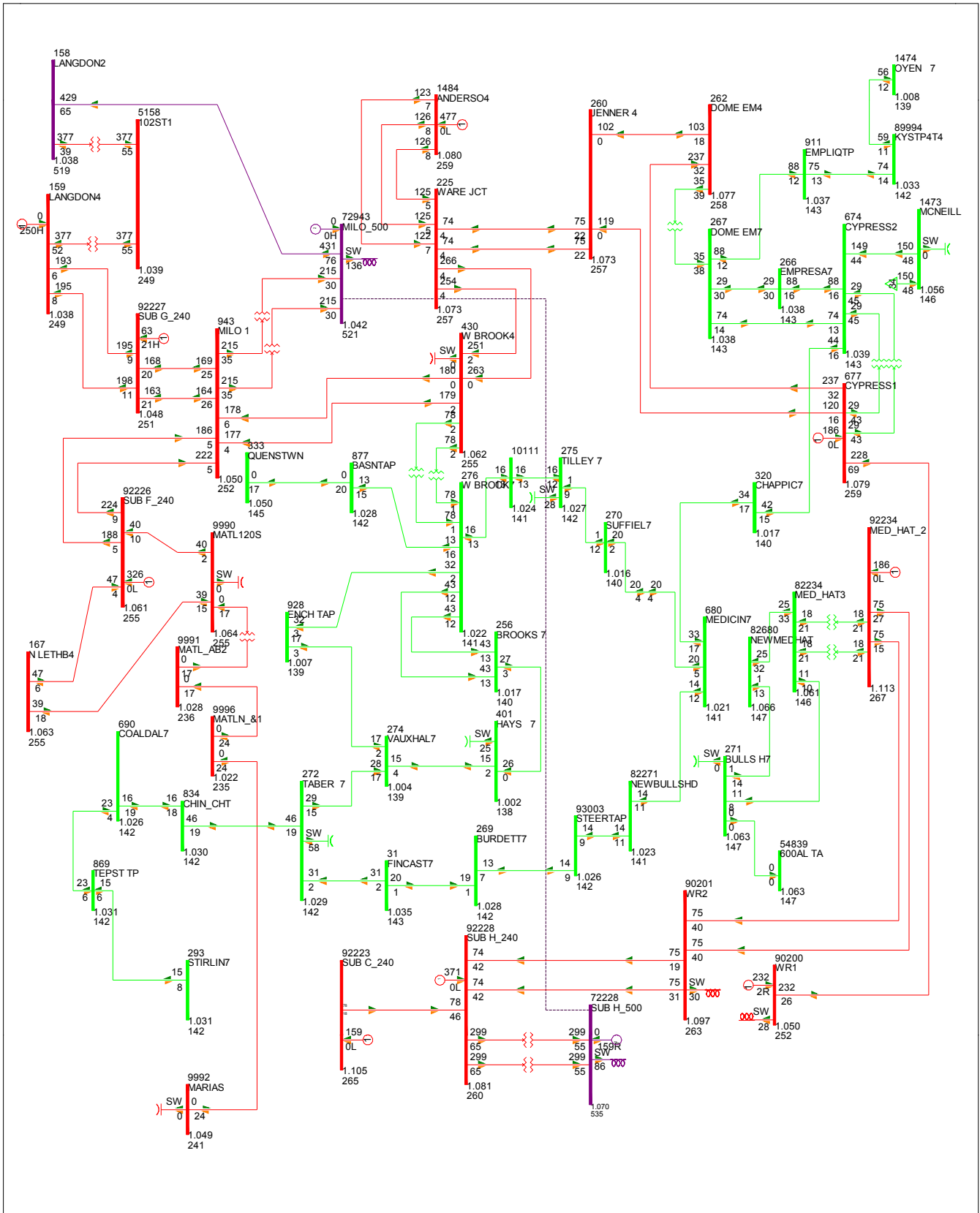


FIG 2017-3-SP-13: MILO TO SUB H 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -23 MW

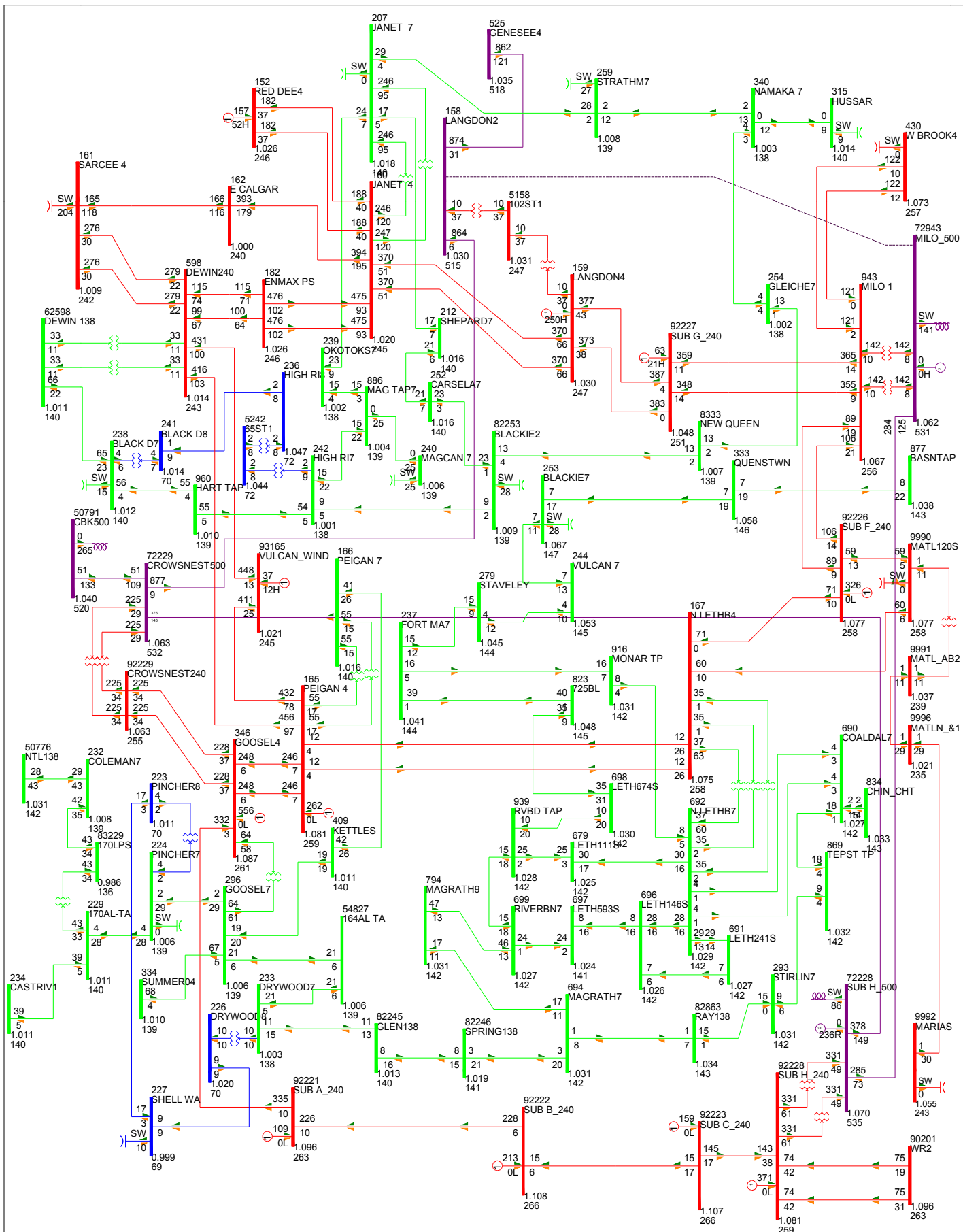


FIG 2017-3-SP-14: LANGDON TO MILO 500 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000

BC Export: -65 MW

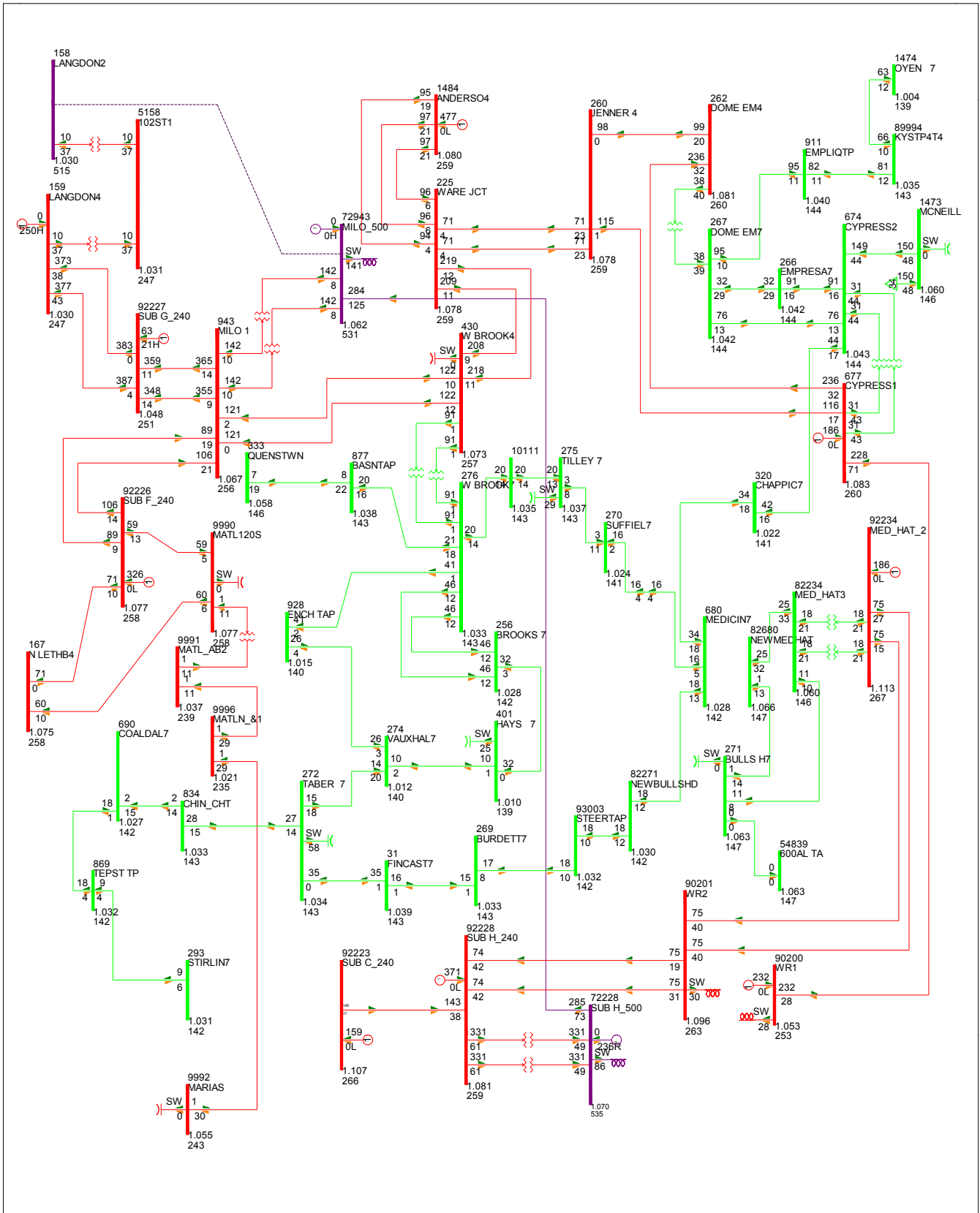


FIG 2017-3-SP-15: LANGDON TO MILO 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -65 MW

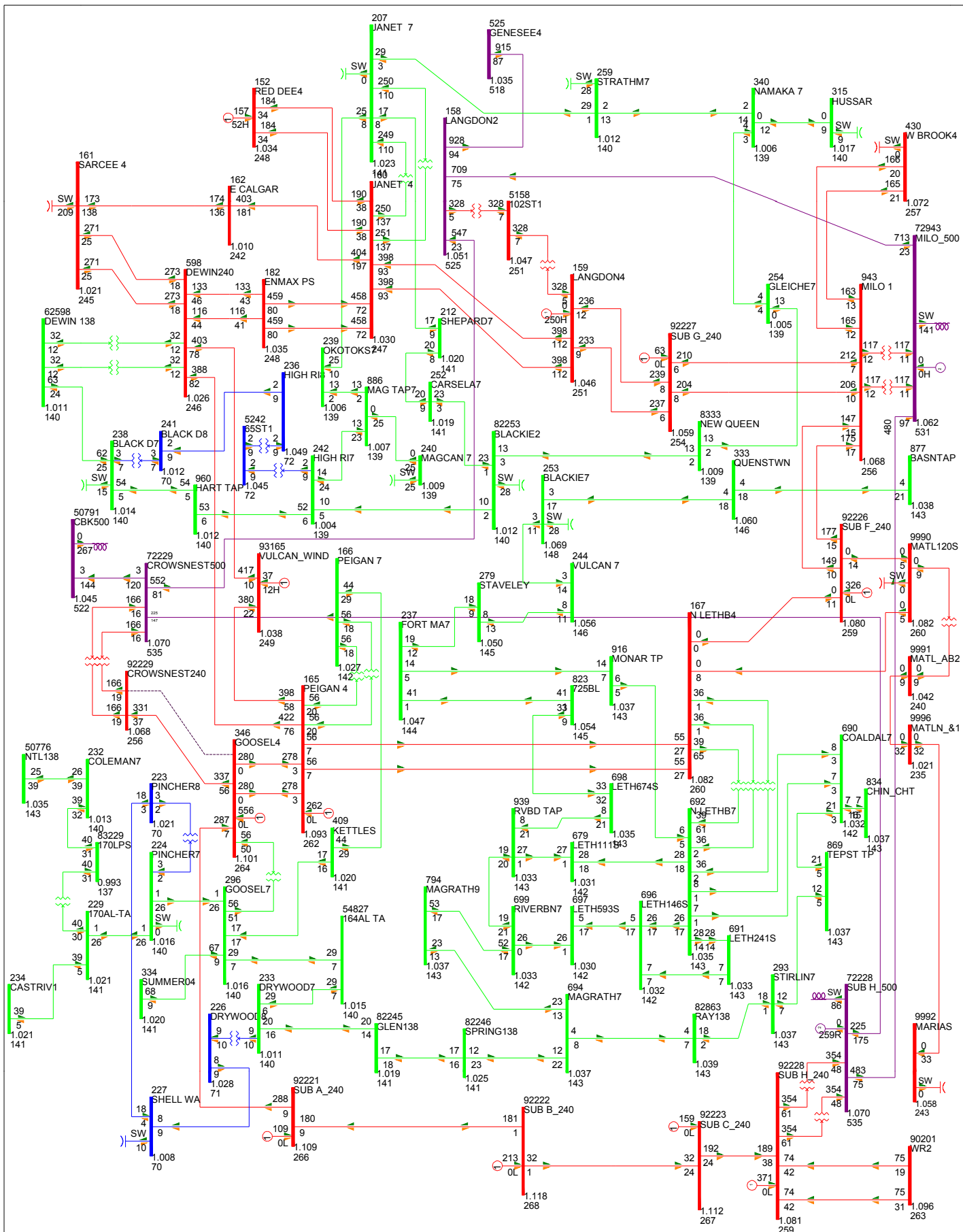


FIG 2017-3-SP-16: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -6 MW

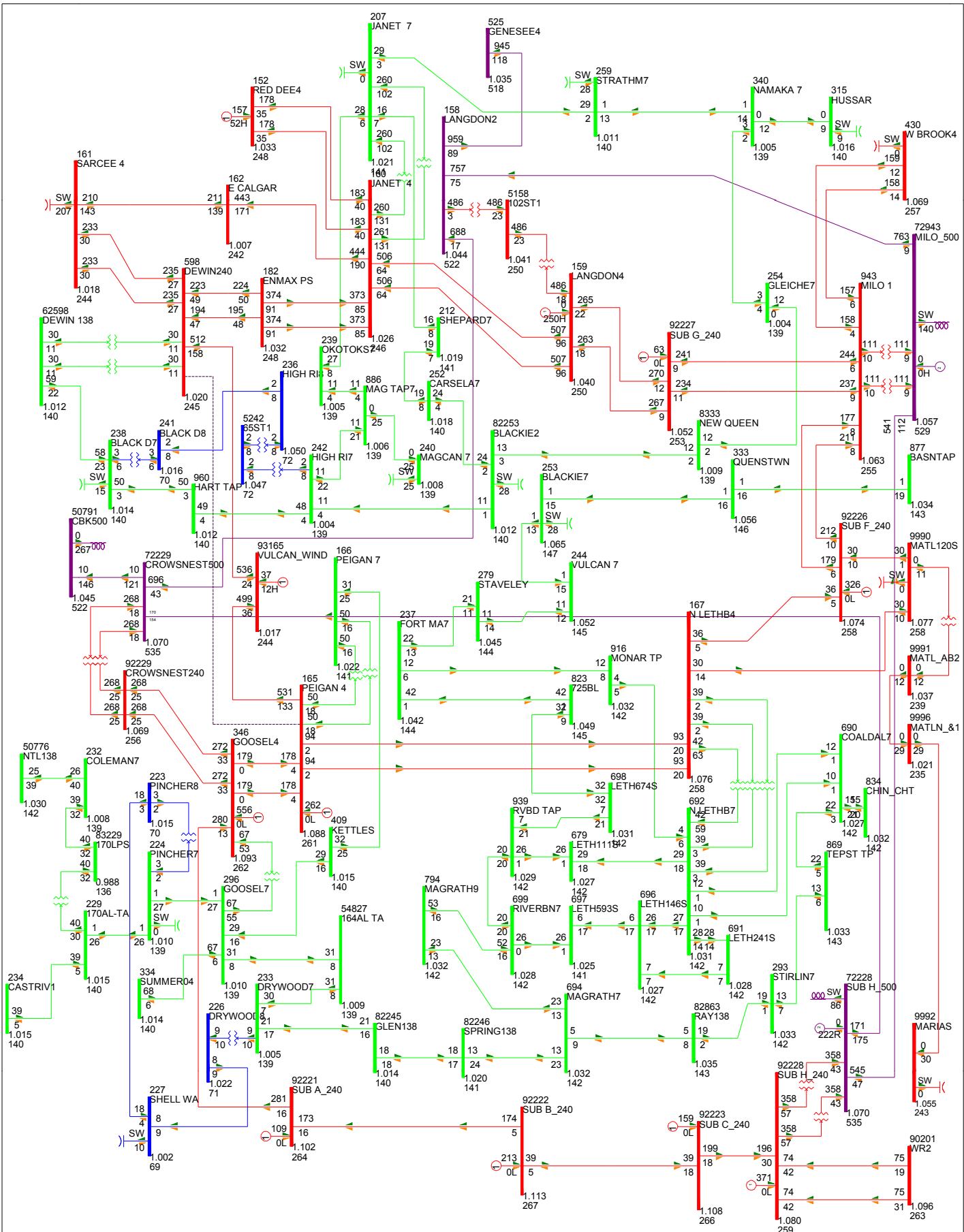


FIG 2017-3-SP-18: PEIGAN TO DEWINTON 240 KV

PROPORTIONAL WIND SCENARIO

2017 South West System MON, NOV 24 2008 14:44

ALTERNATIVE 3

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

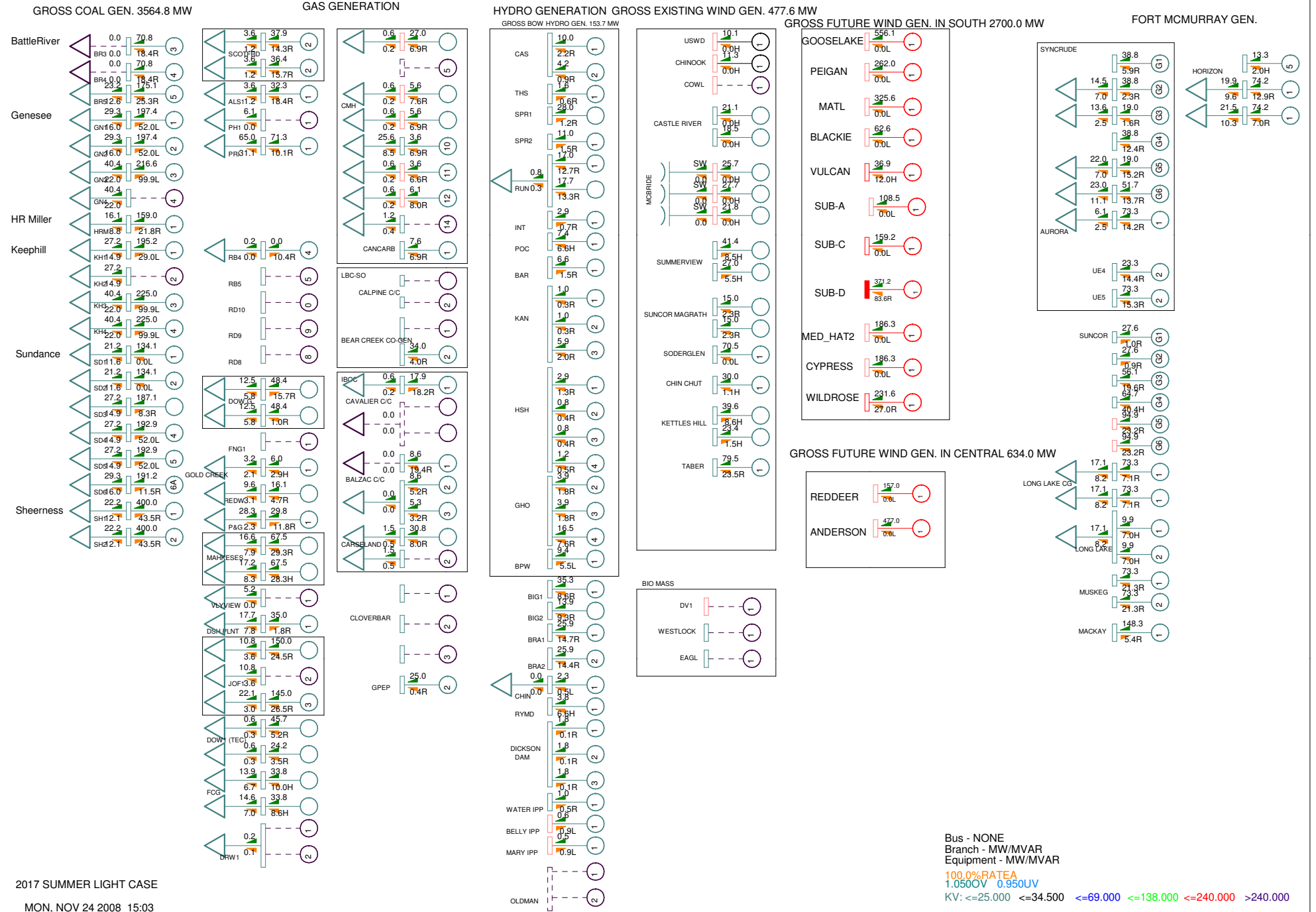
Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000

BC Export: -7 MW

GENERATION DISPATCH REPORT



2017 SUMMER LIGHT CASE

MON, NOV 24 2008 15:03

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0%RATEA
1.050OV 0.950UV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

Fig 2017-4-SL-1

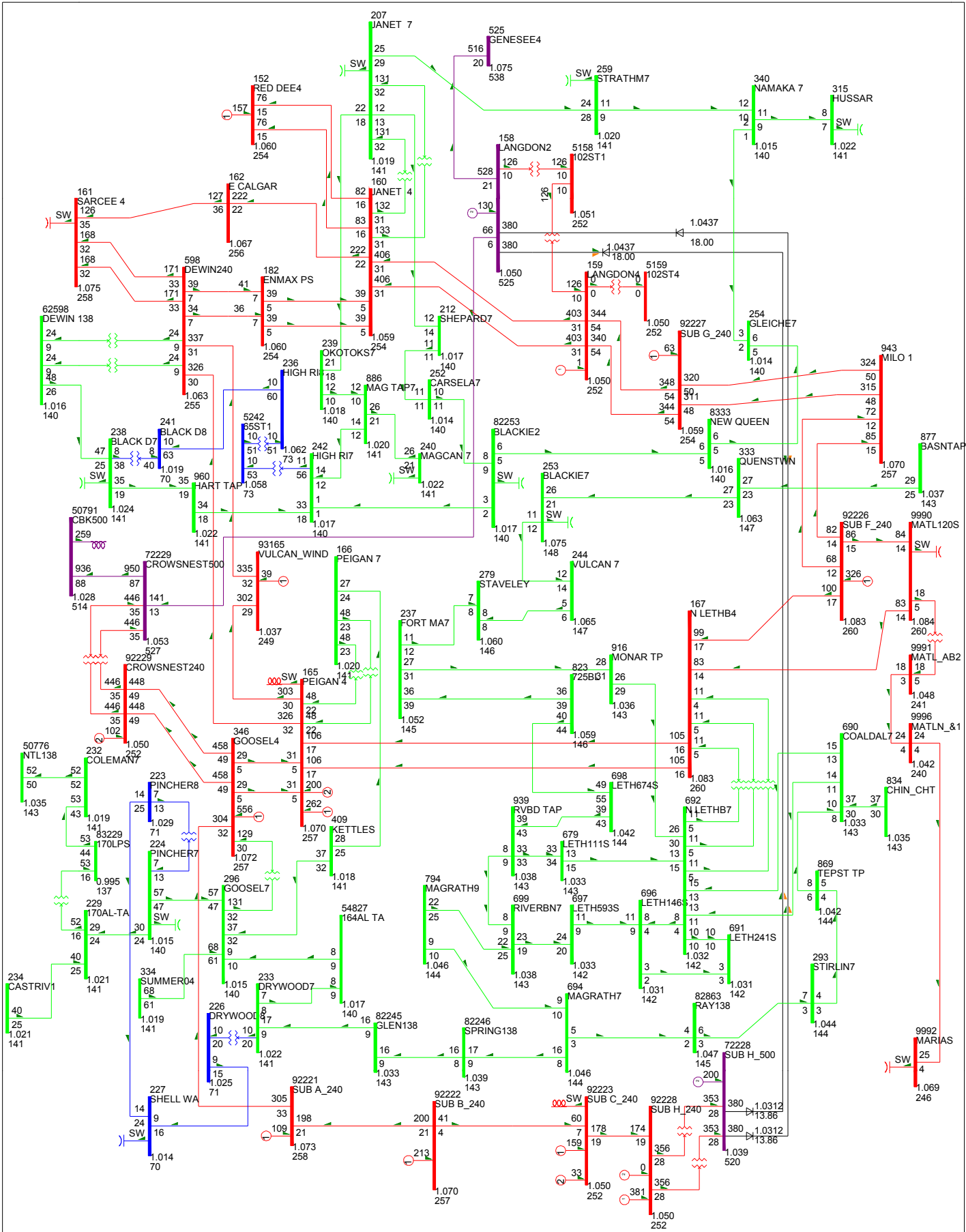


FIG 2017-4-SL-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1000 MW

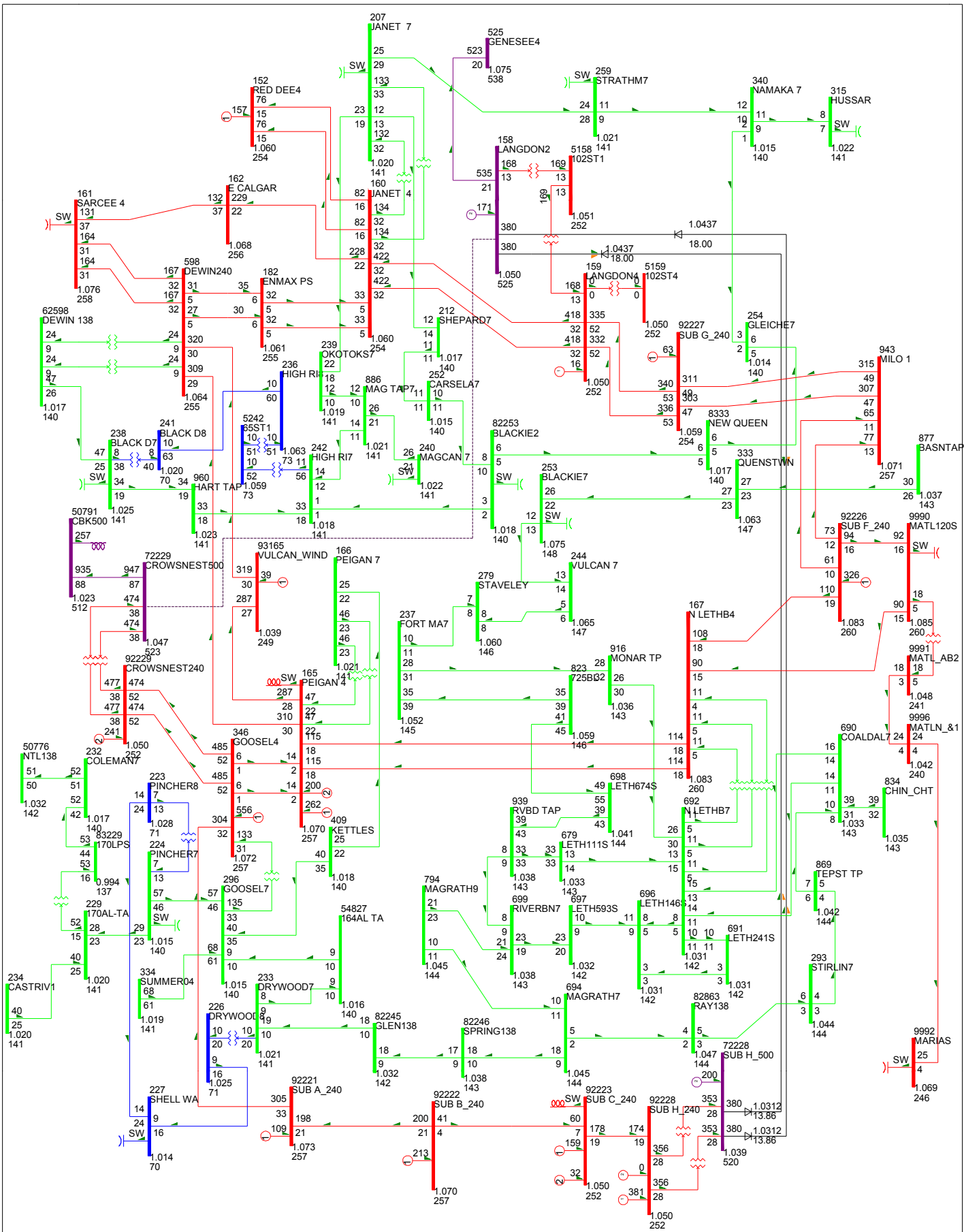


FIG 2017-4-SL-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1004 MW

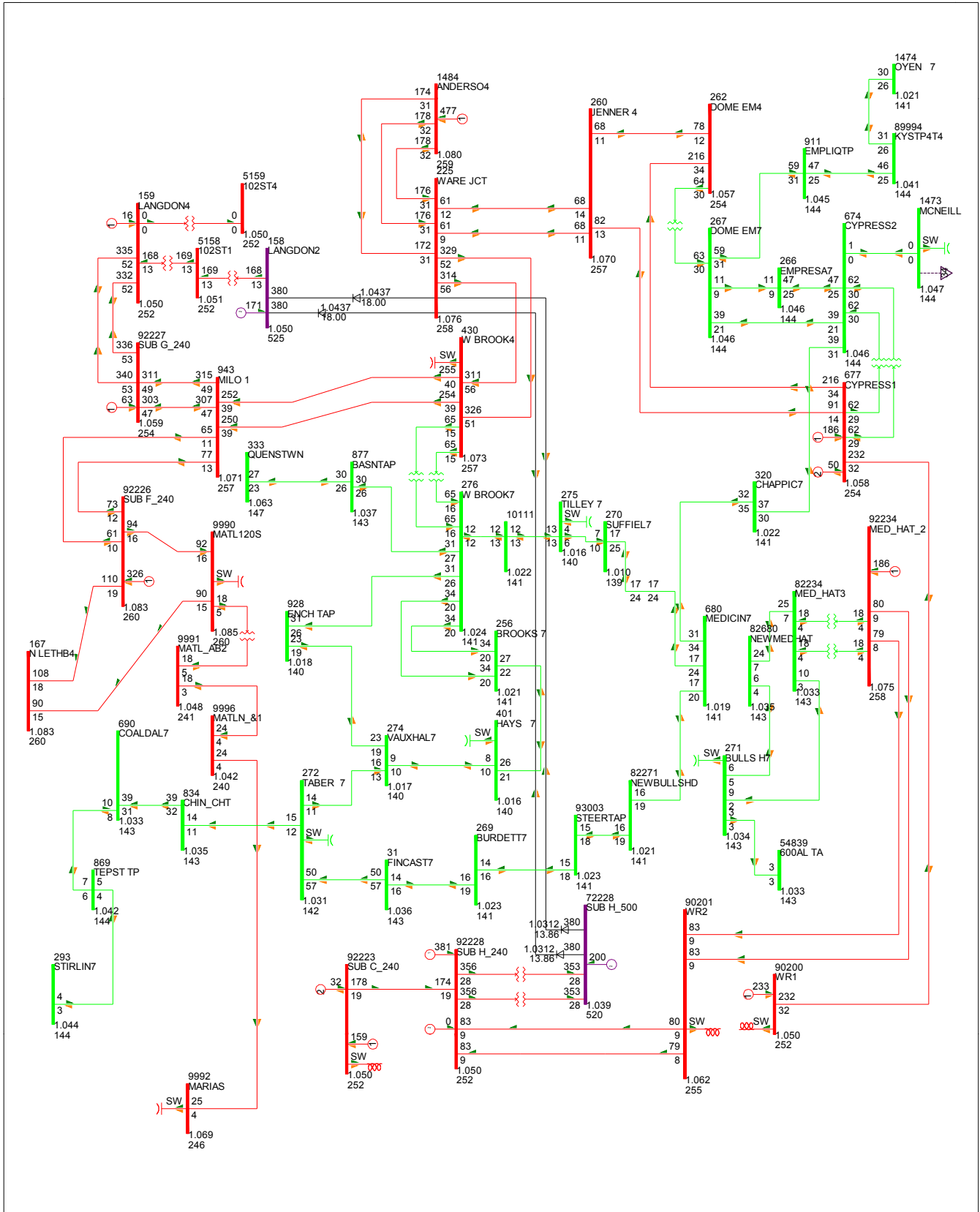


FIG 2017-4-SL-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1004 MW

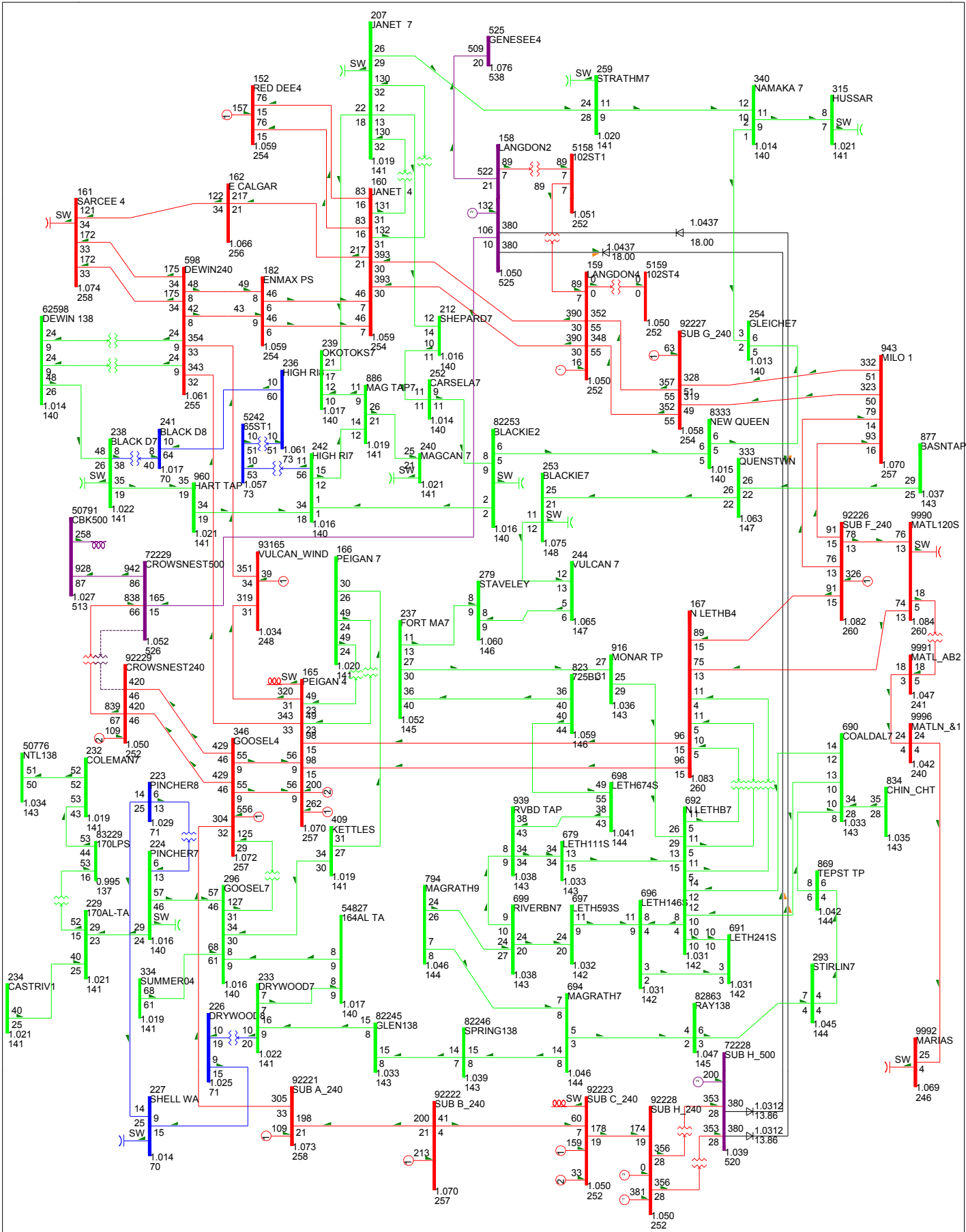


FIG 2017-4-SL-6: CROWNSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 995 MW

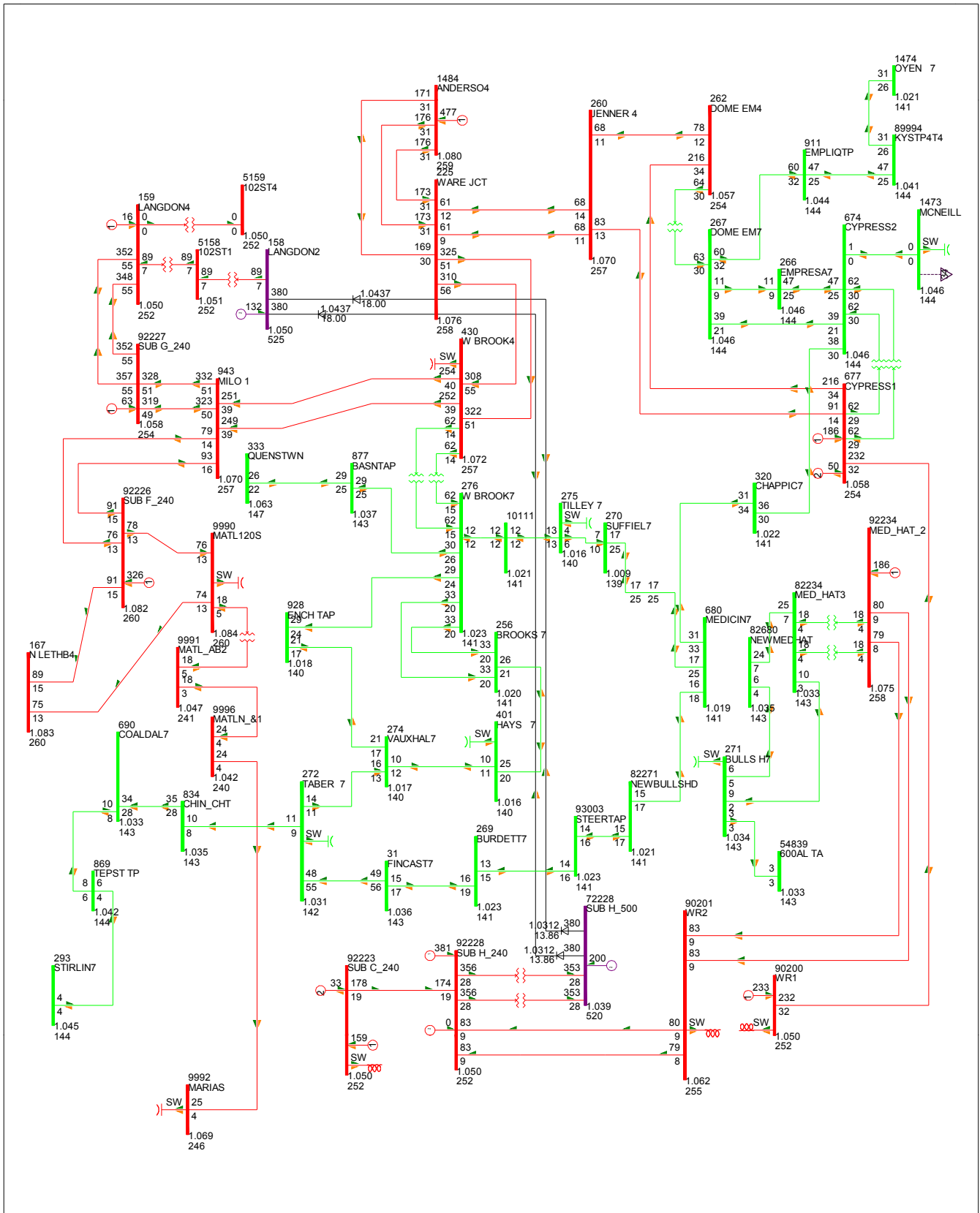


FIG 2017-4-SL-7: CROWSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 995 MW

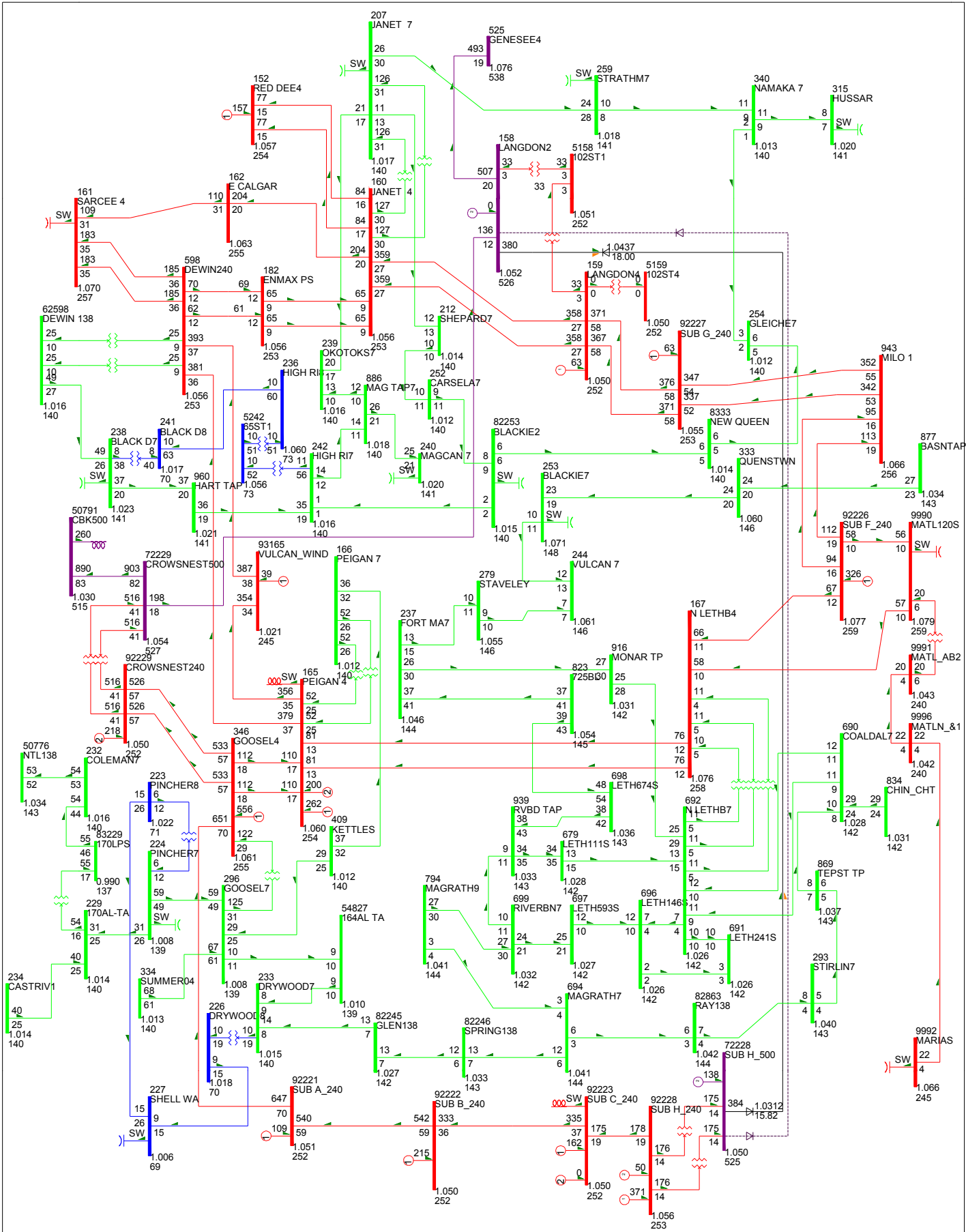


FIG 2017-4-SL-8: LANGDON TO SUB H 500 KV HVDC LINE

PROPORTIONAL WIND SCENARIO

2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 949 MW

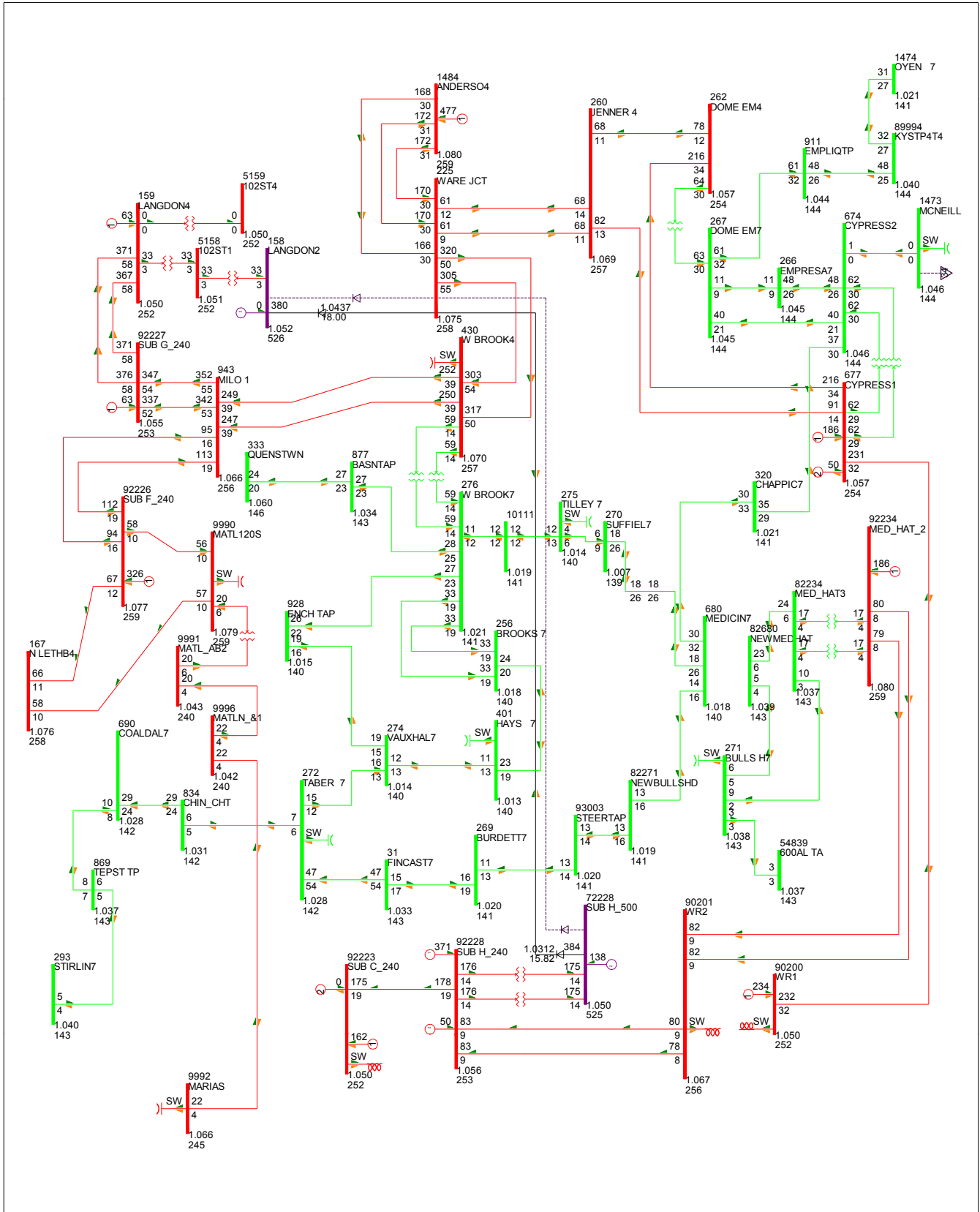


FIG 2017-4-SL-9: LANGDON TO SUB H 500 KV HVDC LINE
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 949 MW

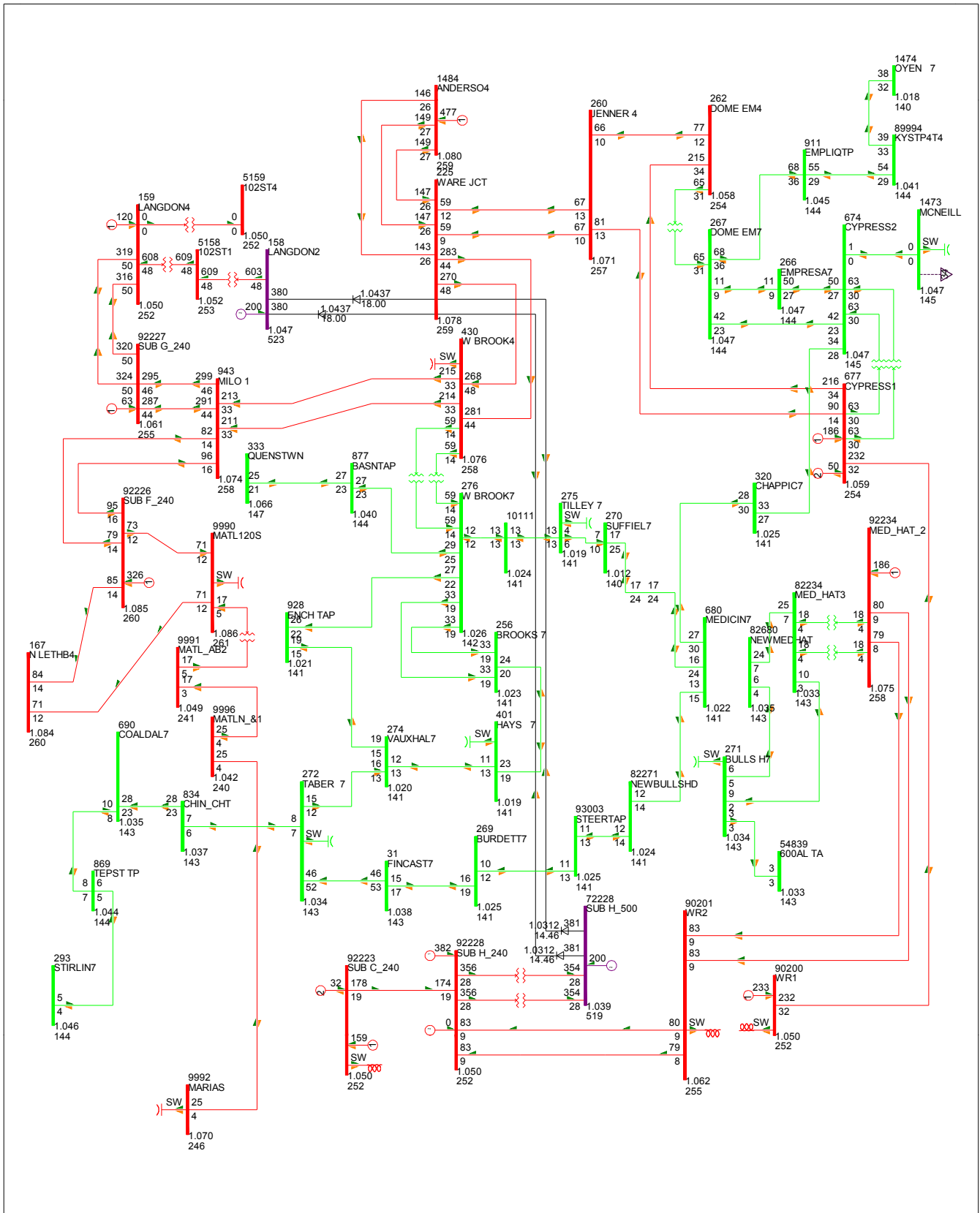


FIG 2017-4-SL-11: LANGDON TO GENESEE 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >=600.000
 BC Export: 901 MW

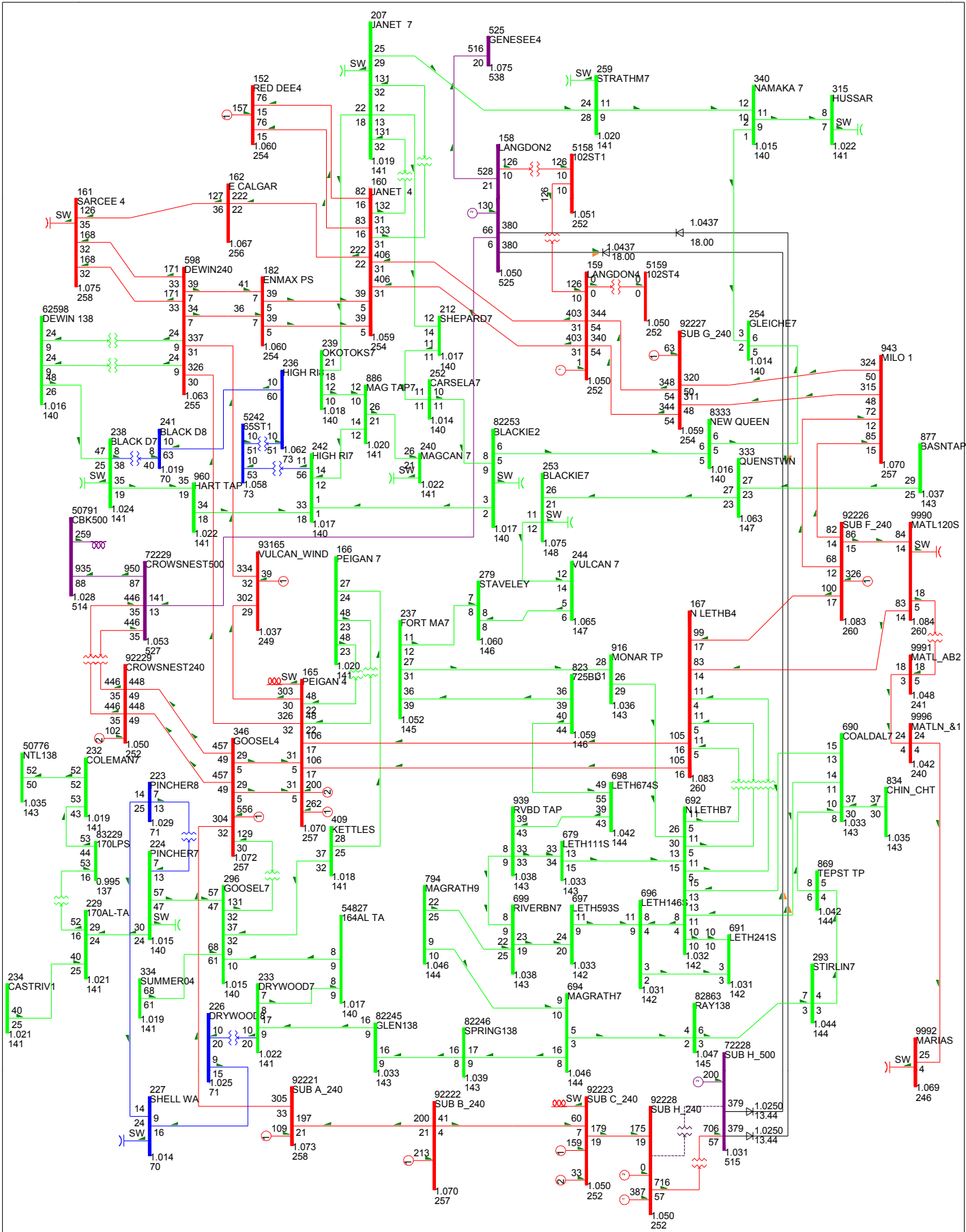


FIG 2017-4-SL-12: SUB H 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1000 MW

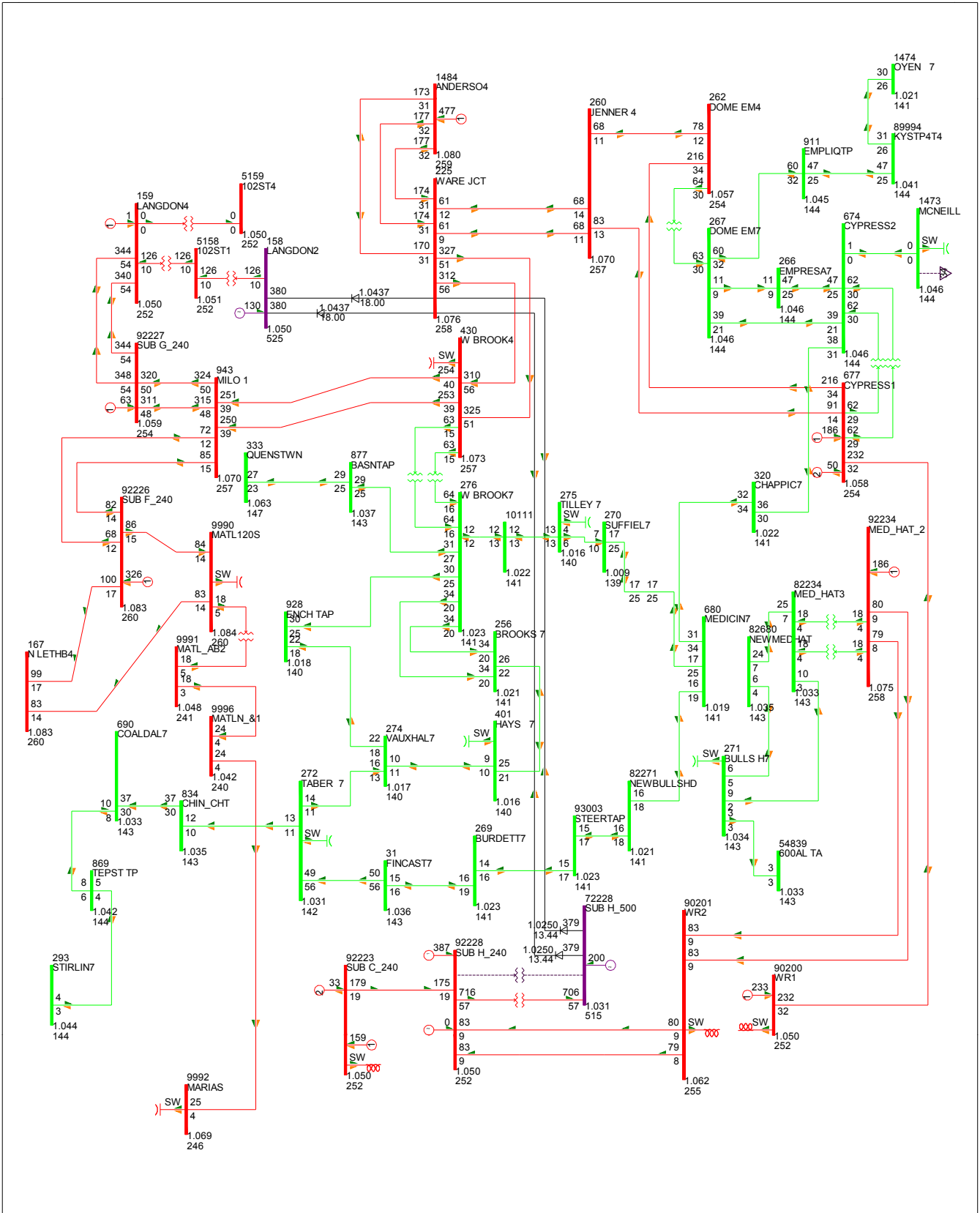


FIG 2017-4-SL-13: SUB H 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1000 MW

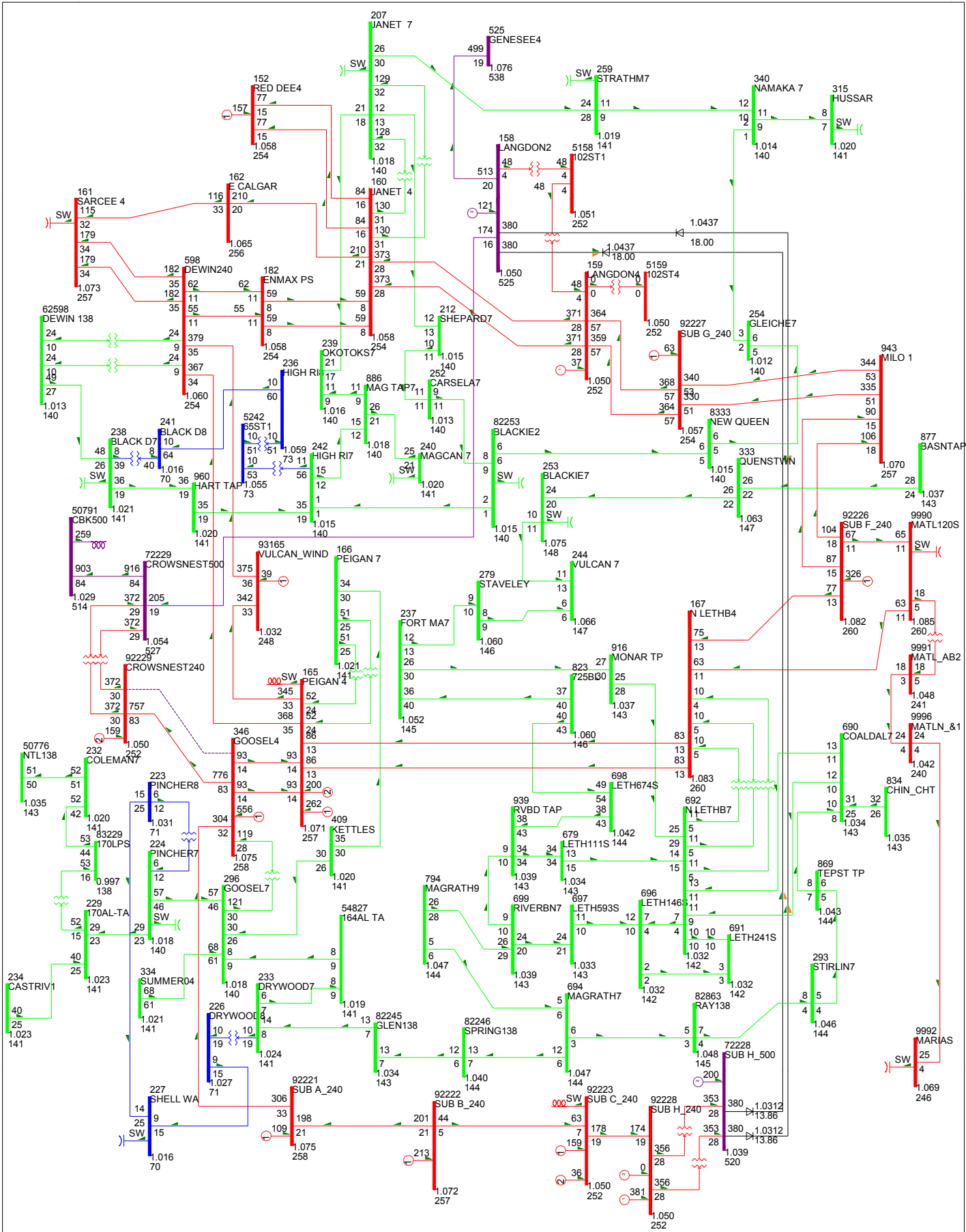


FIG 2017-4-SL-14: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 972 MW

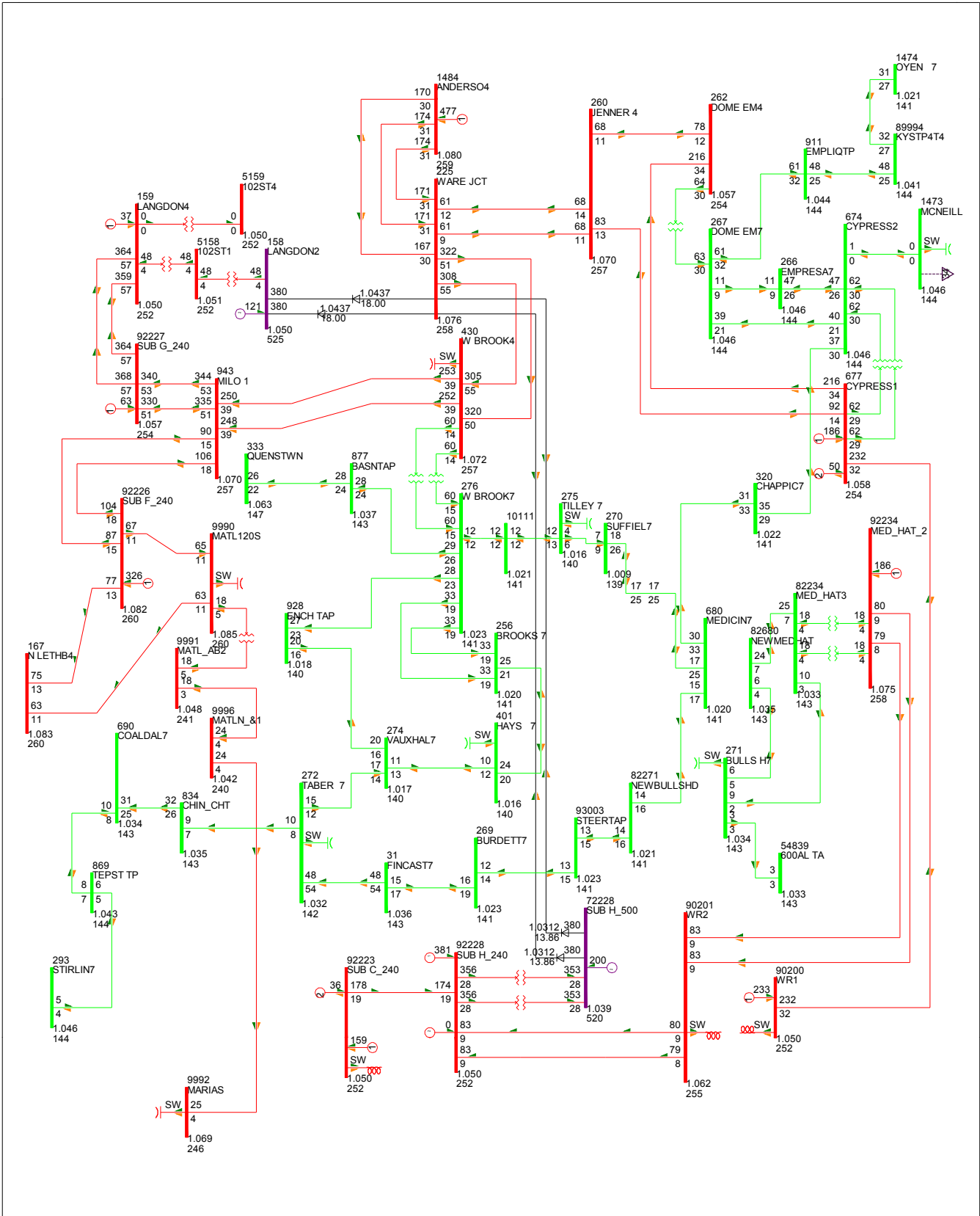


FIG 2017-4-SL-15: CROWSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 972 MW

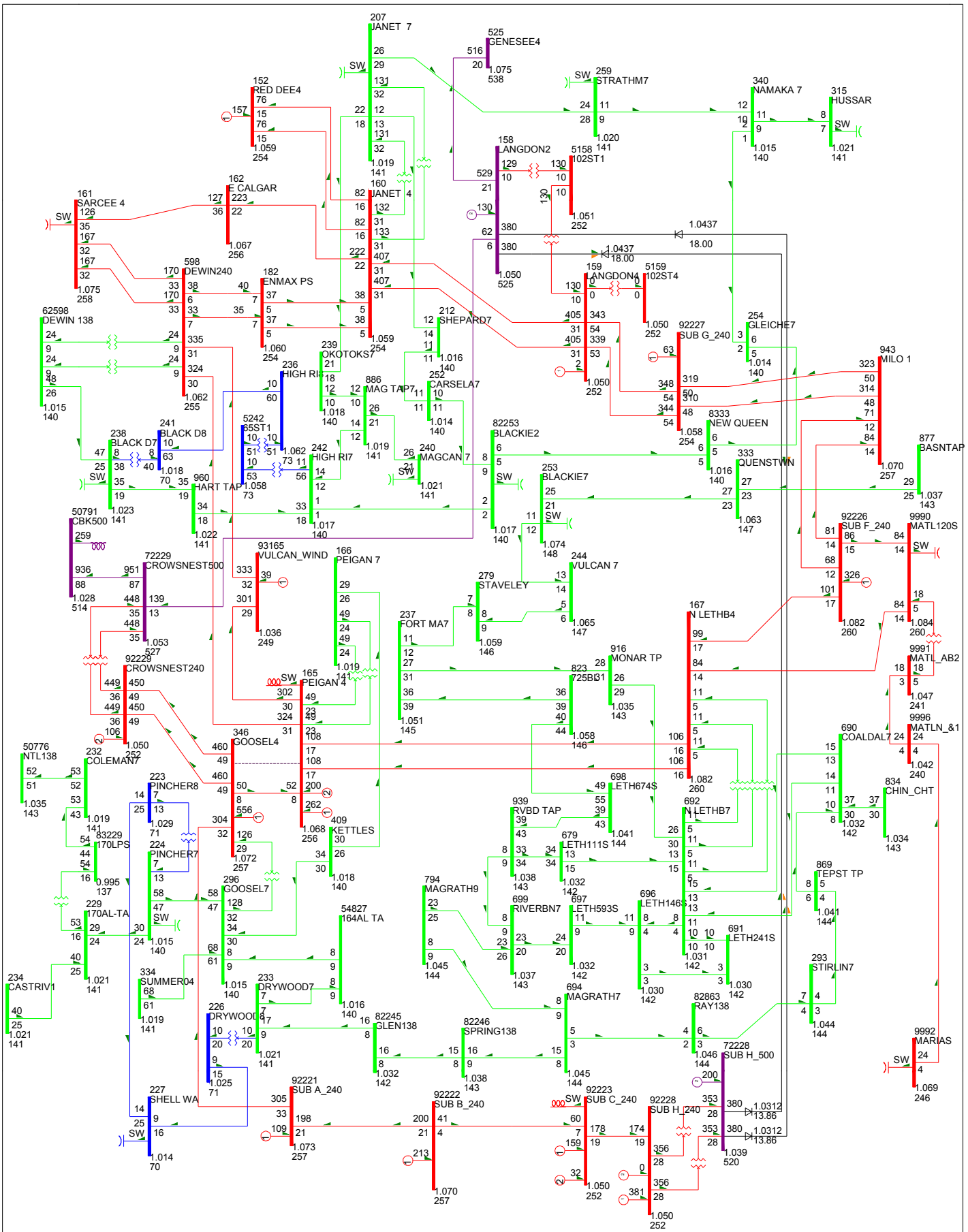


FIG 2017-4-SL-16: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1001 MW

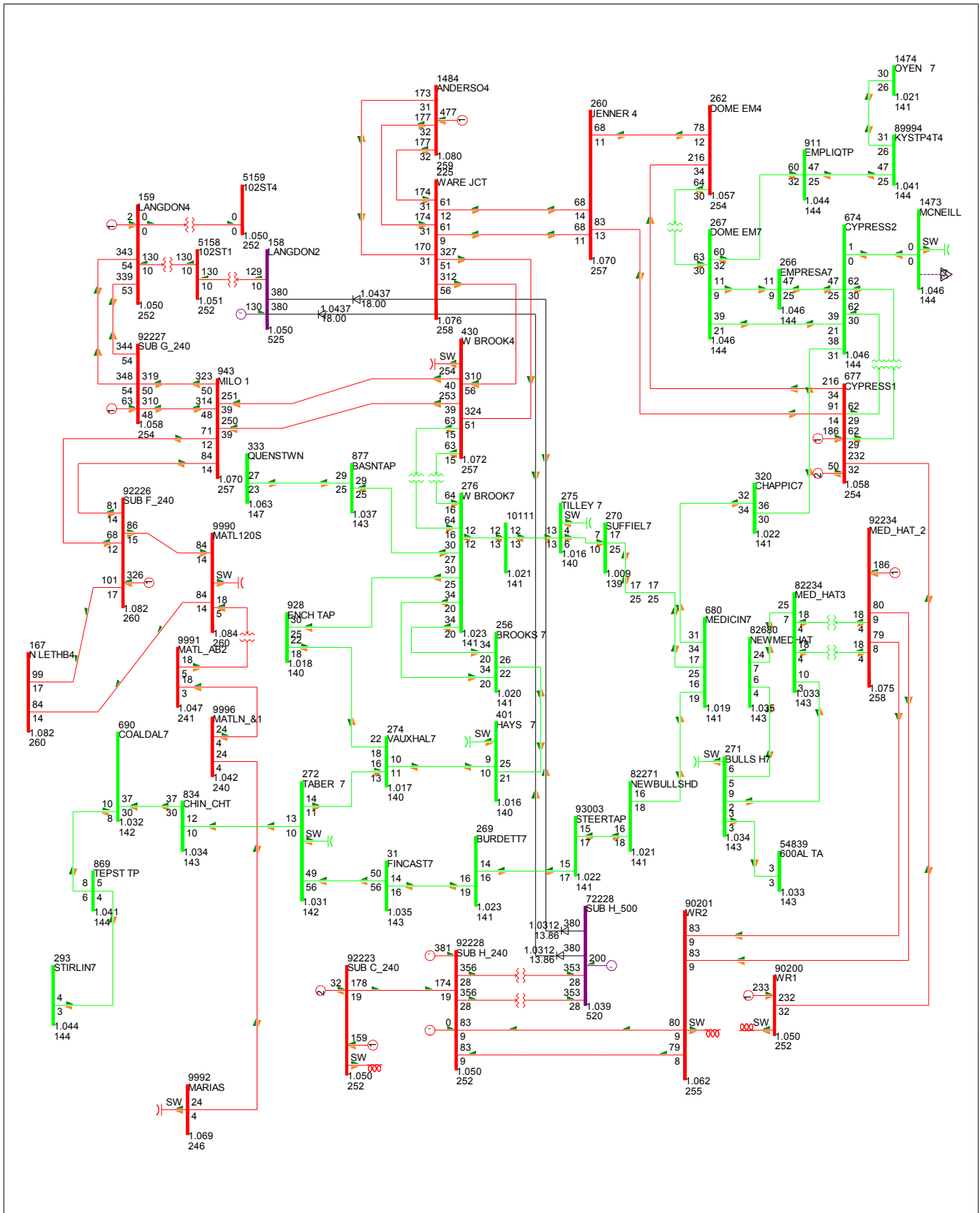


FIG 2017-4-SL-17: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 1001 MW

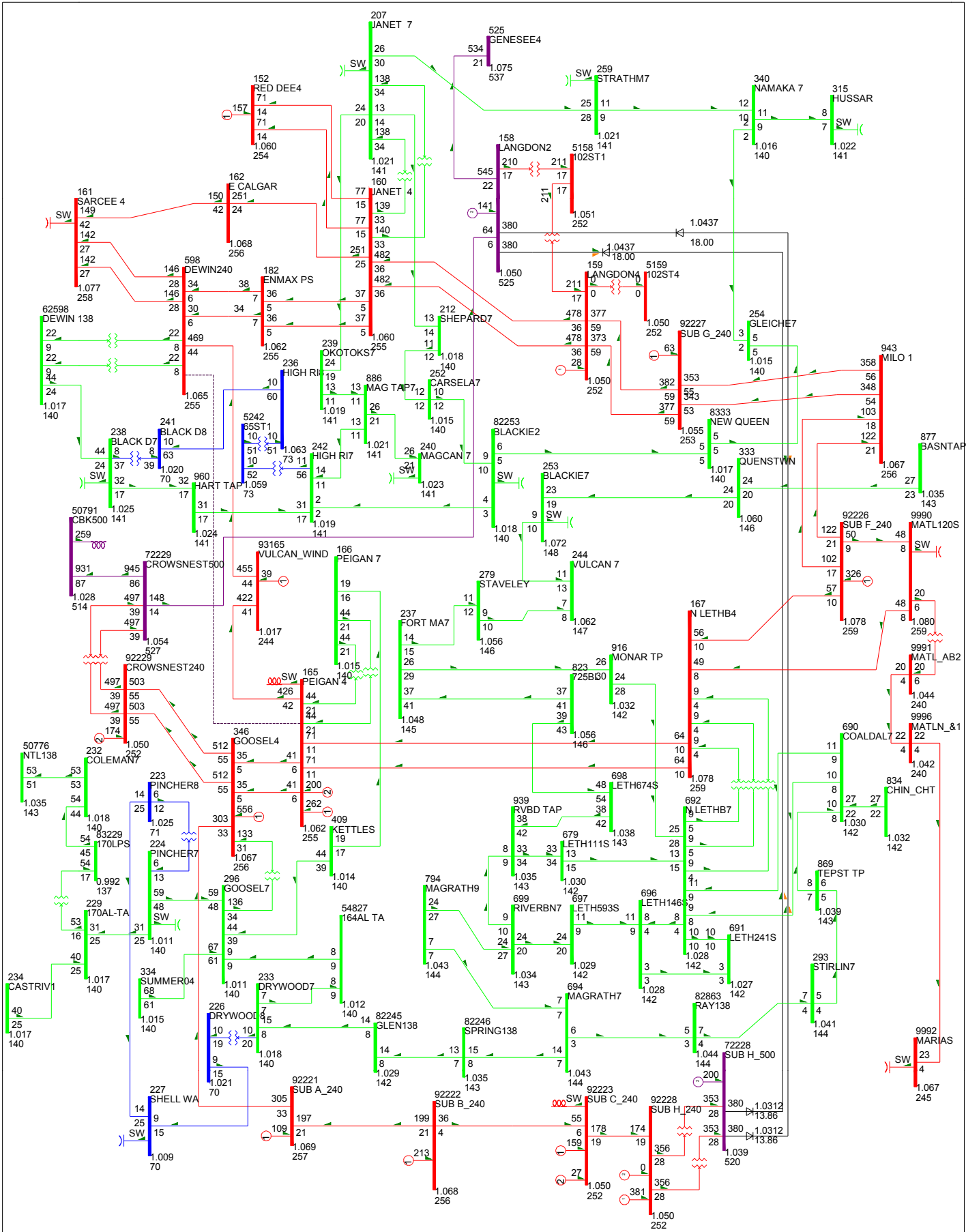


FIG 2017-4-SL-18: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 990 MW

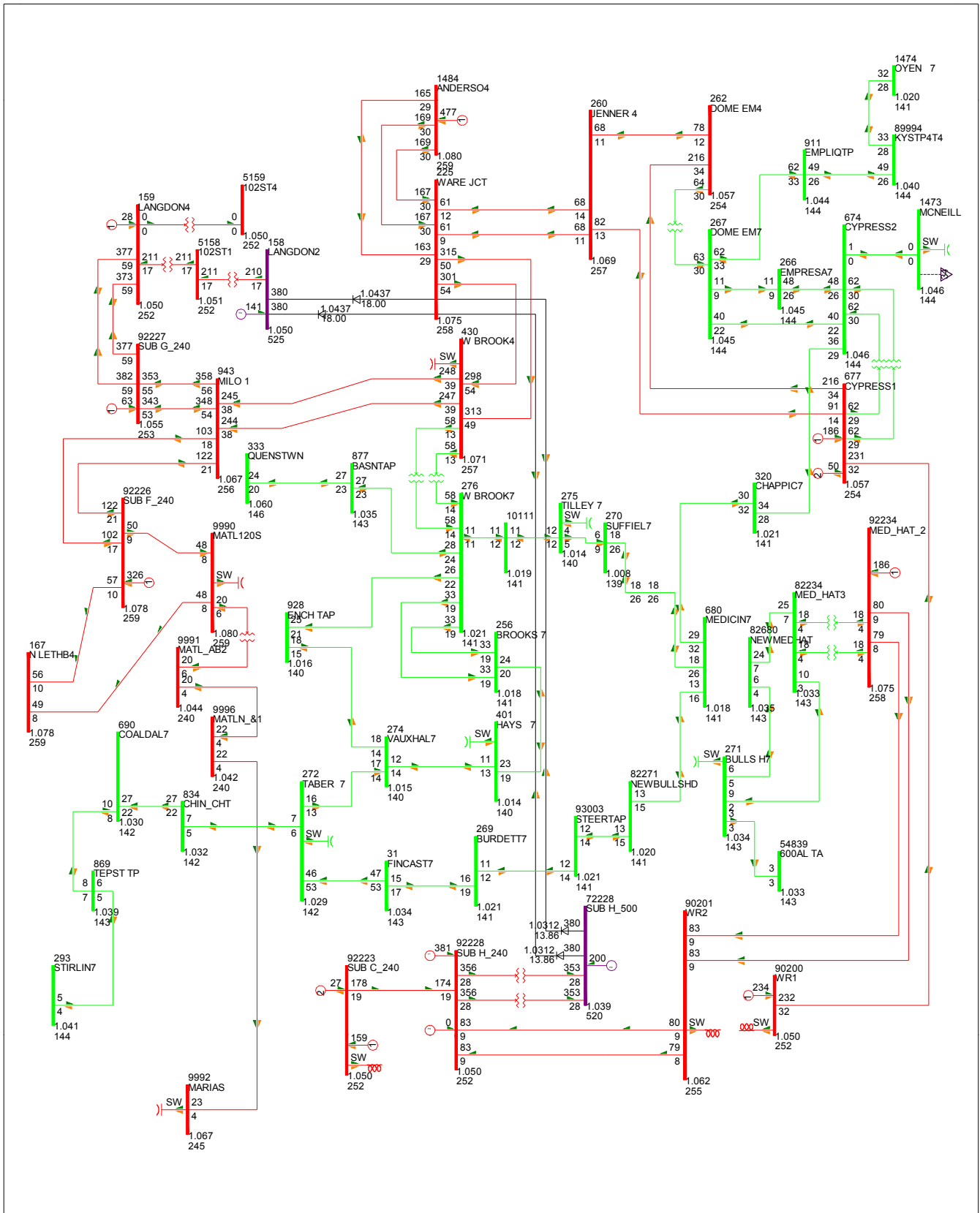


FIG 2017-4-SL-19: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 990 MW

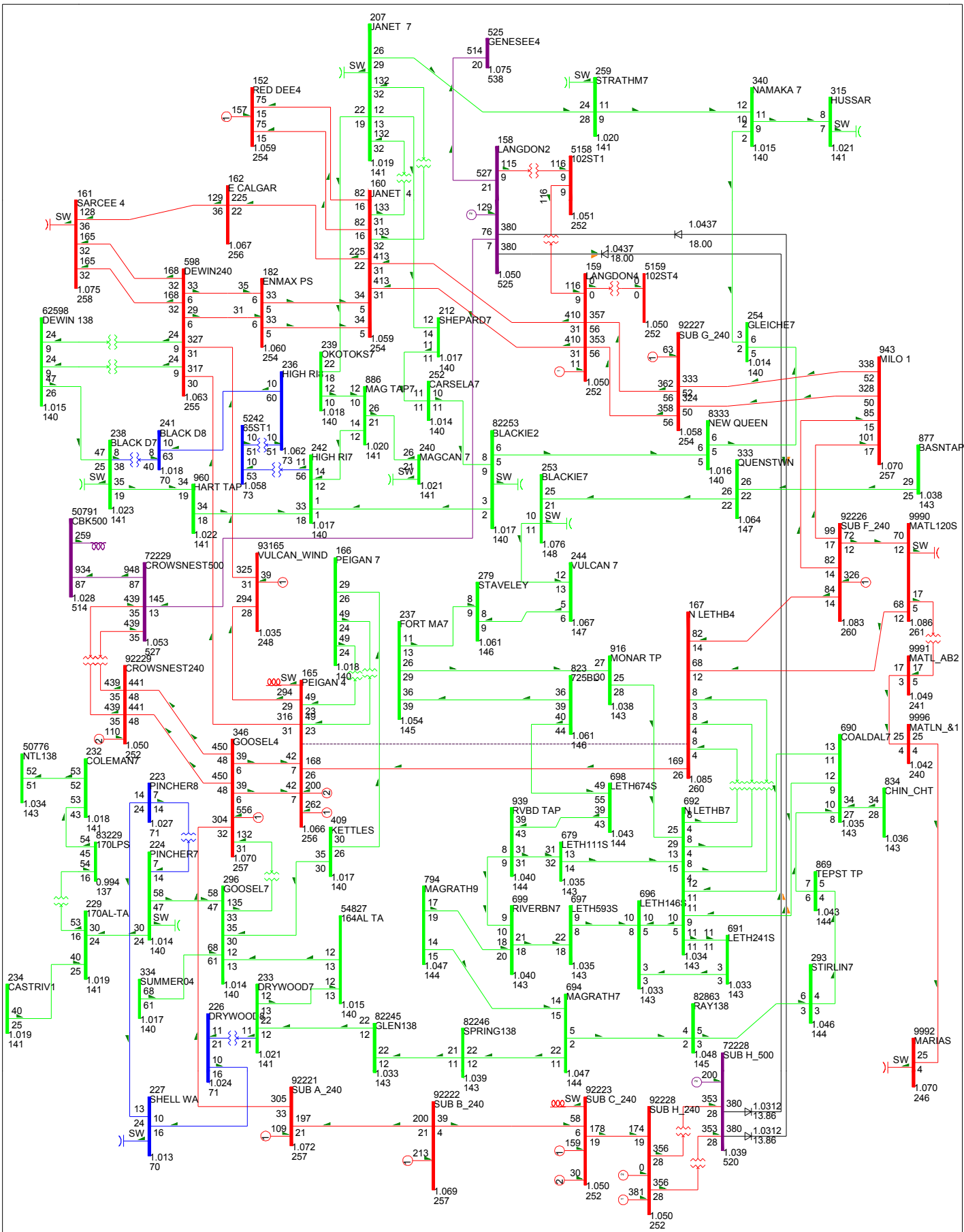


FIG 2017-4-SL-20: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: 999 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3587.4 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS BOW HYDRO GEN. 149.2 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

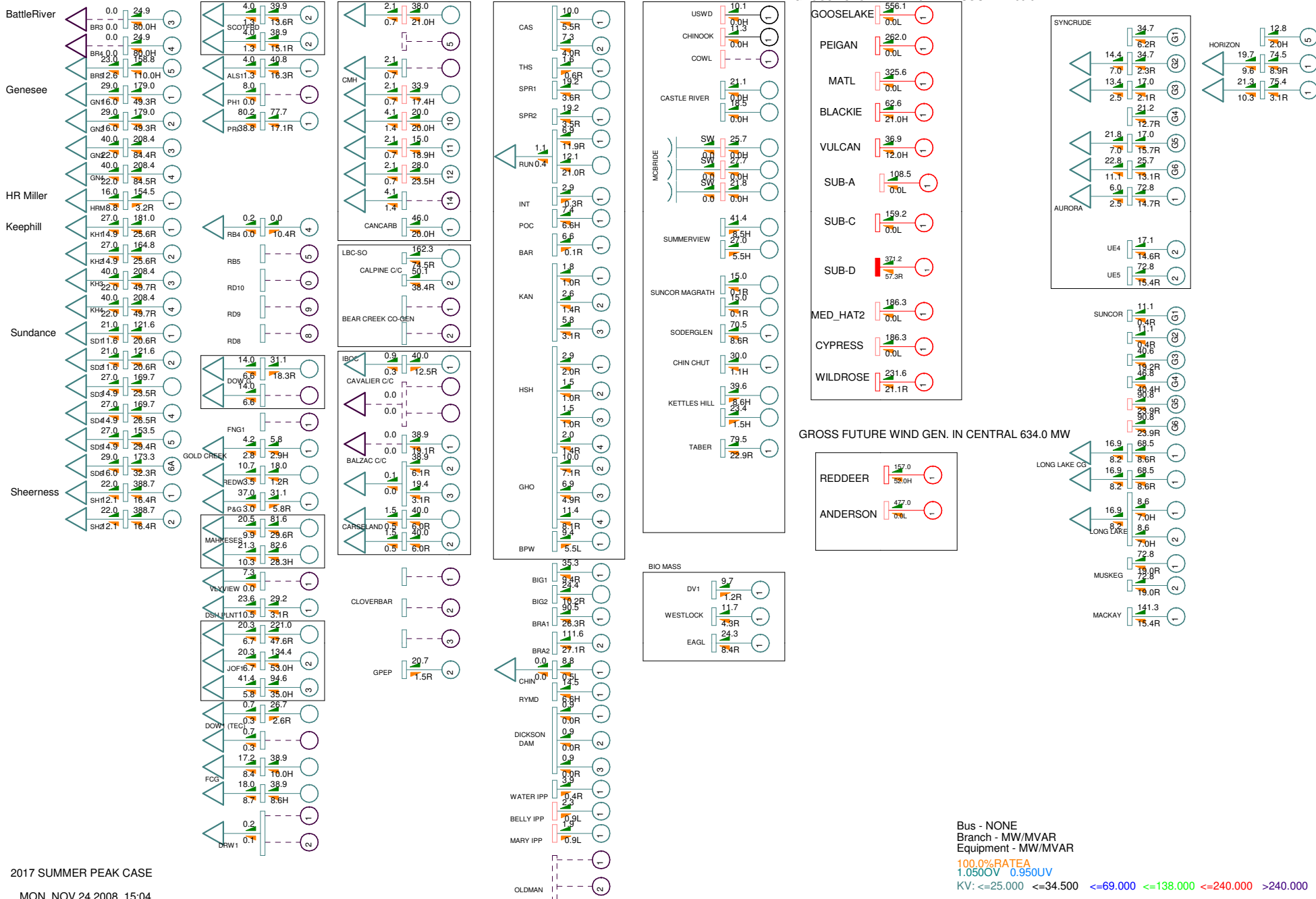


Fig 2017-4-SP-1

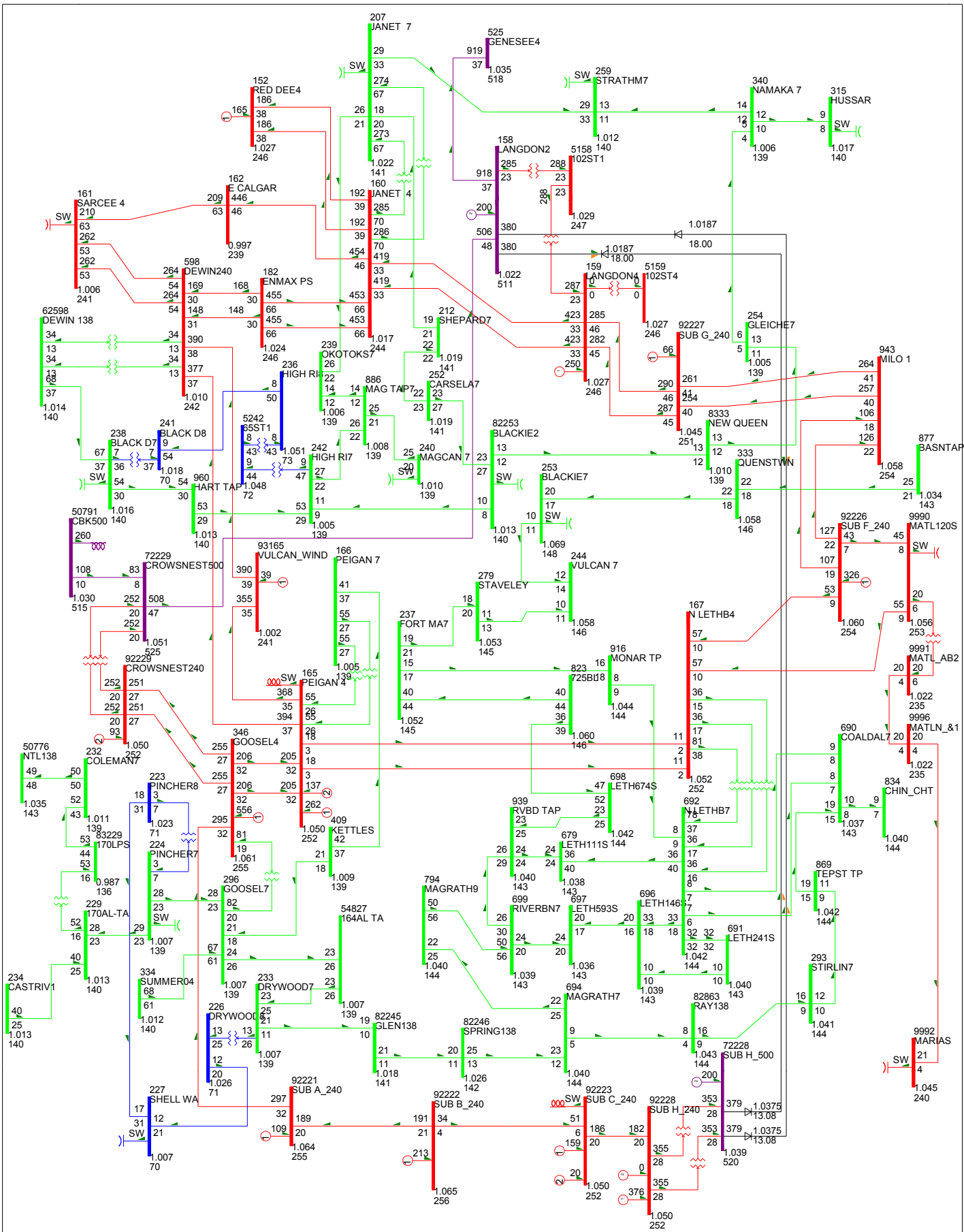


FIG 2017-4-SP-2: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -14 MW

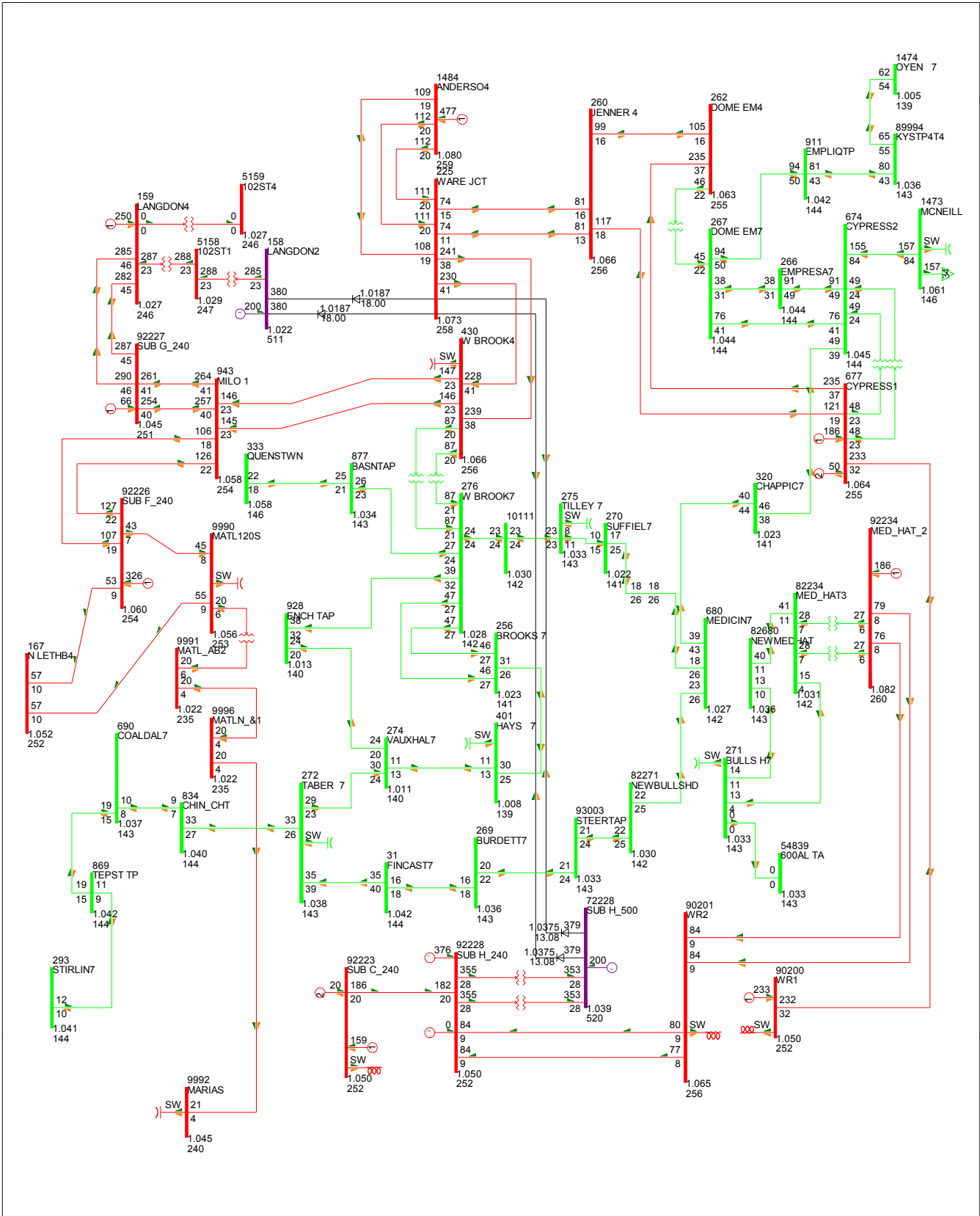


FIG 2017-4-SP-3: N-0 CONDITION
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -14 MW

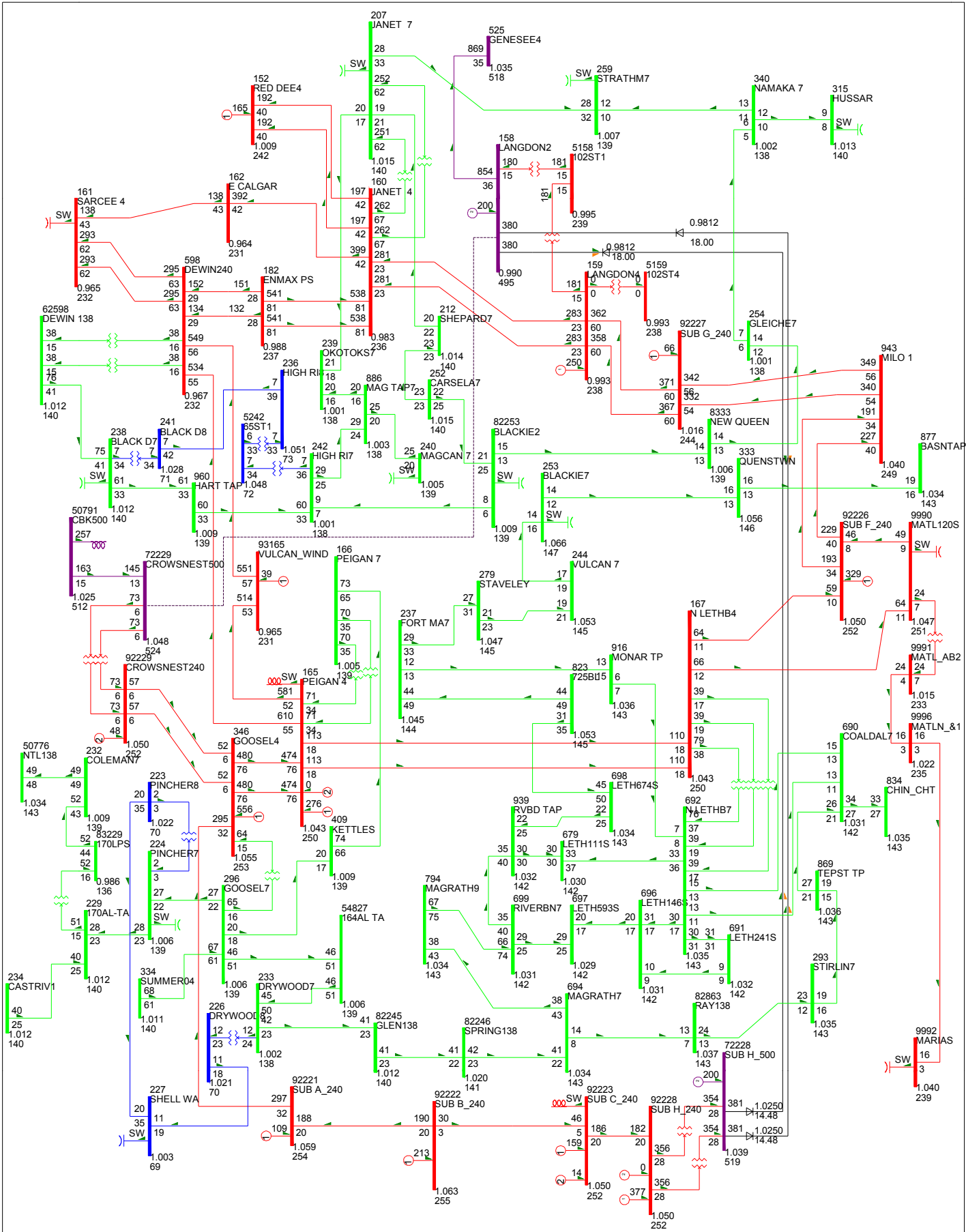


FIG 2017-4-SP-4: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -146 MW

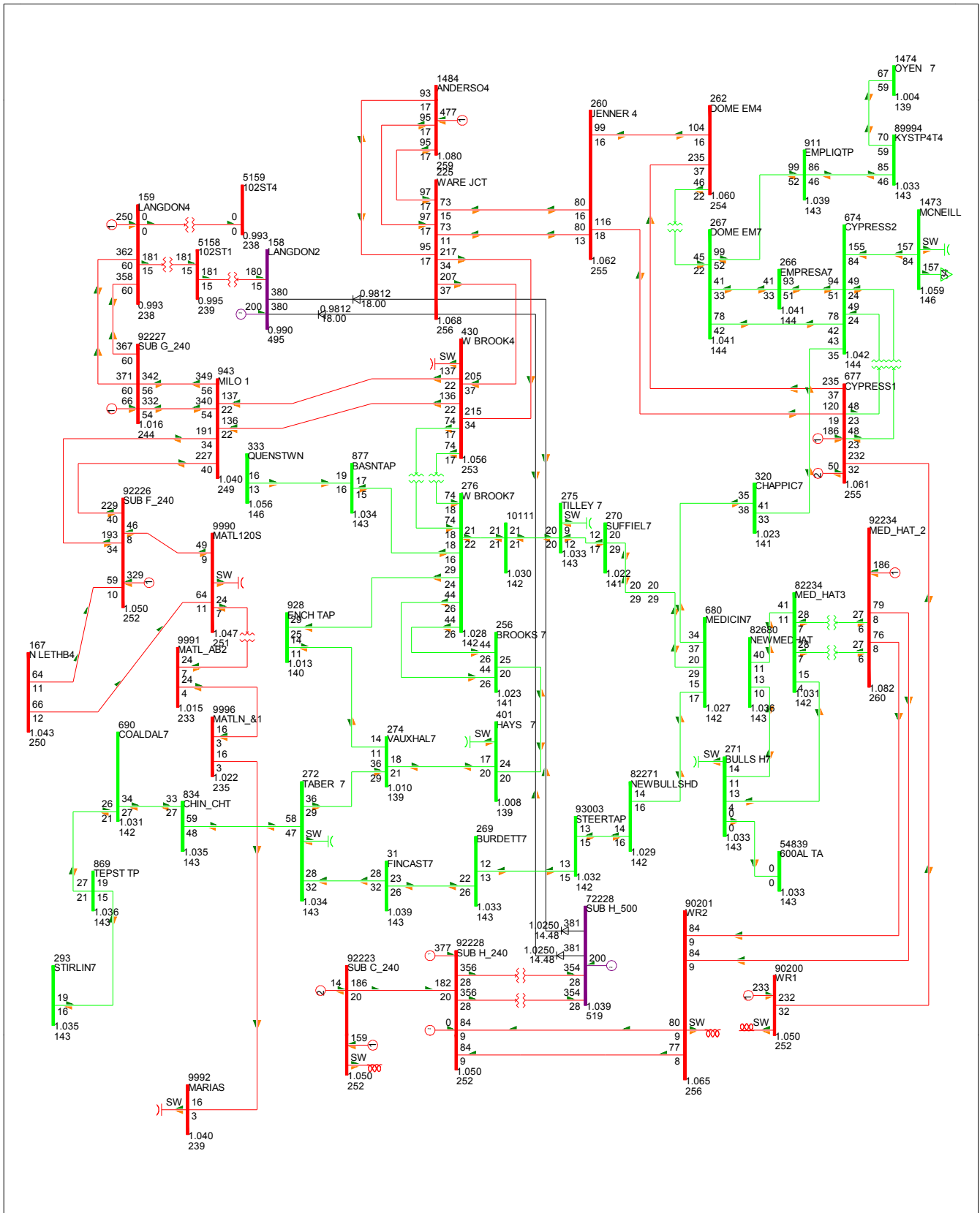


FIG 2017-4-SP-5: LANGDON TO CROWSNEST 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -146 MW

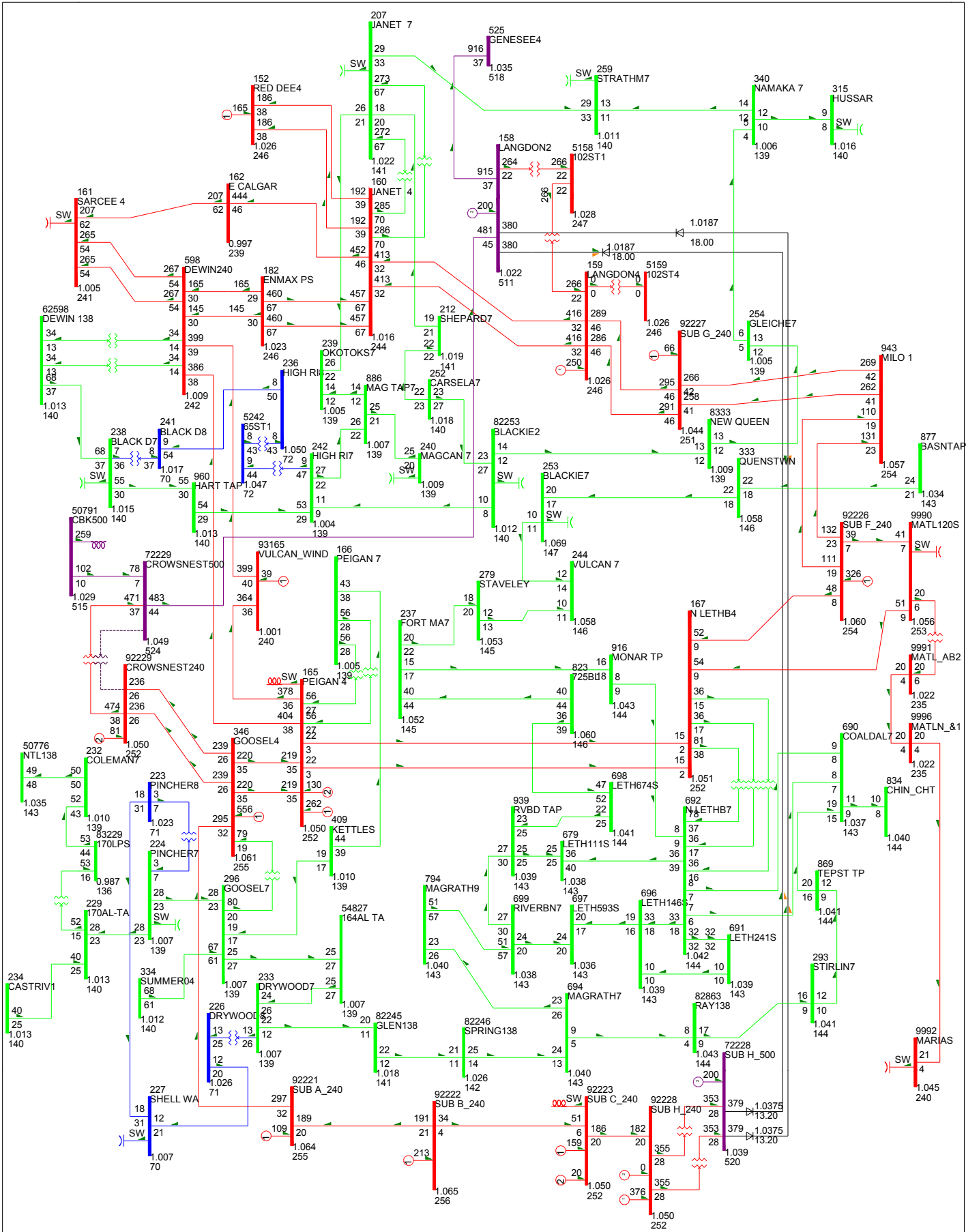


FIG 2017-4-SP-6: CROSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -18 MW

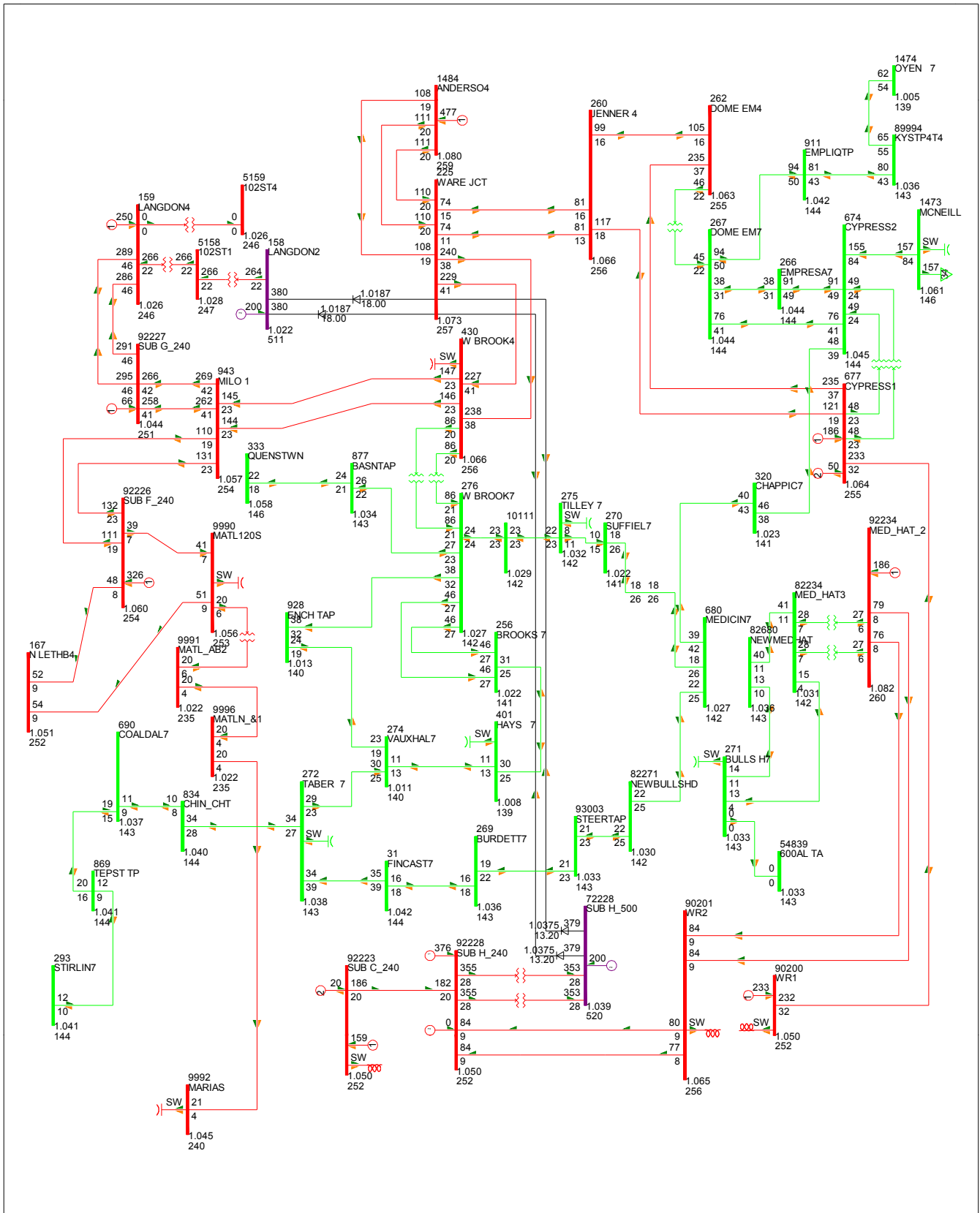


FIG 2017-4-SP-7: CROWSNEST 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -18 MW

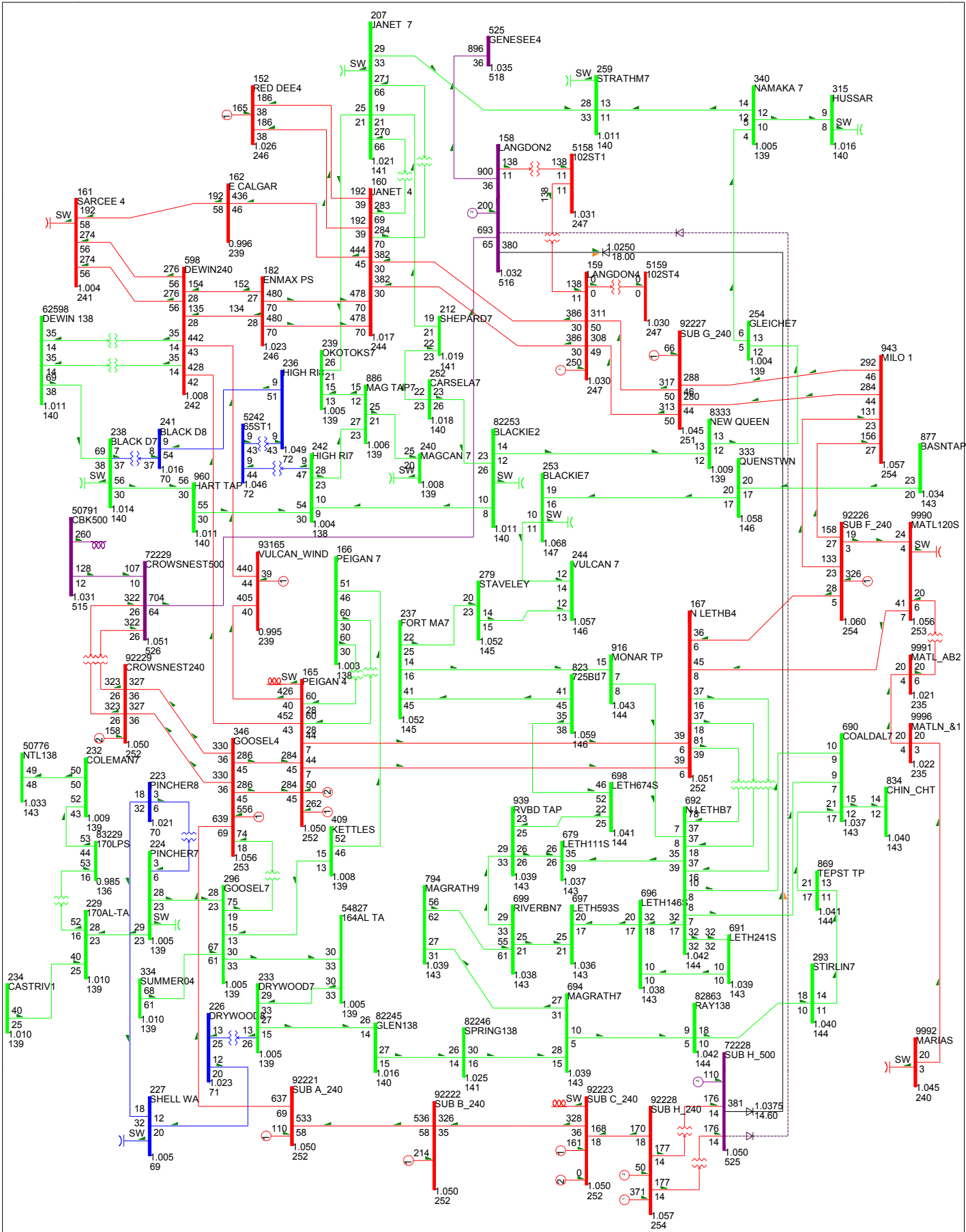


FIG 2017-4-SP-8: LANGDON TO SUB H 500 KV HVDC LINE
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -70 MW

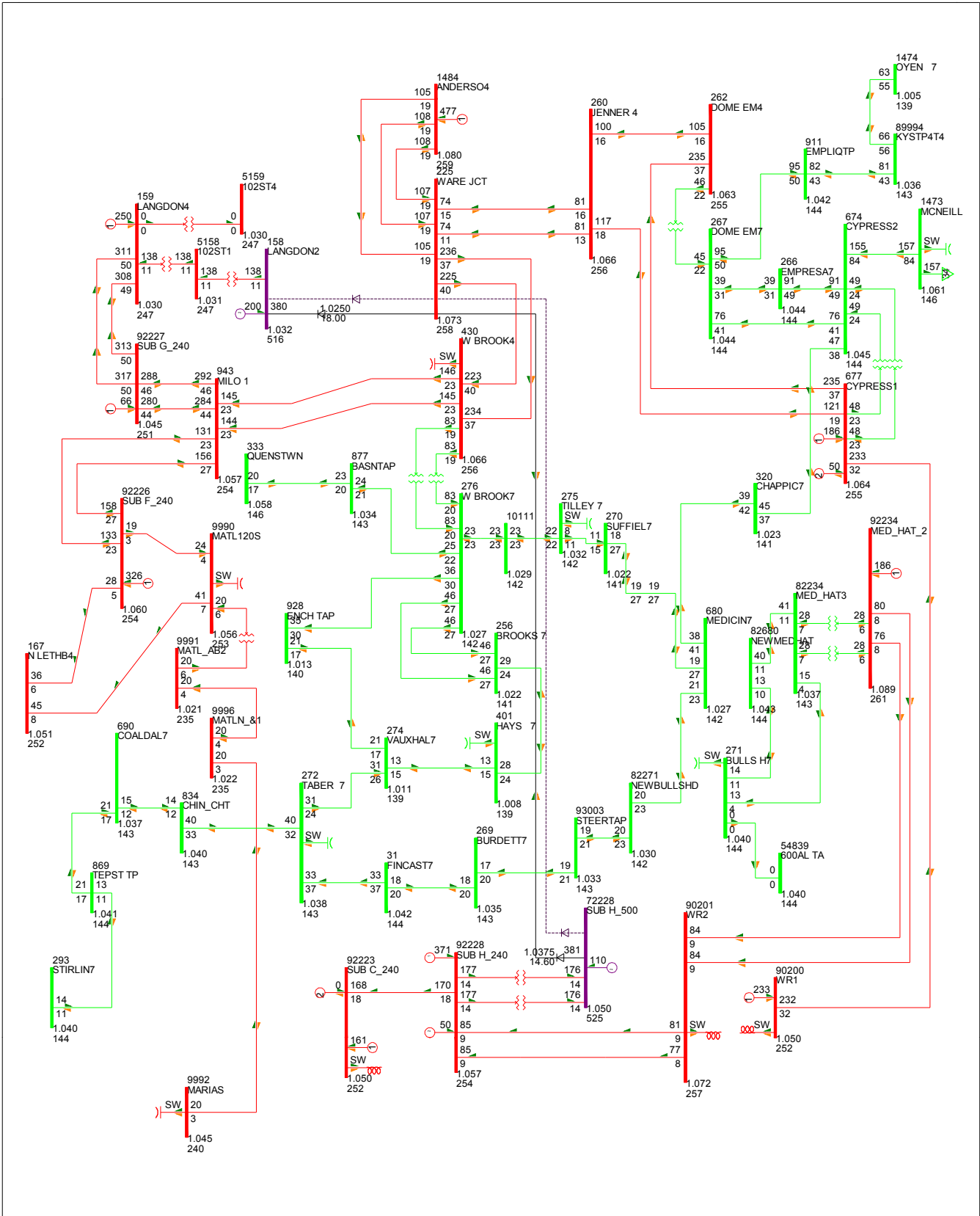


FIG 2017-4-SP-9: LANGDON TO SUB H 500 KV HVDC LINE
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >600.000
 BC Export: -70 MW

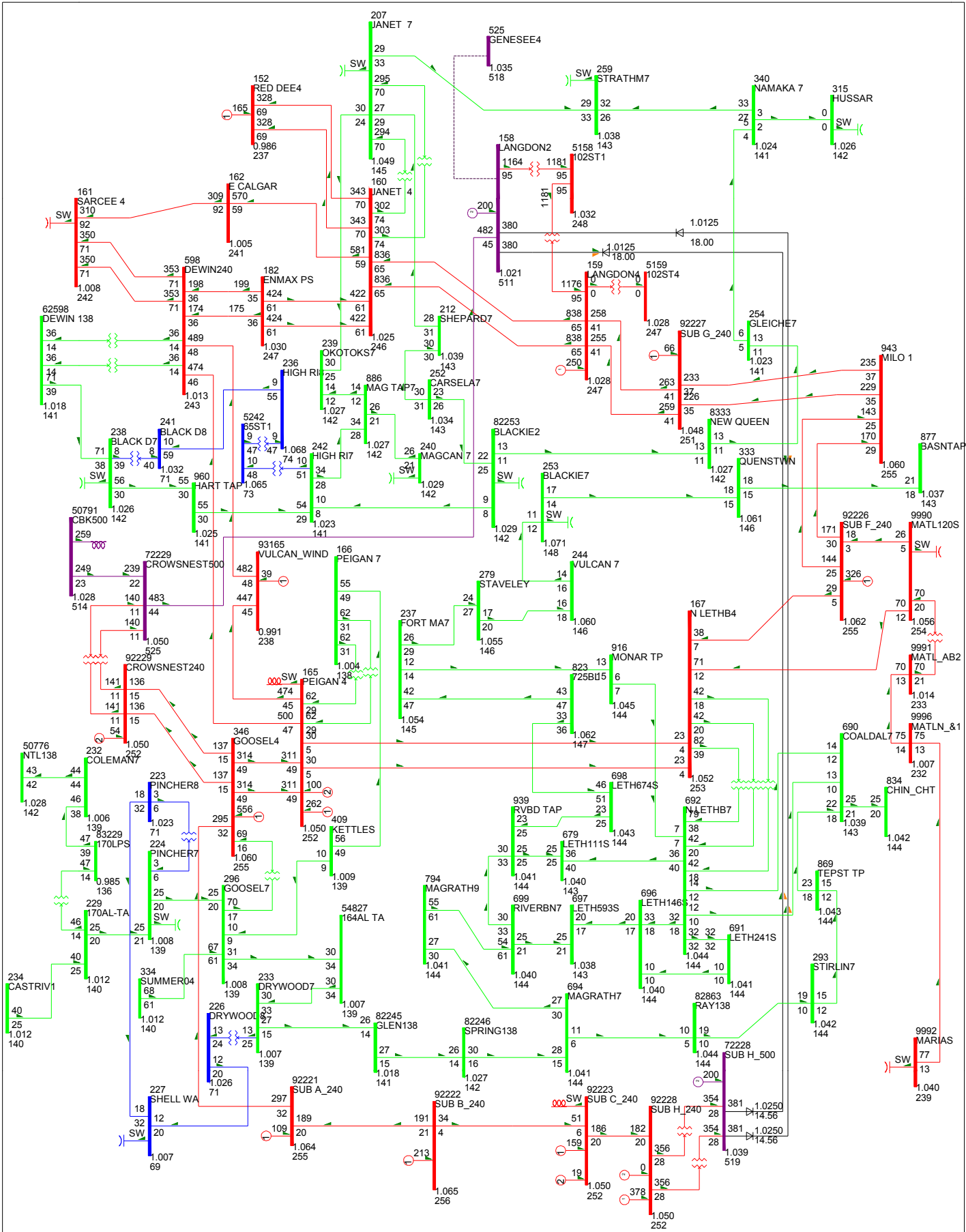


FIG 2017-4-SP-10: LANGDON TO GENESSEE 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 10:33

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -245 MW

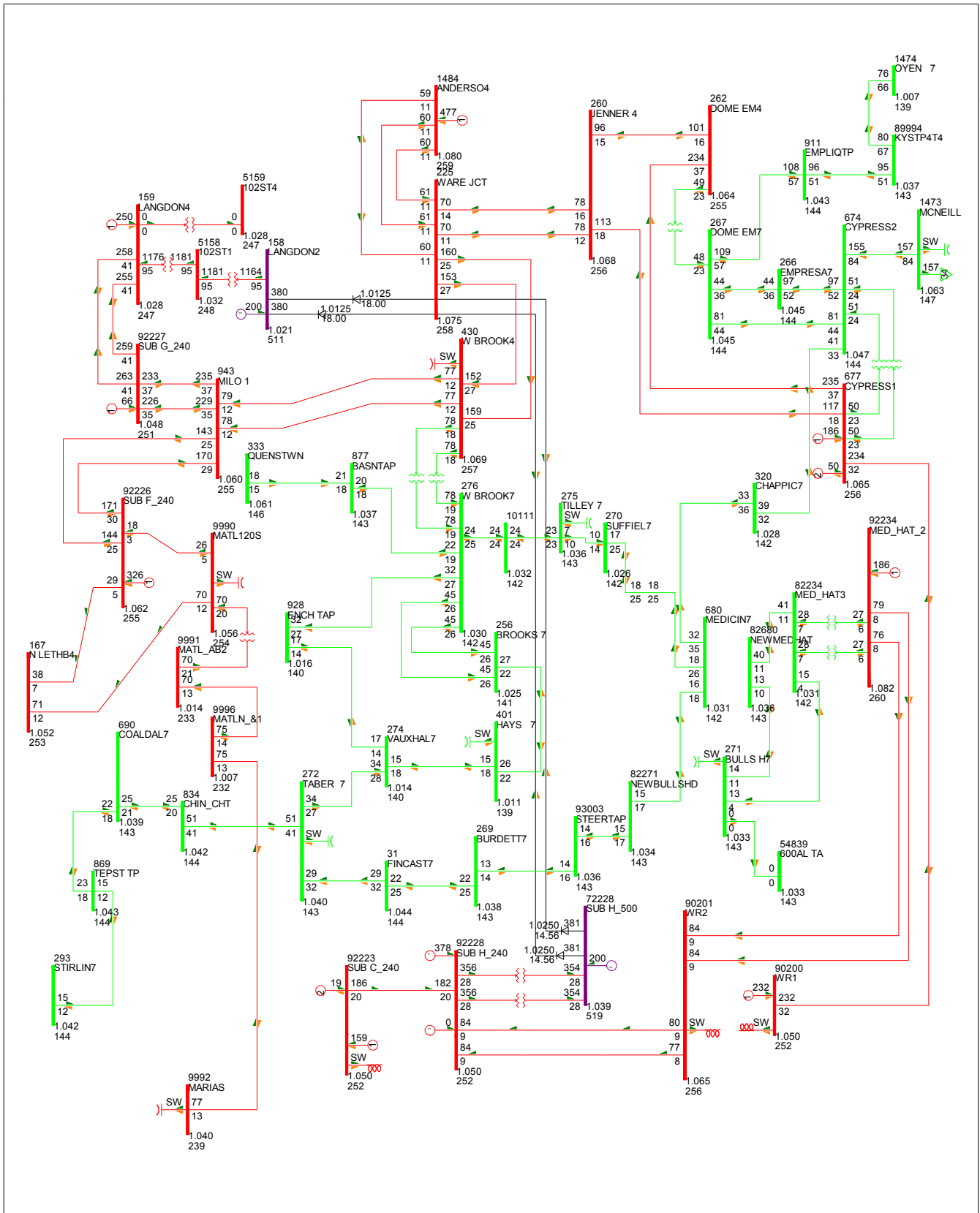


FIG 2017-4-SP-11: LANGDON TO GENESSEE 500 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 10:33

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -245 MW

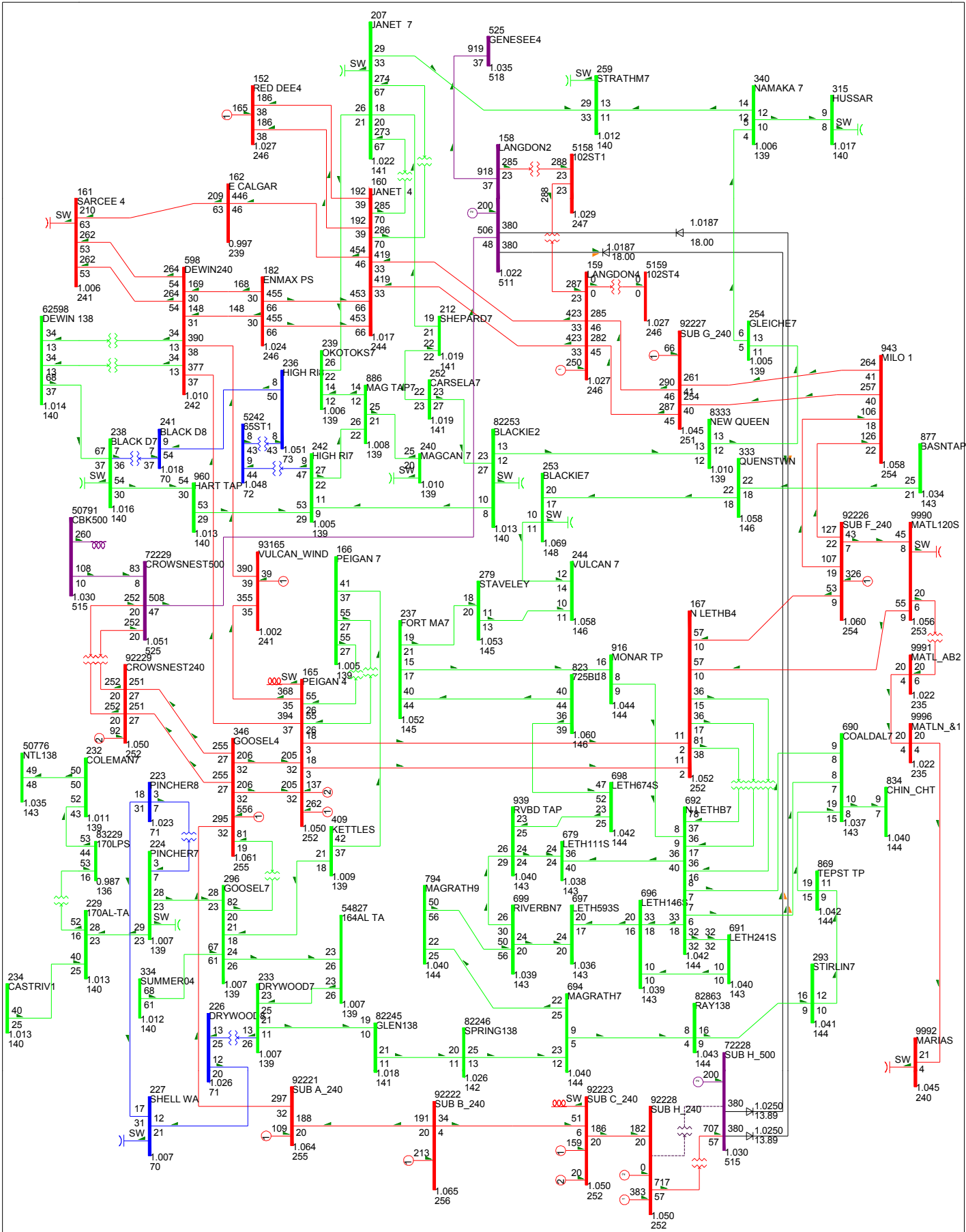


FIG 2017-4-SP-12: SUB H 500/240 KV XMER
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -14 MW

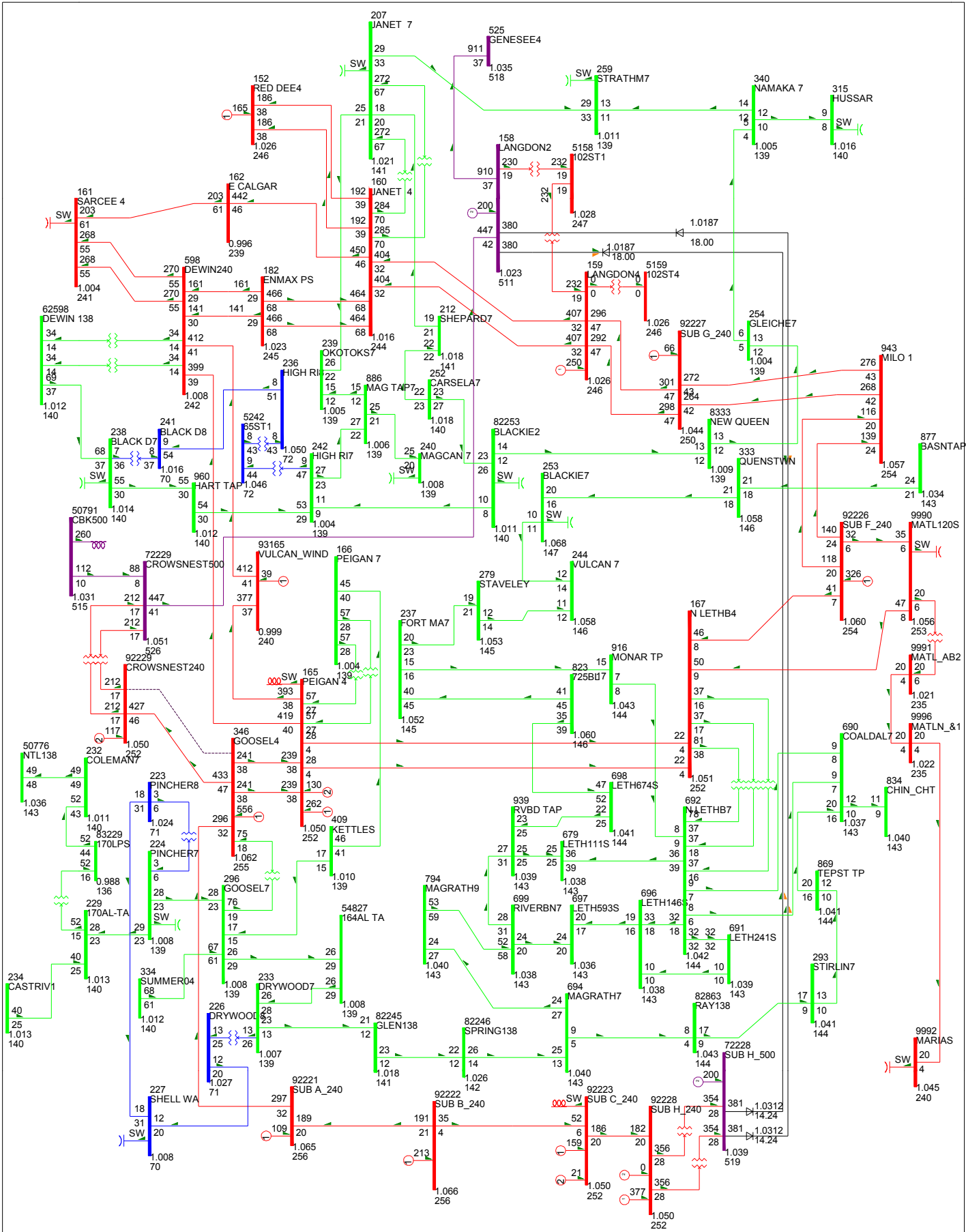


FIG 2017-4-SP-14: CROWNSNEST TO GOOSELAKE 240KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -30 MW

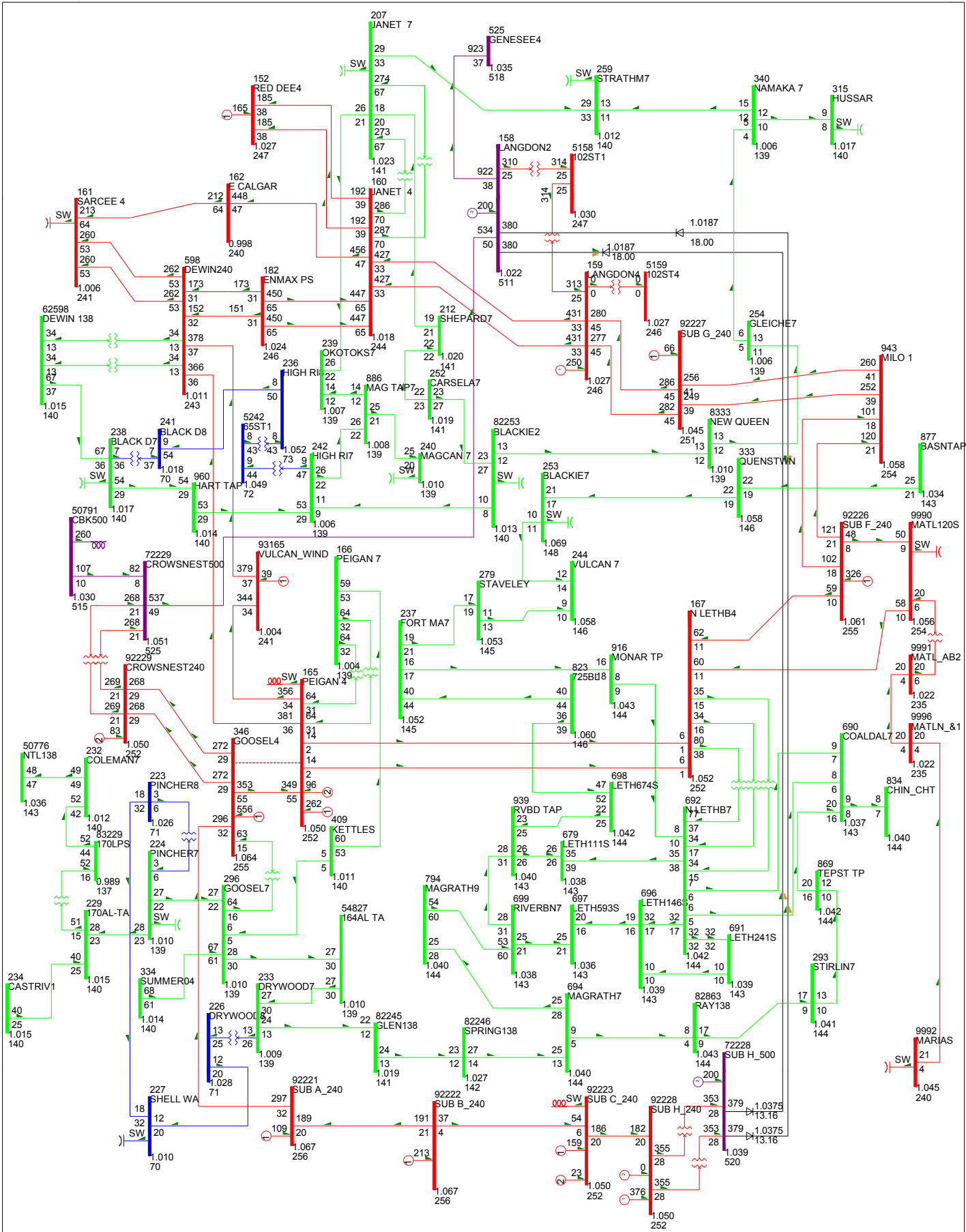


FIG 2017-4-SP-16: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.50 <=69.00 <=138.00 <=240.00 <=500.00 <=600.00 >600.00
 BC Export: -11 MW

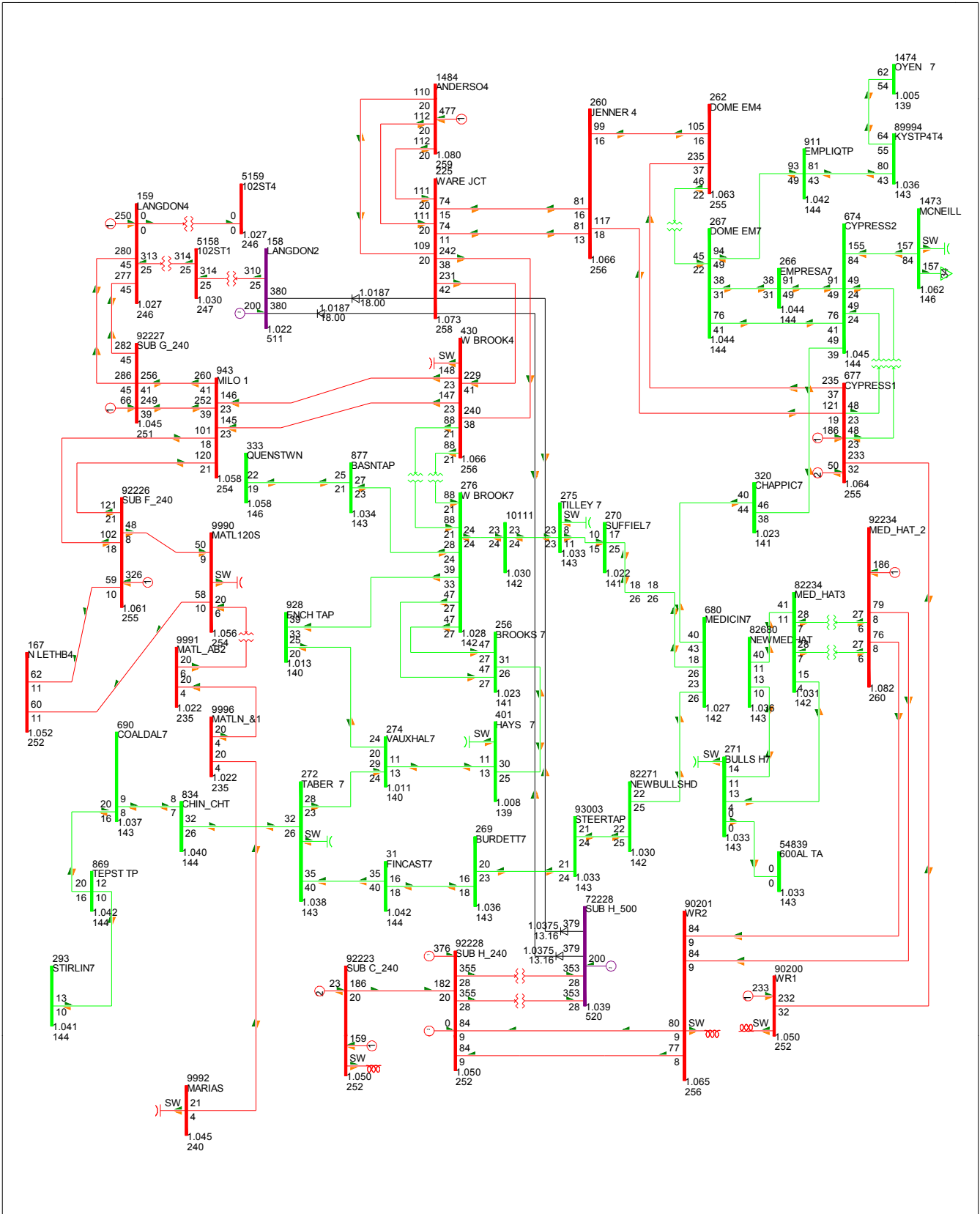


FIG 2017-4-SP-17: PEIGAN TO GOOSELAKE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -11 MW

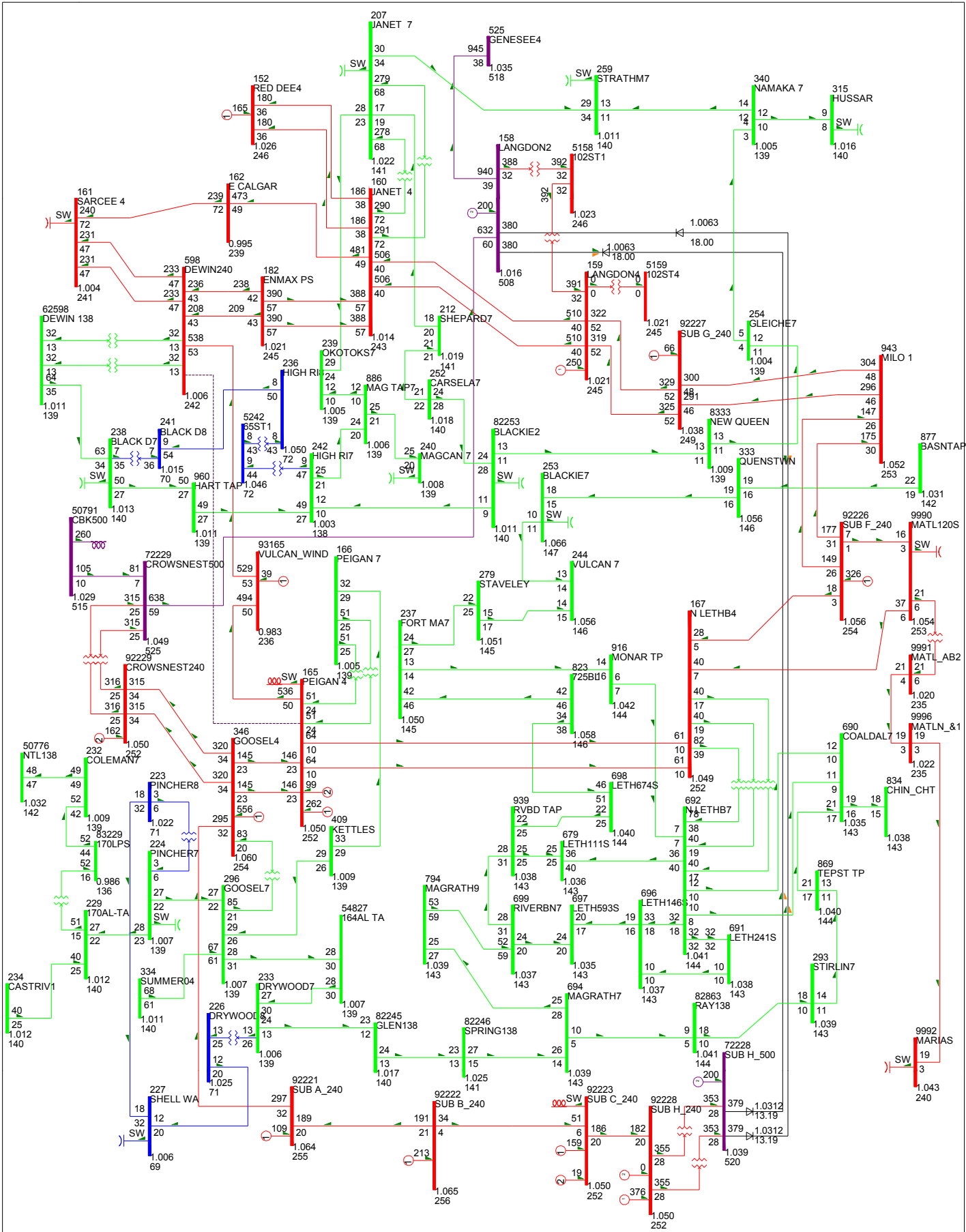


FIG 2017-4-SP-18: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -28 MW

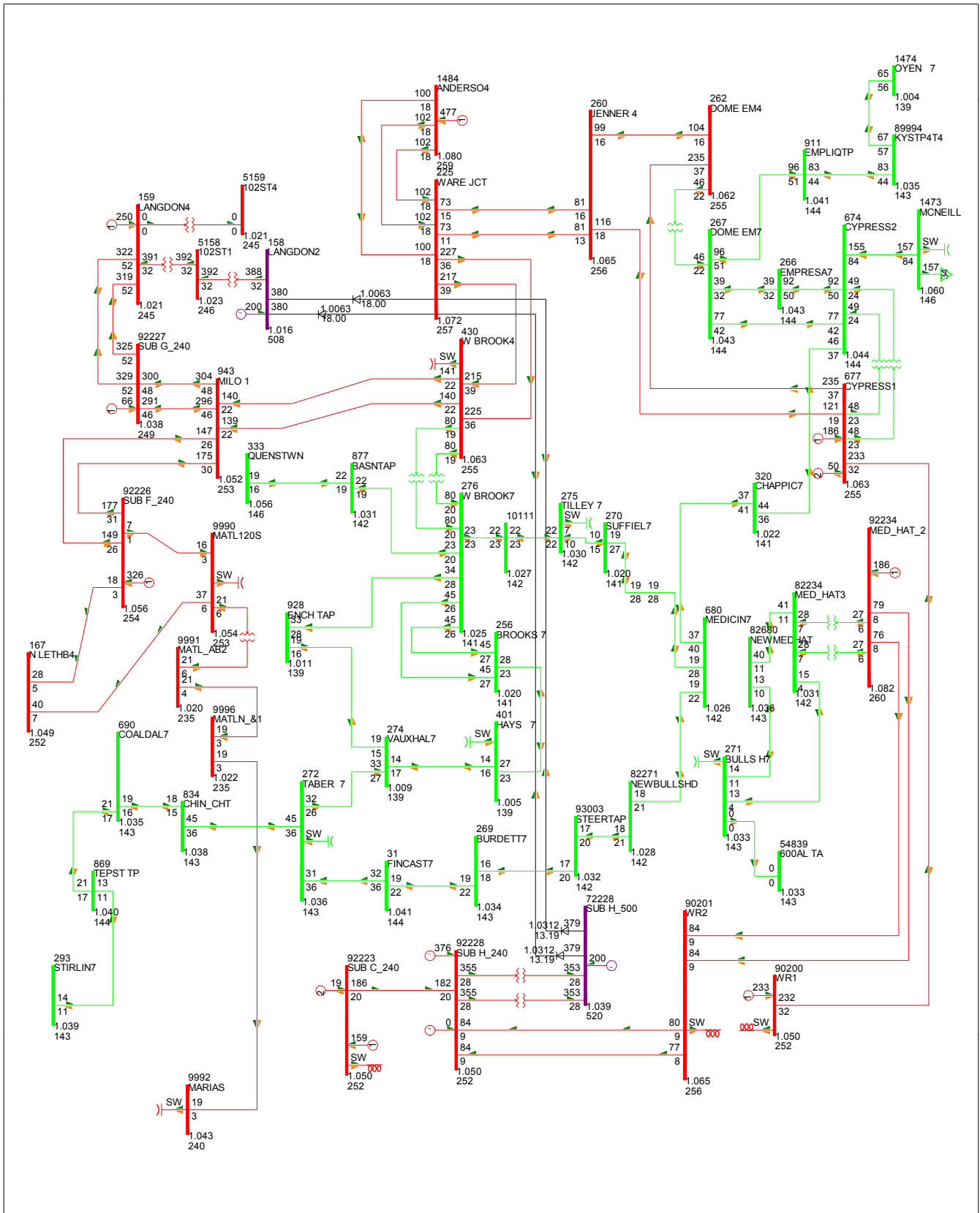


FIG 2017-4-SP-19: PEIGAN TO DEWINTON 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -28 MW

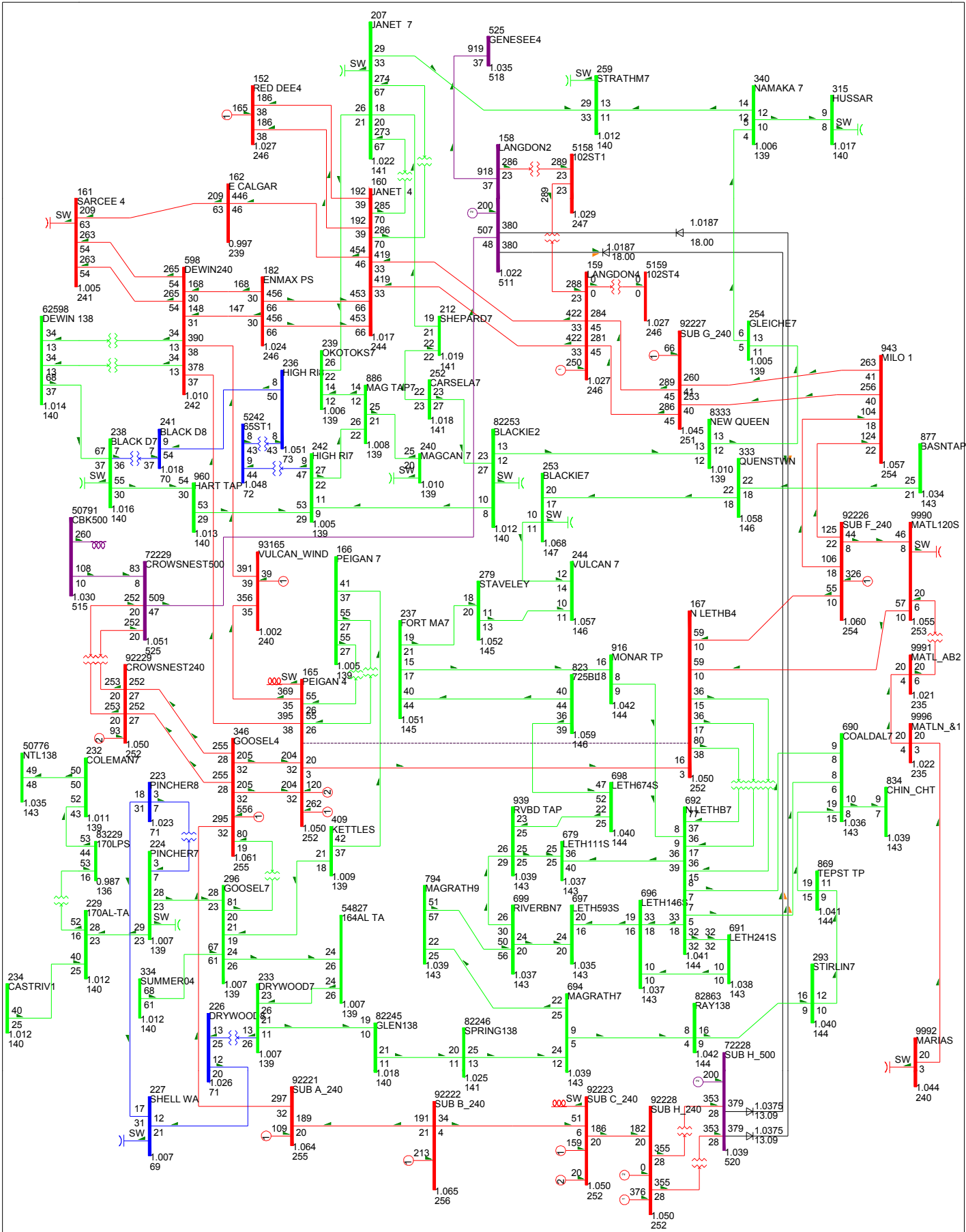


FIG 2017-4-SP-20: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 9:59

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA/% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -13 MW

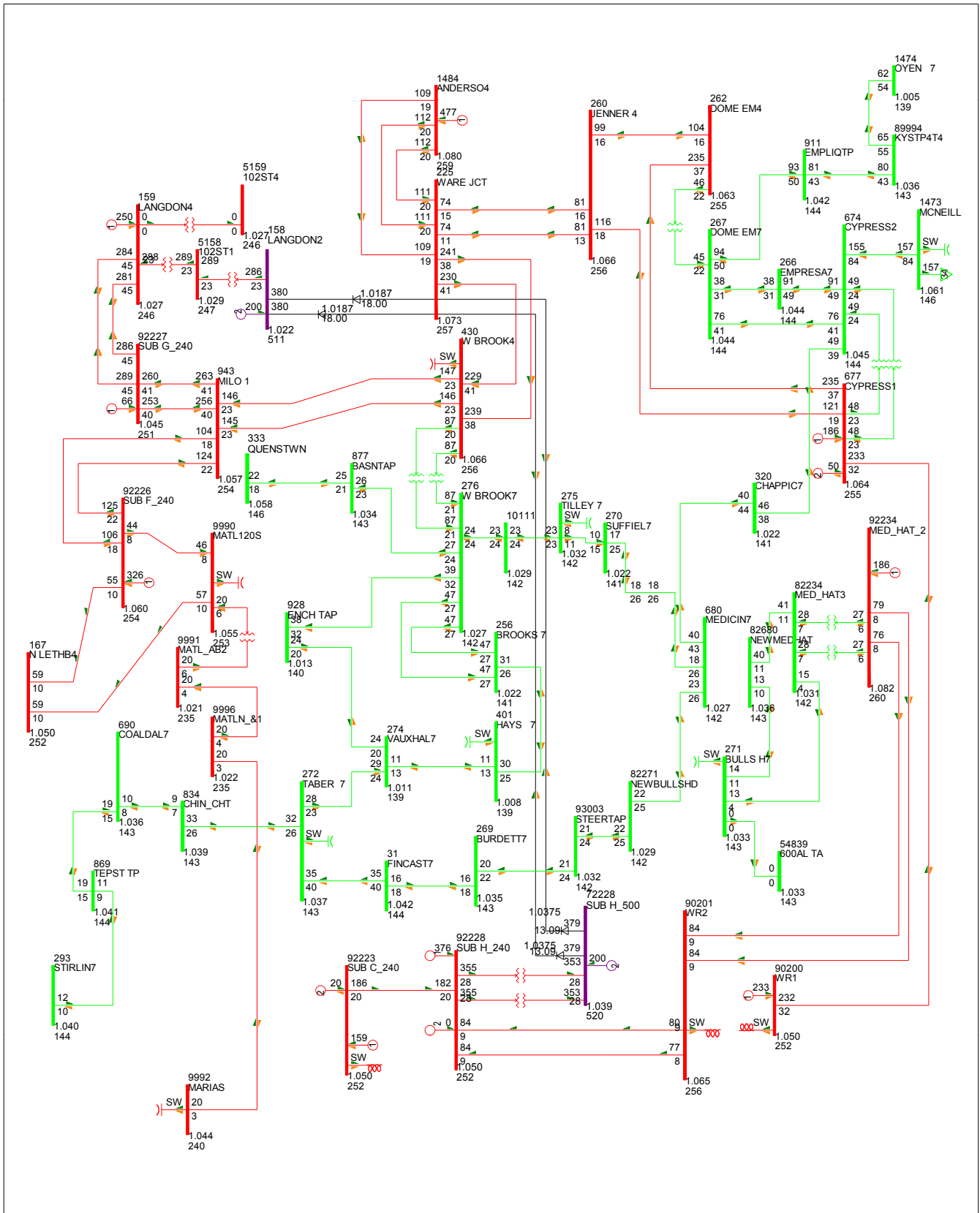


FIG 2017-4-SP-21: PEIGAN TO N. LETHBRIDGE 240 KV
 PROPORTIONAL WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 10:00

ALTERNATIVE 4

Bus - VOLTAGE (KV/PU)
 Branch - MVA% OF RATE A
 Equipment - MVA
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 <=600.000 >600.000
 BC Export: -13 MW

Table D-14: Summary of 2017 Summer Light Contingency Analysis – Alternative 1A West Wind scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-W-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SL-W-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SL-W-4/5	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-W-6/7	240kV 955L Goose Lake 103S to Peigan 59S	None	N/A	None
Fig 2017-1A-SL-W-8/9	240kV Matl 120S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-W-10/11	240kV Line C1 Goose Lake 103S to Sub A	None	N/A	None
Fig 2017-1A-SL-W-12/13	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-1A-SL-W-14/15	240kV Line D MATL 120S to Sub C	None	N/A	None
Fig 2017-1A-SL-W-16/17	240kV 923L Sub F to Matl 120S	None	N/A	None
Fig 2017-1A-SL-W-18/19	240kV Line C1 Sub A to Sub B	None	N/A	None
Fig 2017-1A-SL-W-20/21	240kV Line C1 Sub B to Sub C	None	N/A	None
Fig 2017-1A-SL-W-22/23	500/240kV Transformer at New Crowsnest	None	N/A	None

Table D-15: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1A West Wind scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP-W-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SP-W-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SP-W-4/5	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-W-6/7	240kV 955L Goose Lake 103S to Peigan 59S	None	N/A	None
Fig 2017-1A-SP-W-8/9	240kV Matl 120S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-W-10/11	240kV Line C1 Goose Lake 103S to Sub A	None	N/A	None
Fig 2017-1A-SP-W-12/13	240kV Line A Goose Lake 103S to New Crowsnest	None	N/A	None
Fig 2017-1A-SP-W-14/15	240kV Line D MATL 120S to Sub C	None	N/A	None
Fig 2017-1A-SP-W-16/17	240kV 923L Sub F to Matl 120S	None	N/A	None
Fig 2017-1A-SP-W-18/19	240kV Line C1 Sub A to Sub B	None	N/A	None
Fig 2017-1A-SP-W-20/21	240kV Line C1 Sub B to Sub C	None	N/A	None
Fig 2017-1A-SP-W-22/23	500/240kV Transformer at New Crowsnest	None	N/A	None

Table D-16: Summary of 2017 Summer Light Contingency Analysis – Alternative 1A East Wind scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-E-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SL-E-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SL-E-4/5	240kV Jenner 275S to Cypress	None	N/A	None
Fig 2017-1A-SL-E-6/7	240kV 945L Amoco Empress 163S to Cypress	None	N/A	None
Fig 2017-1A-SL-E-8/9	240kV Line C1 Goose Lake 103S to Sub A	240kV N.Lethbridge 370S to Matl 120S	134.2%	None
		240kV Matl 120S to Sub C	111.2%	
Fig 2017-1A-SL-E-10/11	240kV Line G W. Brooks 28S to Medicine Hat 2	240kV N. Lethbridge 370S to Matl 120S	102.5%	None
Fig 2017-1A-SL-E-12/13	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SL-E-14/15	240kV 923L Sub F to Matl 120S	240kV N. Lethbridge 370S to Matl 120S	110.9%	None
Fig 2017-1A-SL-E-16/17	240kV Line C1 Sub A to Sub B	240kV N.Lethbridge 370S to Matl 120S	134.4%	None
		240kV Matl 120S to Sub C	111.5%	
Fig 2017-1A-SL-E-18/19	240kV Line C1 Sub B to Sub C	240kV N.Lethbridge 370S to Matl 120S	134.6%	None
		240kV Matl 120S to Sub C	111.8%	
Fig 2017-1A-SL-E-20/21	138kV Ameco Empress 163S to Cypress	None	N/A	None
Fig 2017-1A-SL-E-22/23	240/138kV Transformer at Goose Lake 103S	None	N/A	None

Table D-17: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1A East Wind scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP-E-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SP-E-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SP-E-4/5	240kV Jenner 275S to Cypress	240kV 945L Amoco Empress 163S to Cypress 138kV 760L Oyen 767S to Empress Liquids 164S	100.6% 120.1%	None
Fig 2017-1A-SP-E-6/7	240kV 945L Amoco Empress 163S to Cypress	138kV 760L Amoco Empress 163S to Empress 394S 138kV 760L Empress 394S to Cypress	127.9% 117.8%	None
Fig 2017-1A-SP-E-8/9	240kV Line C1 Goose Lake 103S to Sub A	240kV N.Lethbridge 370S to Matl 120S 240kV Matl 120S to Sub C	127.1% 109.5%	None
Fig 2017-1A-SP-E-10/11	240kV Line G W. Brooks 28S to Medicine Hat 2	None	N/A	None
Fig 2017-1A-SP-E-12/13	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SP-E-14/15	240kV 923L Sub F to Matl 120S	240kV N. Lethbridge 370S to Matl 120S	113.6%	None
Fig 2017-1A-SP-E-16/17	240kV Line C1 Sub A to Sub B	240kV N.Lethbridge 370S to Matl 120S 240kV Matl 120S to Sub C	126.8% 109.6%	None
Fig 2017-1A-SP-E-18/19	240kV Line C1 Sub B to Sub C	240kV N.Lethbridge 370S to Matl 120S 240kV Matl 120S to Sub C	127.0% 109.9%	None
Fig 2017-1A-SP-E-20/21	138kV Ameco Empress 163S to Cypress	138kV 760L Amoco Empress 163S to Empress 394S 138kV 760L Empress 394S to Cypress	105.0% 101%	None
Fig 2017-1A-SP-E-22/23	240/138kV Transformer at Goose Lake 103S	None	N/A	None

Table D-18: Summary of 2017 Summer Light Contingency Analysis – Alternative 1A Matl Scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-M-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SL-M-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SL-M-4/5	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-M-6/7	240kV Matl 120S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SL-M-8/9	240kV 931L Ware Junction 132S to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SL-M-10/11	240kV Jenner 275S to Cypress	None	N/A	None
Fig 2017-1A-SL-M-12/13	240kV Line C1 Goose Lake 103S to Sub A	240kV N. Lethbridge 370S to Matl 120S	111.3%	None
Fig 2017-1A-SL-M-14/15	240kV Line G W. Brooks 28S to Medicine Hat 2	None	N/A	None
Fig 2017-1A-SL-M-16/17	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SL-M-18/19	240kV Line H Ware Junction 132S to Langdon 102S	None	N/A	None
Fig 2017-1A-SL-M-20/21	240kV Line J Dewinton to Peigan 59S	None	N/A	None

Table D-19: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1A Matl Scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP-M-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SP-M-2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SP-M-4/5	240kV 967L Peigan 59S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-M-6/7	240kV Matl 120S to N. Lethbridge 370S	None	N/A	None
Fig 2017-1A-SP-M-8/9	240kV 931L Ware Junction 132S to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SP-M-10/11	240kV Jenner 275S to Cypress	None	N/A	None
Fig 2017-1A-SP-M-12/13	240kV Line C1 Goose Lake 103S to Sub A	240kV N. Lethbridge 370S to Matl 120S	103.8%	None
Fig 2017-1A-SP-M-14/15	240kV Line G W. Brooks 28S to Medicine Hat 2	None	N/A	None
Fig 2017-1A-SP-M-16/17	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SP-M-18/19	240kV Line H Ware Junction 132S to Langdon 102S	None	N/A	None
Fig 2017-1A-SP-M-20/21	240kV Line J Dewinton to Peigan 59S	None	N/A	None

Table D-20: Summary of 2017 Summer Light Contingency Analysis – Alternative 1A Bow City Scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SL-BOW-1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SL- BOW -2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SL- BOW -4/5	240kV 927L Milo Junction to Sub G	None	N/A	None
Fig 2017-1A-SL- BOW -6/7	240kV Line G W. Brooks 28S to Medicine Hat 2	None	N/A	None
Fig 2017-1A-SL- BOW -8/9	240kV Line H Ware Junction 132S to Langdon 102S	None	N/A	None
Fig 2017-1A-SL- BOW -10/11	240kV 923L W. Brooks 28S to Milo Junction	None	N/A	None
Fig 2017-1A-SL- BOW -12/13	240kV 931L Ware Junction 132S to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SL- BOW -14/15	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SL- BOW -16/17	240kV Jenner 275S to Cypress	None	N/A	None
Fig 2017-1A-SL- BOW -18/19	240kV Line C1 Goose Lake 103S to Sub A	None	N/A	None
Fig 2017-1A-SL- BOW -20/21	240kV Line J Dewinton to Peigan 59S	None	N/A	None

Table D-21: Summary of 2017 Summer Peak Contingency Analysis – Alternative 1A Bow City Scenario

Figure No.	Contingency	Overloaded Element	Percent Overload	Other System Performance Concerns
Fig 2017-1A-SP- BOW -1	Generation Dispatch	None	N/A	None
Fig 2017-1A-SP- BOW -2/3	All Elements in Service	None	N/A	None
Fig 2017-1A-SP- BOW -4/5	240kV 927L Milo Junction to Sub G	None	N/A	None
Fig 2017-1A-SP- BOW -6/7	240kV Line G W. Brooks 28S to Medicine Hat 2	None	N/A	None
Fig 2017-1A-SP- BOW -8/9	240kV Line H Ware Junction 132S to Langdon 102S	None	N/A	None
Fig 2017-1A-SP- BOW -10/11	240kV 923L W. Brooks 28S to Milo Junction	None	N/A	None
Fig 2017-1A-SP- BOW -12/13	240kV 931L Ware Junction 132S to W. Brooks 28S	None	N/A	None
Fig 2017-1A-SP- BOW -14/15	240kV Line D Sub C to Matl 120S	None	N/A	None
Fig 2017-1A-SP- BOW -16/17	240kV Jenner 275S to Cypress	None	N/A	None
Fig 2017-1A-SP- BOW -18/19	240kV Line C1 Goose Lake 103S to Sub A	None	N/A	None
Fig 2017-1A-SP- BOW -20/21	240kV Line J Dewinton to Peigan 59S	None	N/A	None

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3611.8 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

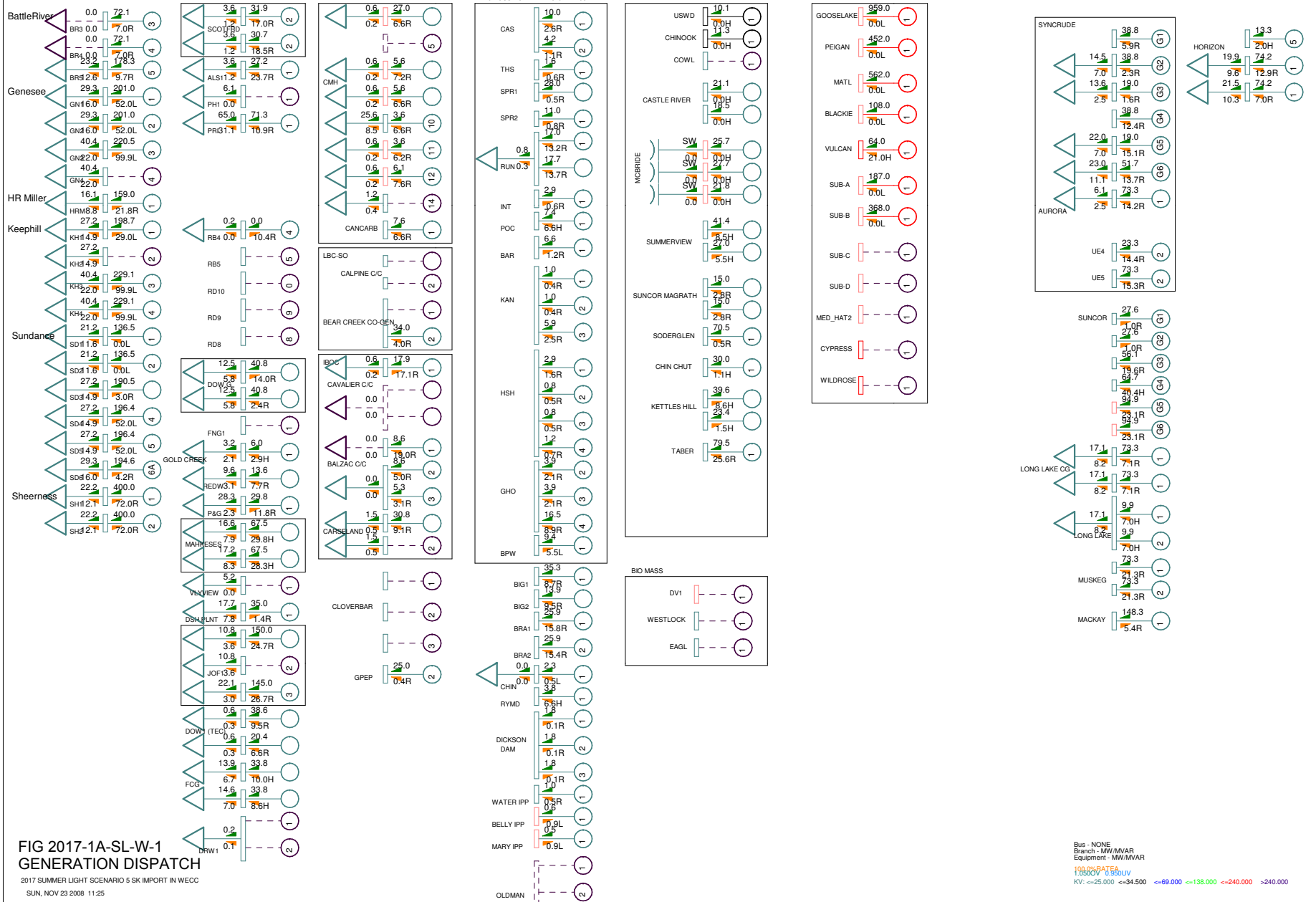


FIG 2017-1A-SL-W-1
GENERATION DISPATCH

2017 SUMMER LIGHT SCENARIO 5 SK IMPORT IN WCC
SUN, NOV 23 2008 11:25

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
TOLDPATEA
13550V 0.950kV
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

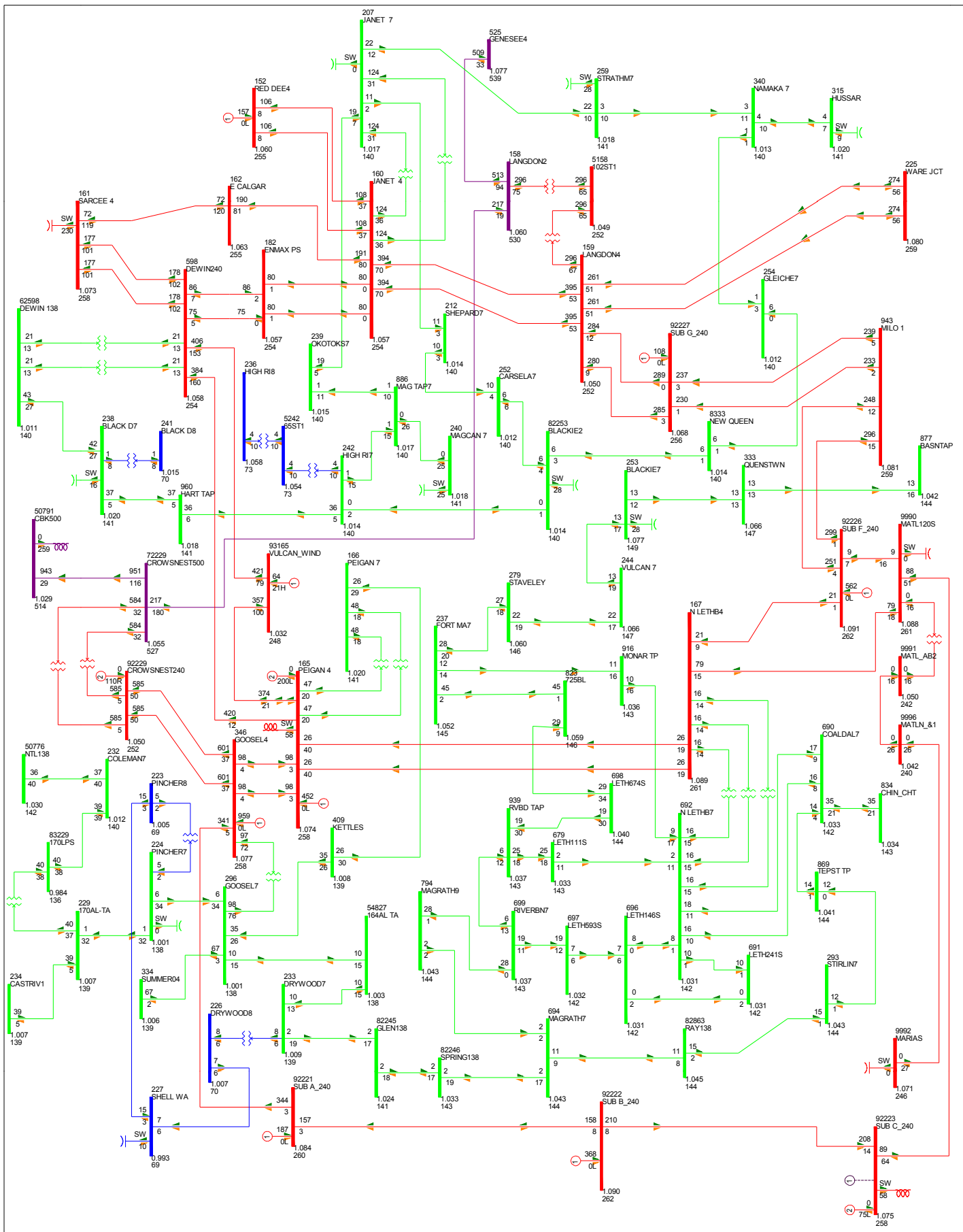


FIG 2017-1A-SL-W-2: N-0 CONDITION

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 1004 MW

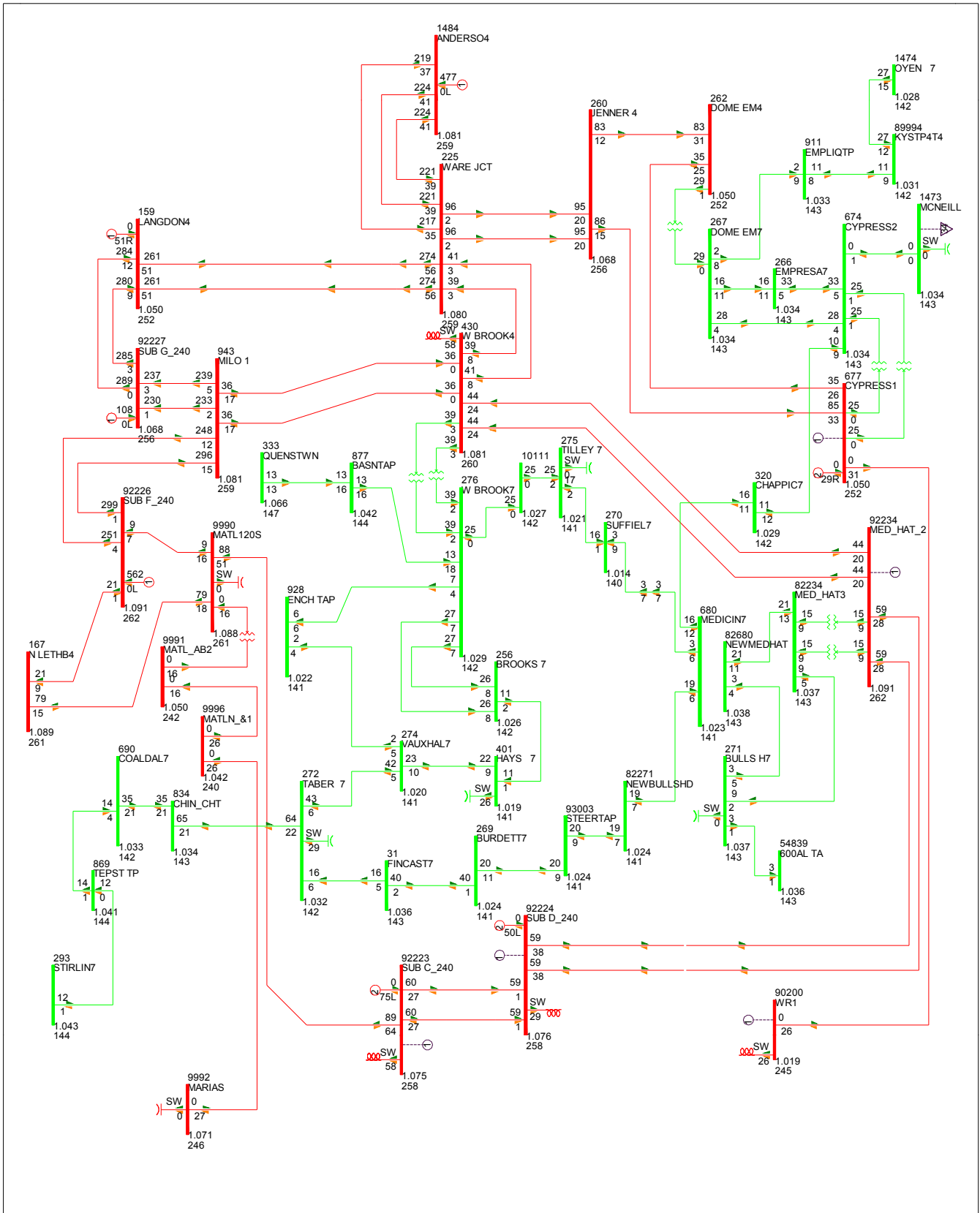


FIG 2017-1A-SL-W-3: N-0 CONDITION
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1004 MW

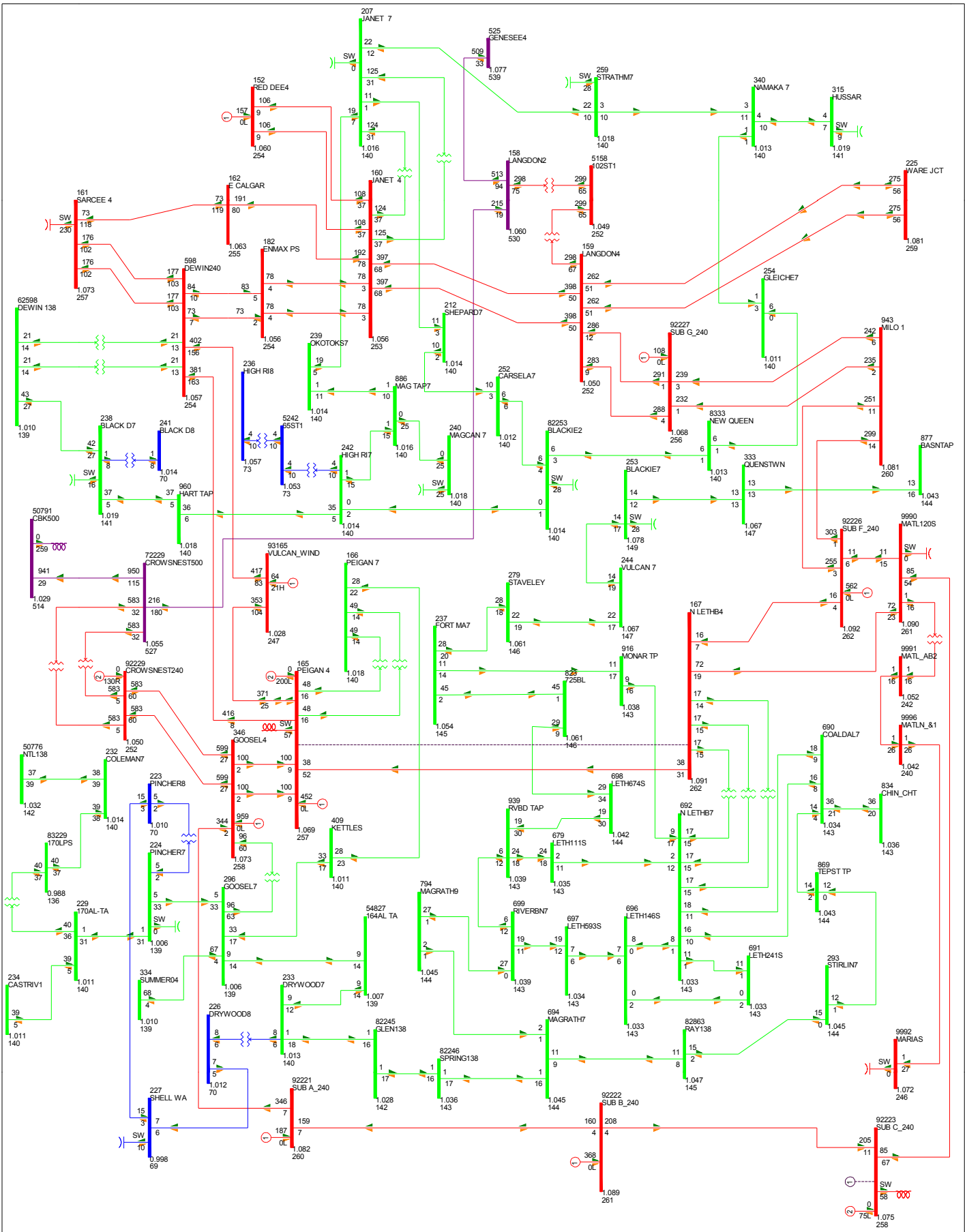


FIG 2017-1A-SL-W-4: PEIGAN TO N. LETHBRIDGE 240 KV
 WEST WIND SCENARIO
 2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

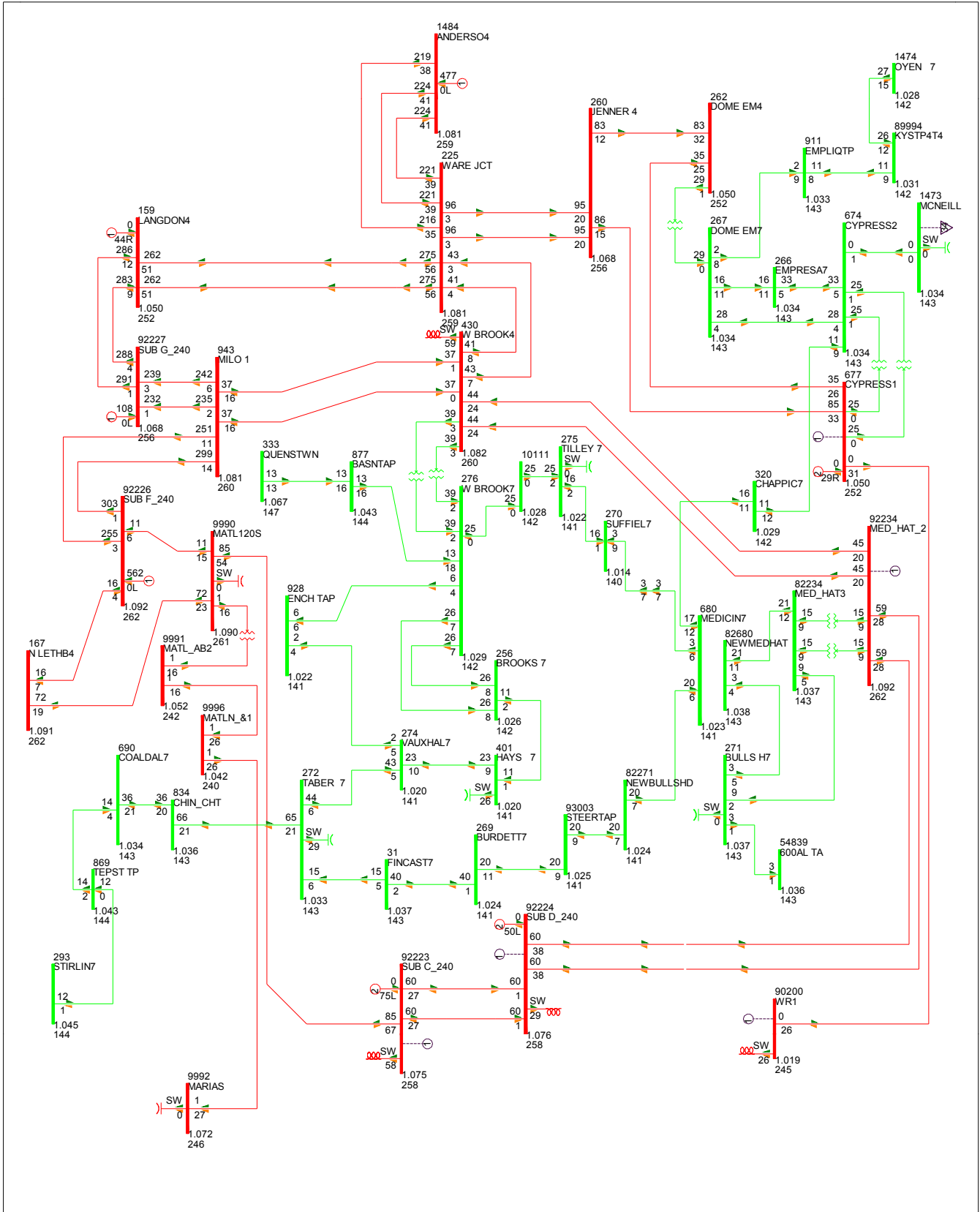


FIG 2017-1A-SL-W-5: PEIGAN TO N. LETHBRIDGE 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

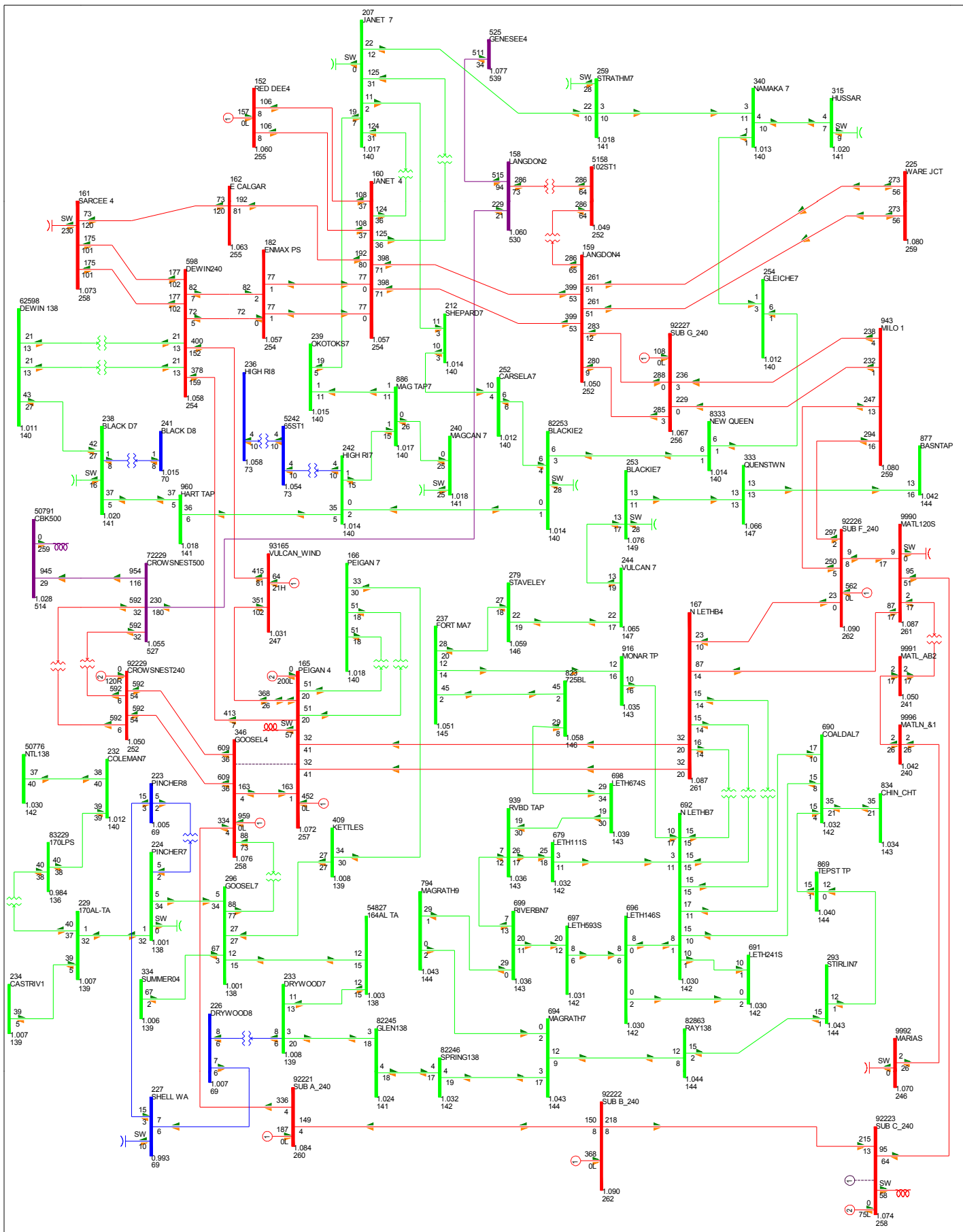


FIG 2017-1A-SL-W-6: PEIGAN TO GOOSELAKE 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 1006 MW

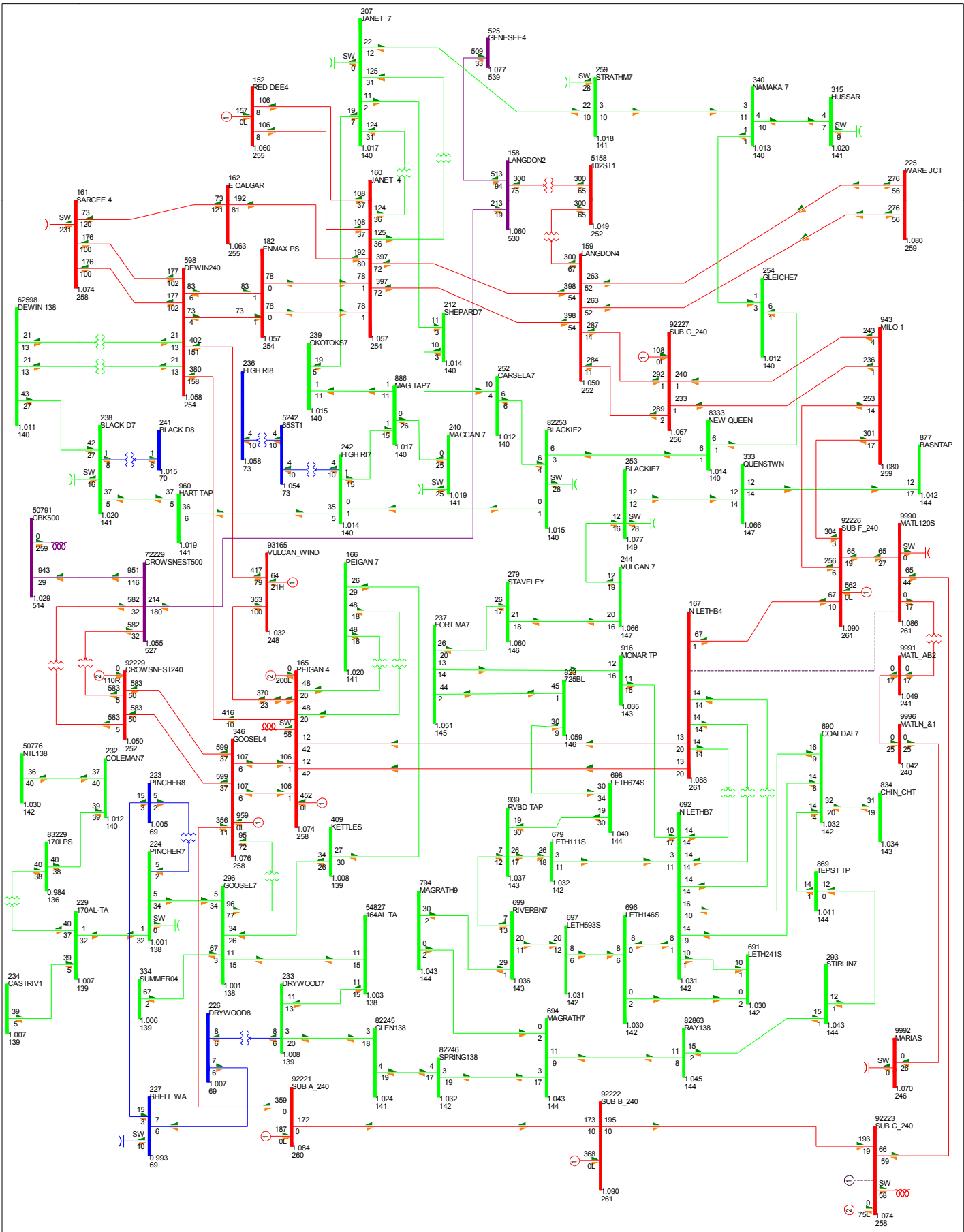


FIG 2017-1A-SL-W-8: N. LETHBRIDGE TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 >500.000

BC Export: 1004 MW

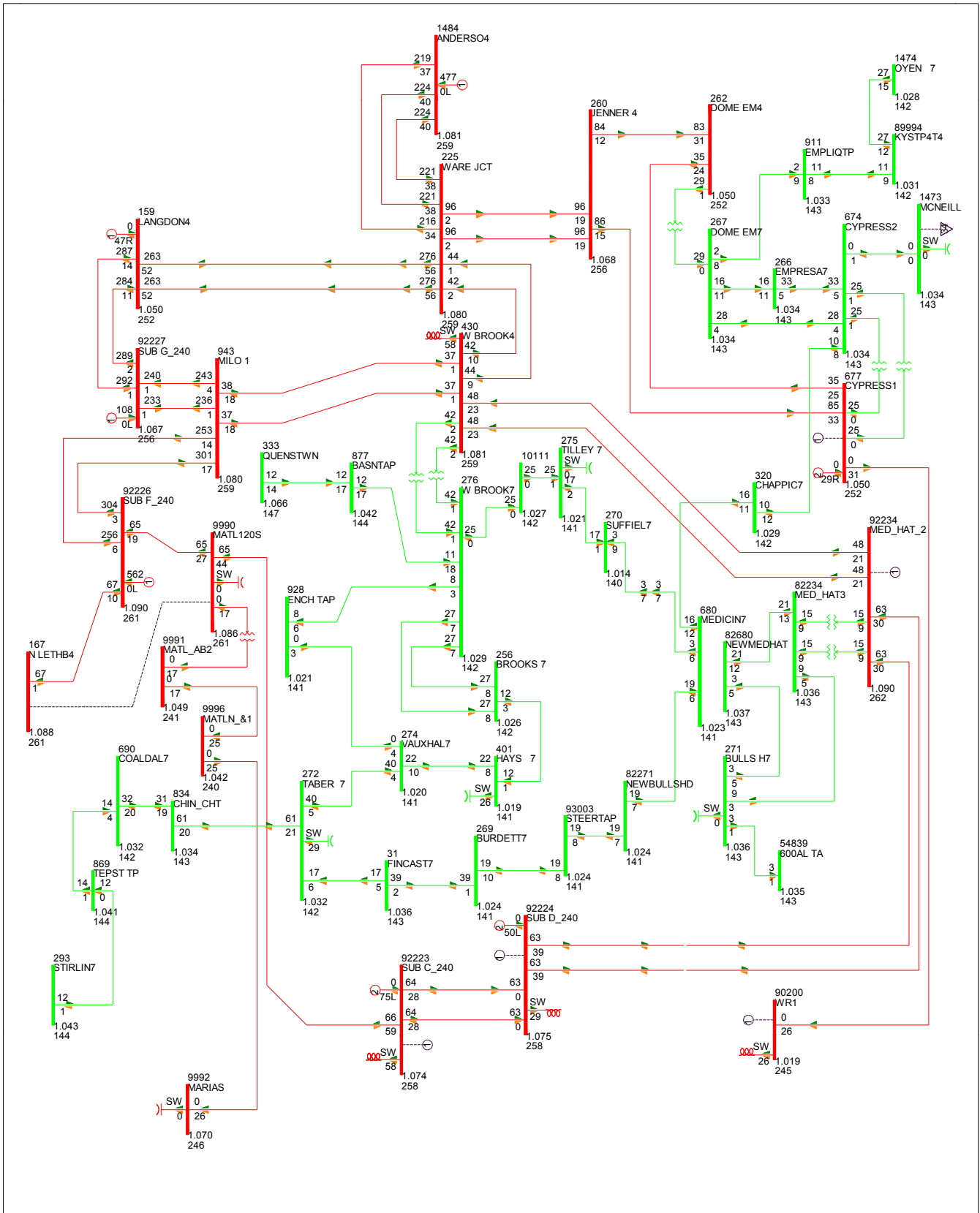


FIG 2017-1A-SL-W-9: N. LETHBRIDGE TO MATL 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1004 MW

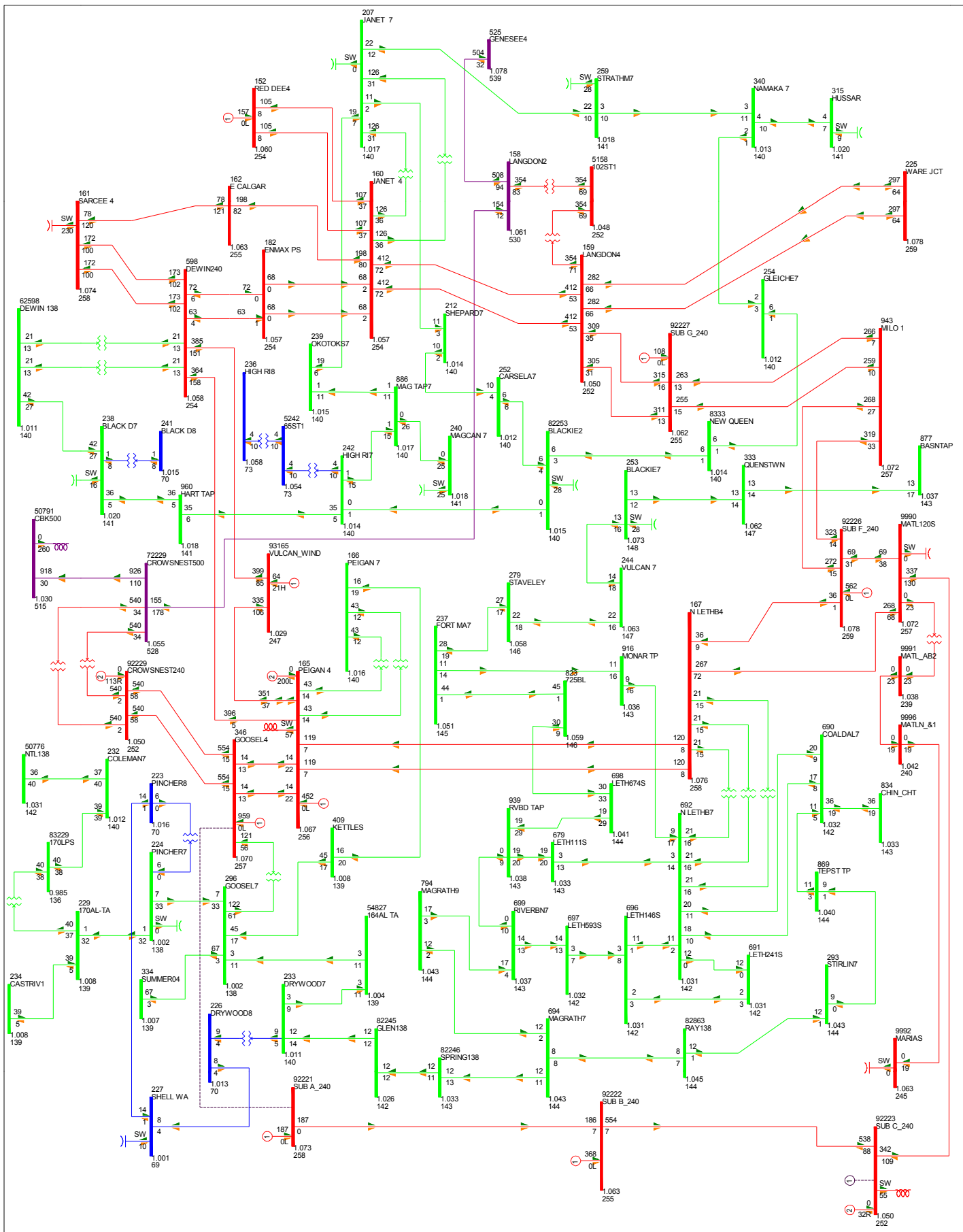


FIG 2017-1A-SL-W-10: GOOSELAKE TO SUB A 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 980 MW

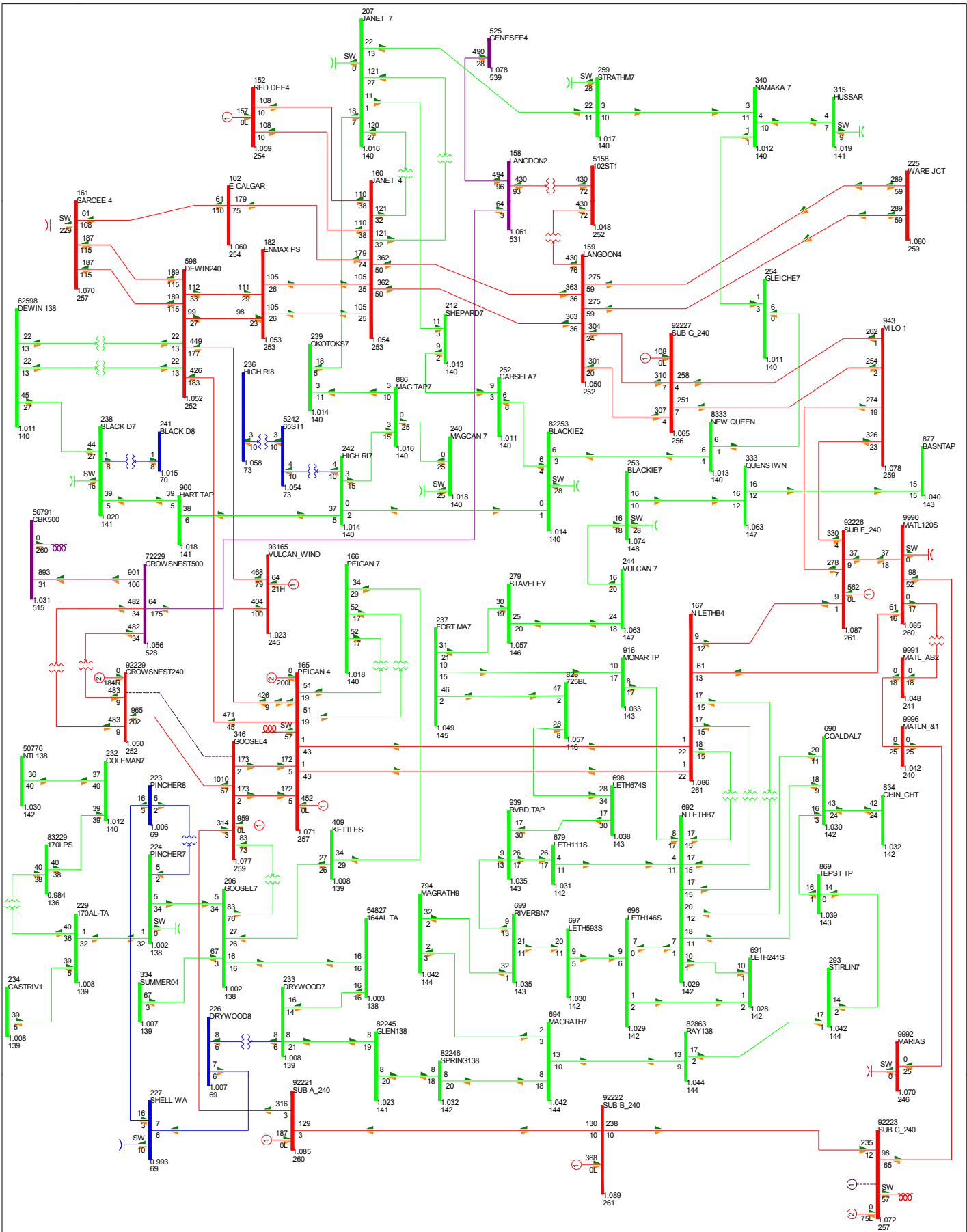


FIG 2017-1A-SL-W-12: GOOSELAKE TO CROWNSNEST 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 960 MW

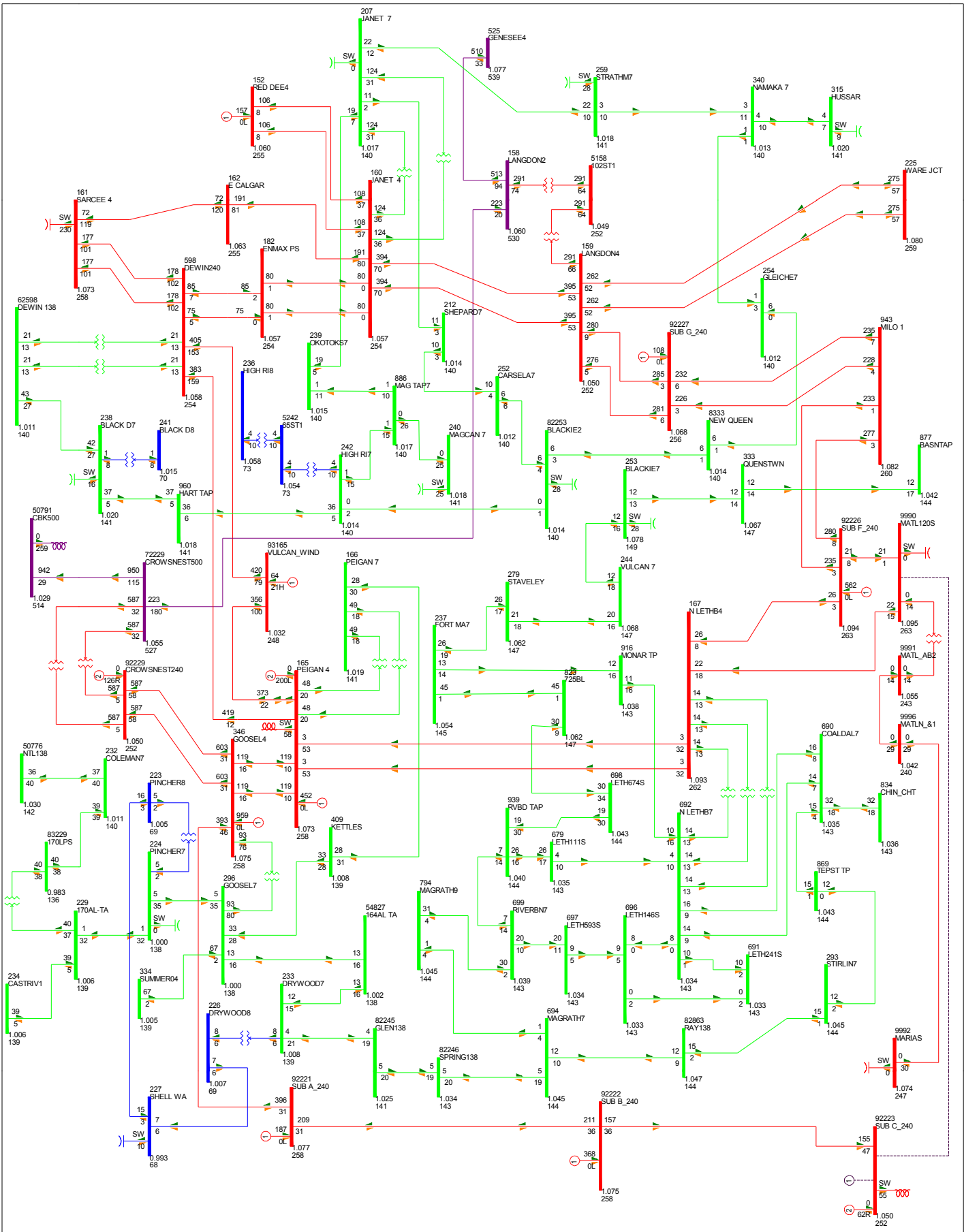


FIG 2017-1A-SL-W-14: SUB C TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:31

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

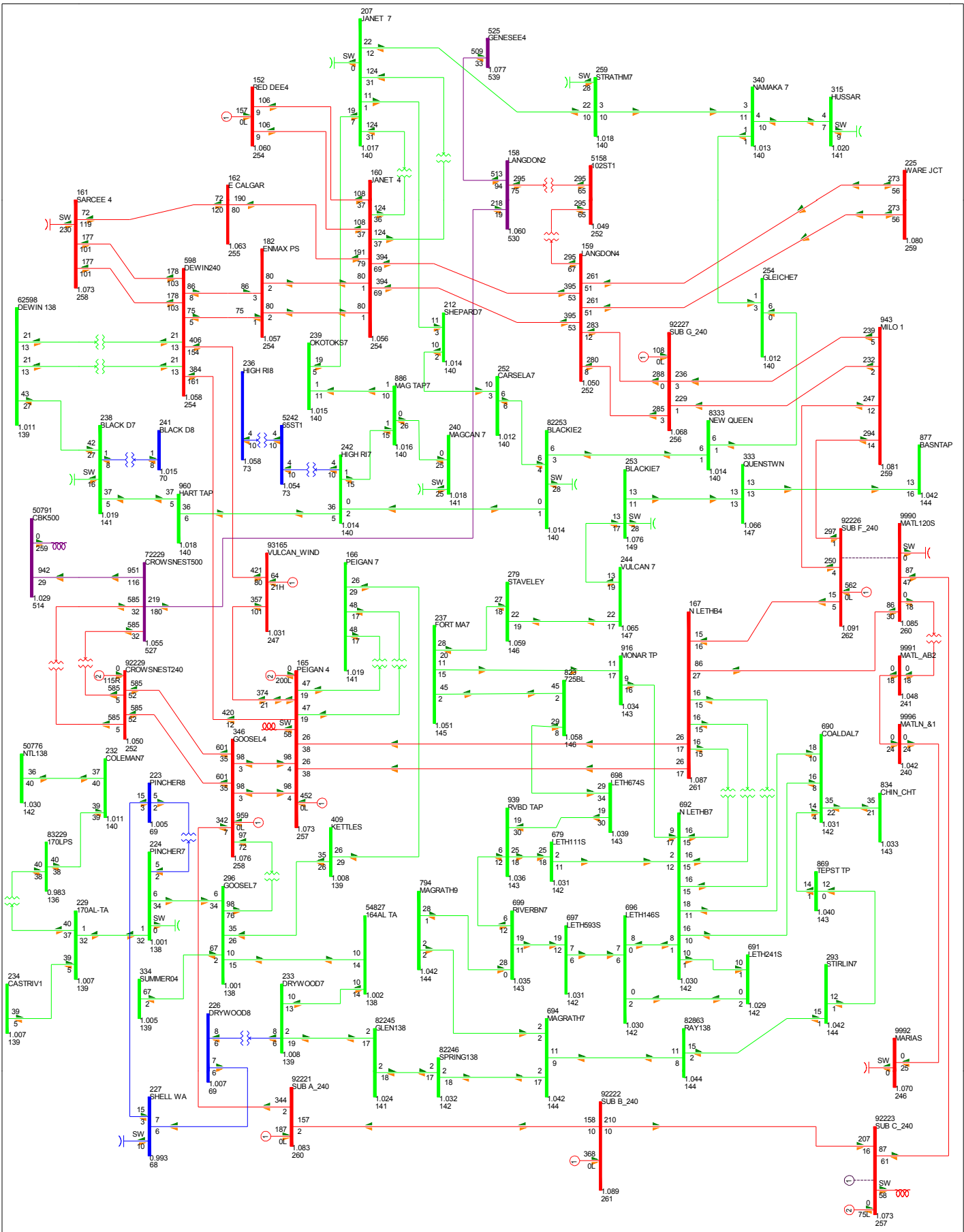


FIG 2017-1A-SL-W-16: SUB F TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1003 MW

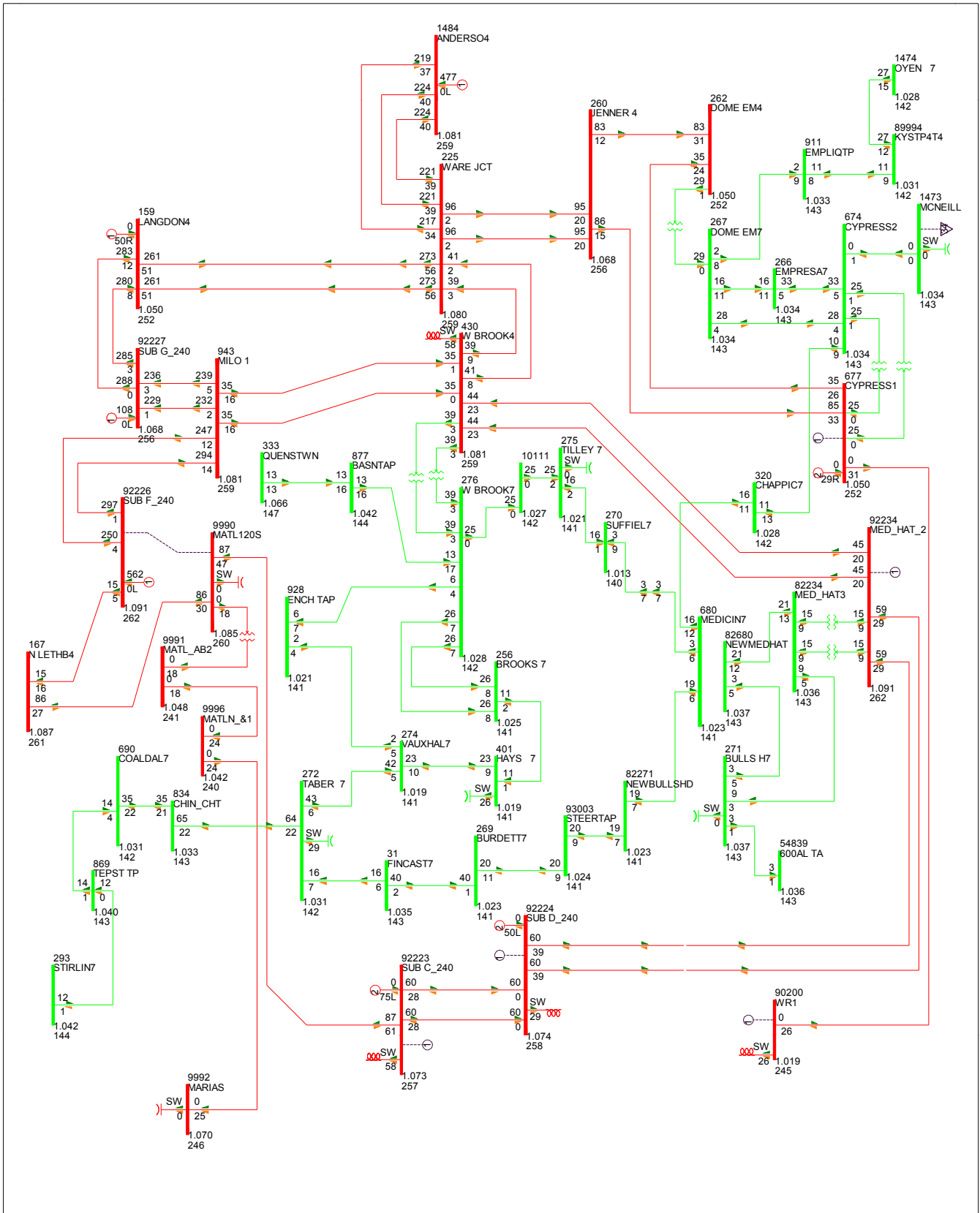


FIG 2017-1A-SL-W-17: SUB F TO MATL 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1003 MW

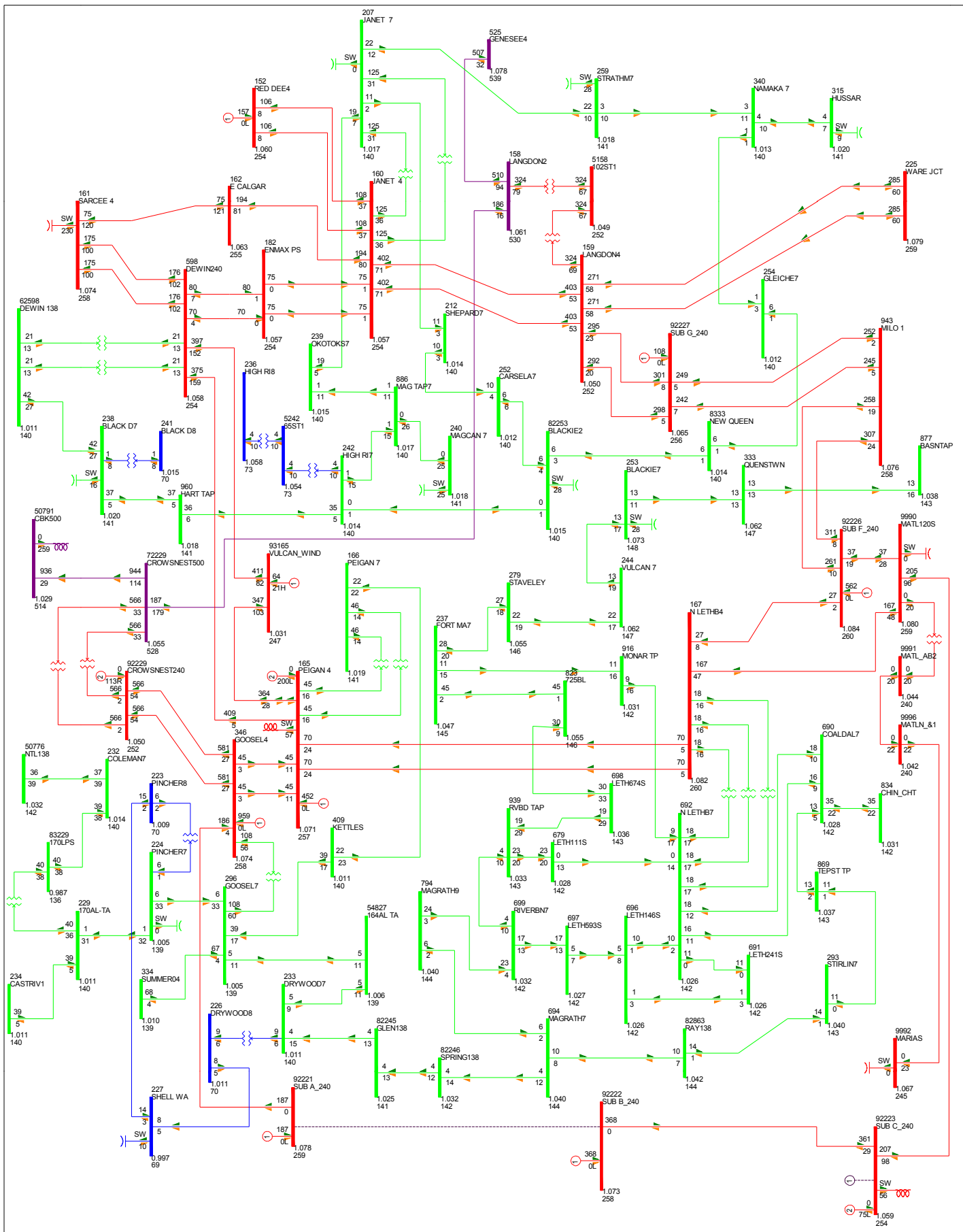


FIG 2017-1A-SL-W-18: SUB A TO SUB B 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 998 MW

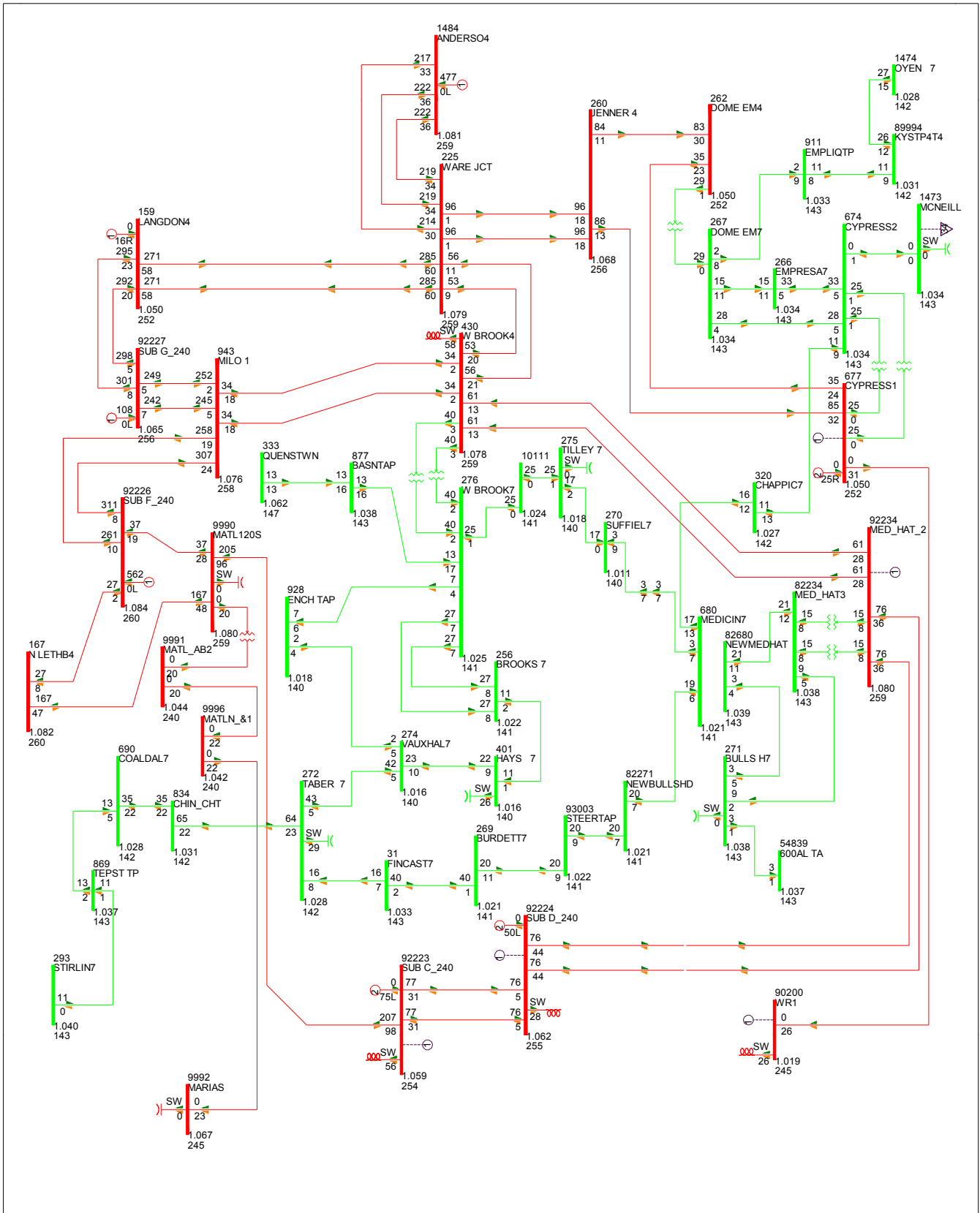


FIG 2017-1A-SL-W-19: SUB A TO SUB B 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 998 MW

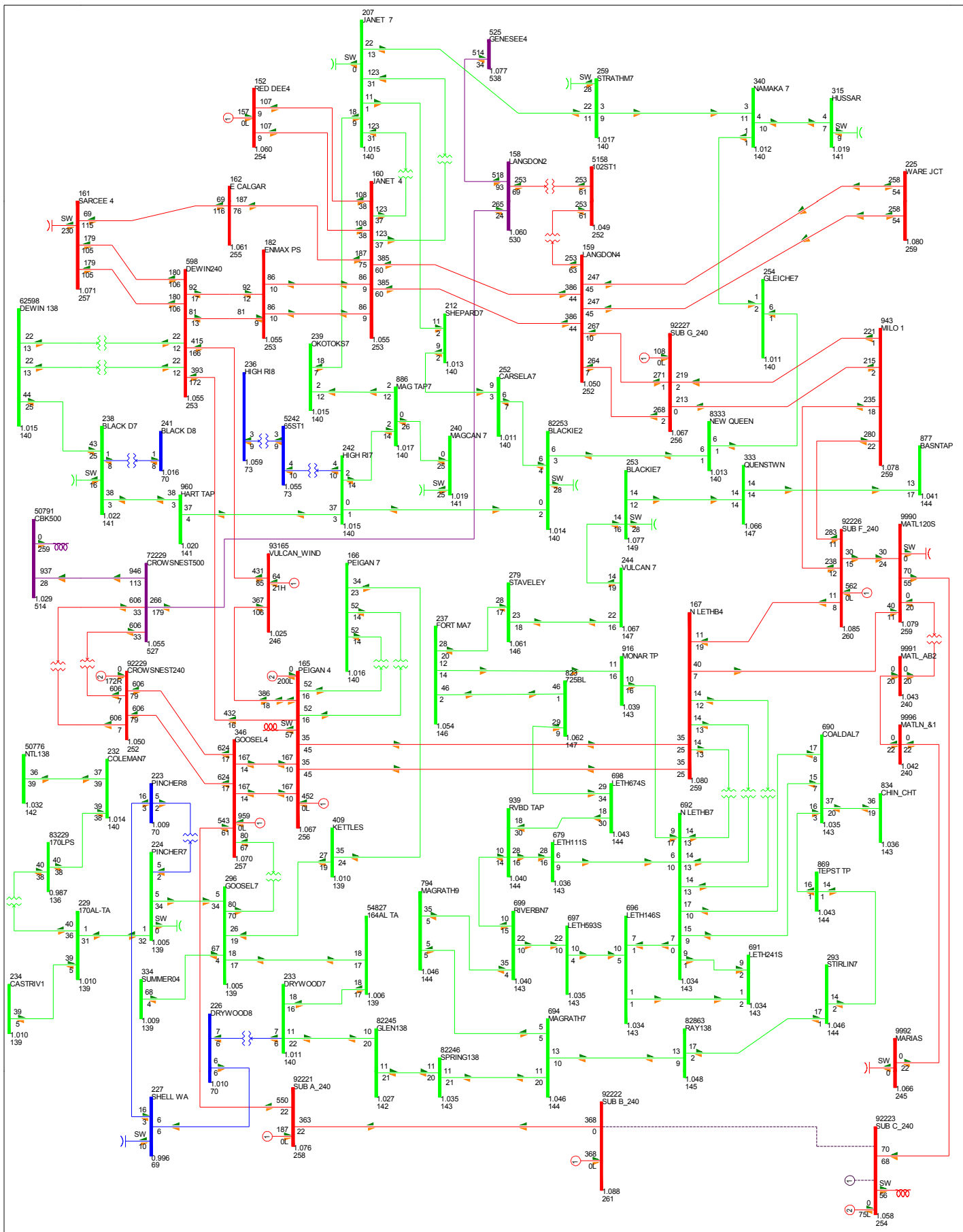


FIG 2017-1A-SL-W-20: SUB B TO SUB C 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 996 MW

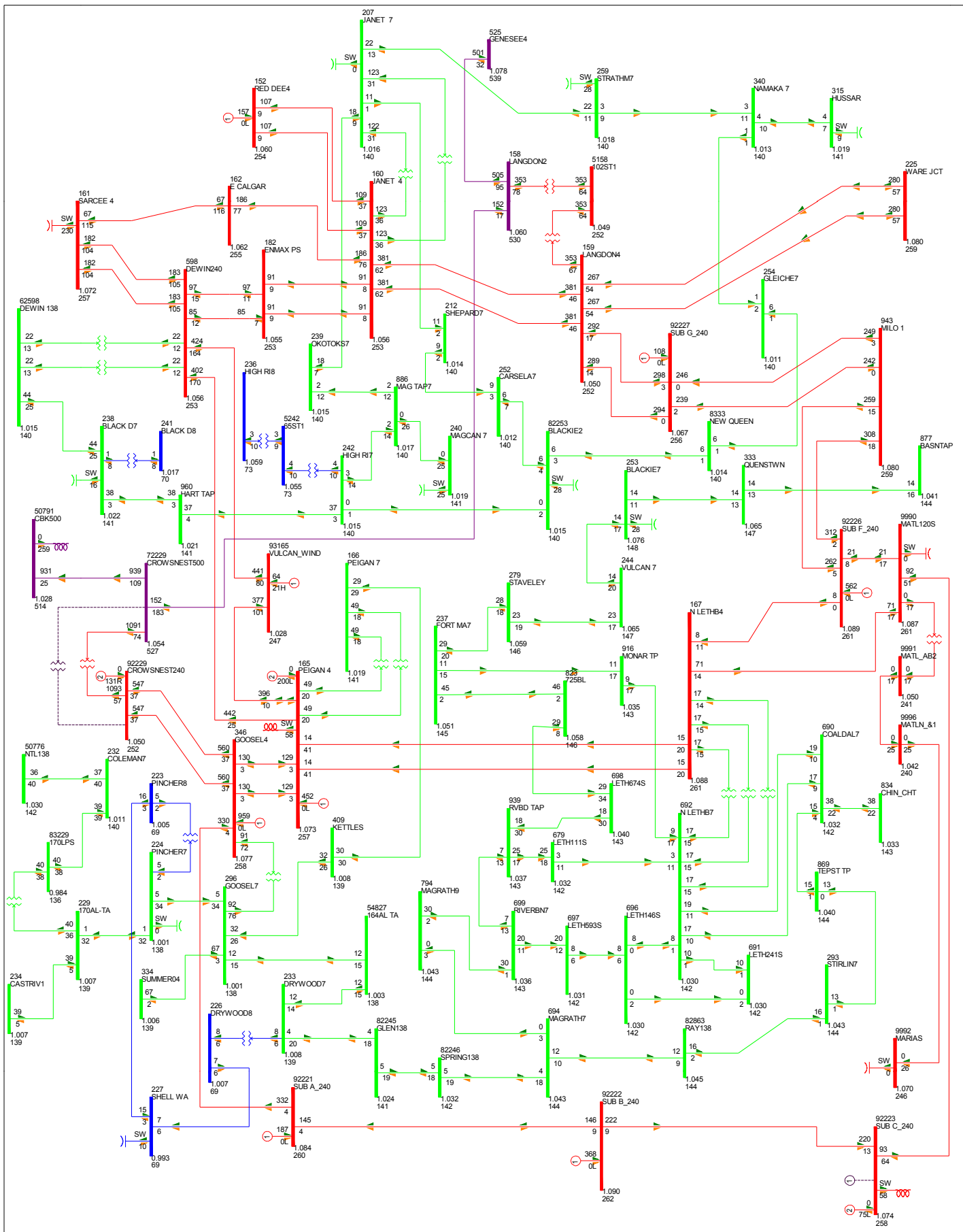


FIG 2017-1A-SL-W-22: CROWSNEST 500/240 KV XMR

WEST WIND SCENARIO

2017 South West System TUE, DEC 02 2008 19:20

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 994 MW

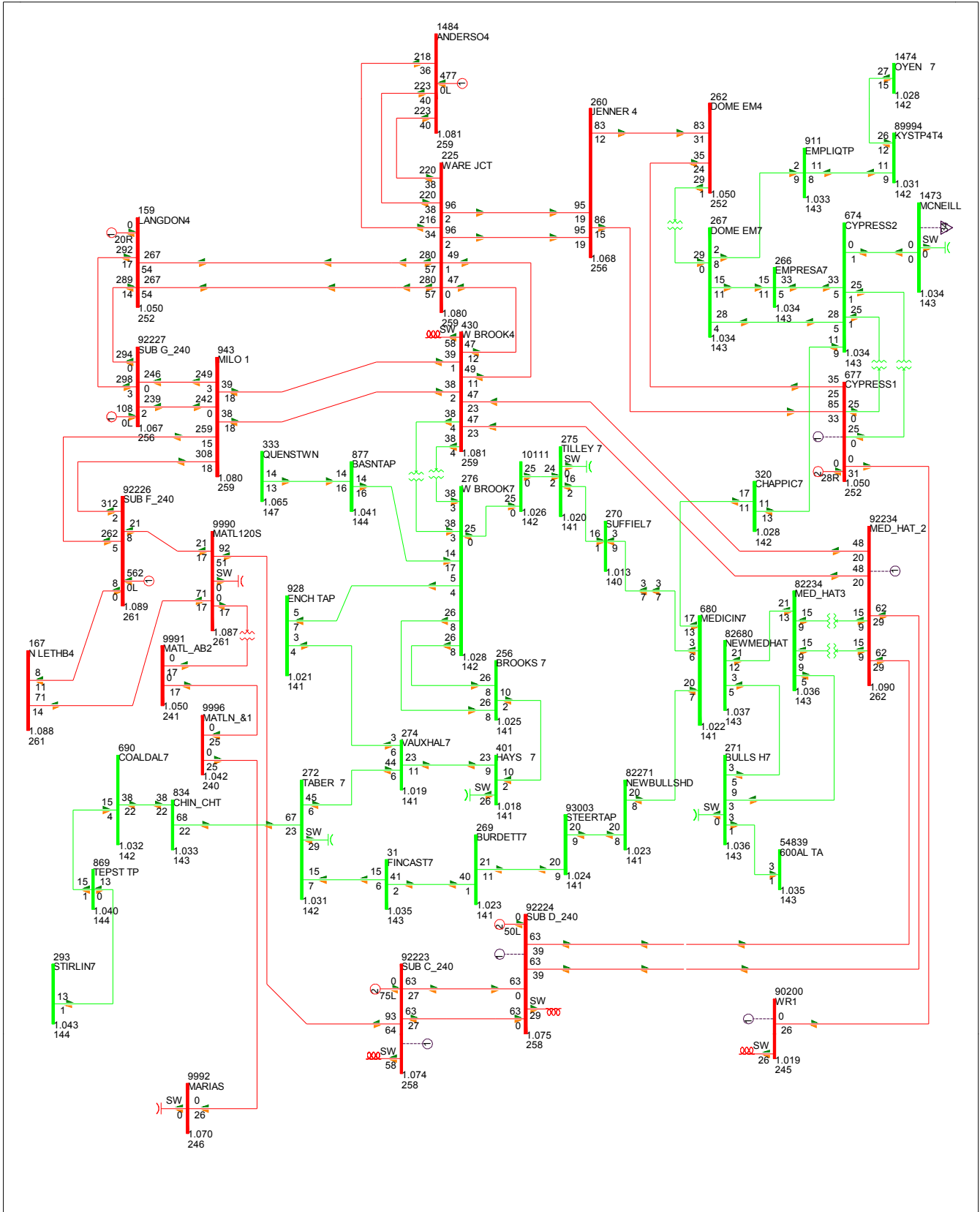


FIG 2017-1A-SL-W-23: CROWNEST 500/240 KV XMR
 WEST WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 19:20

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 994 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3657.8 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

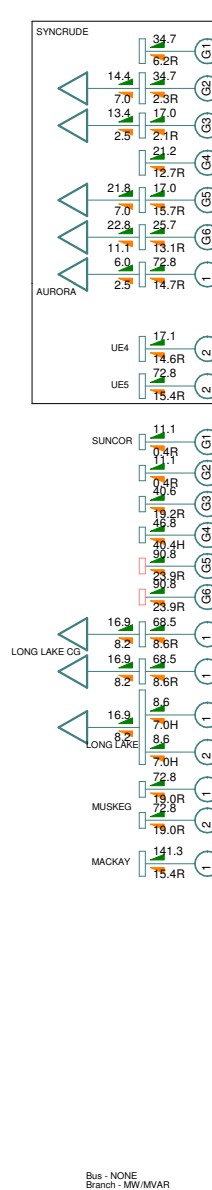
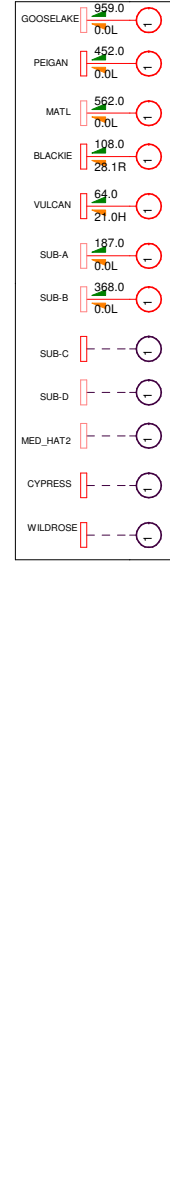
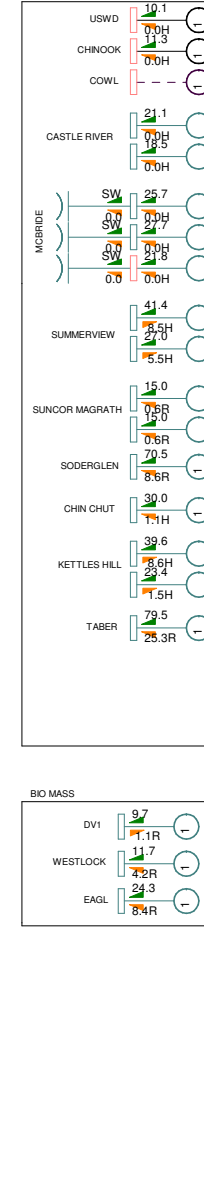
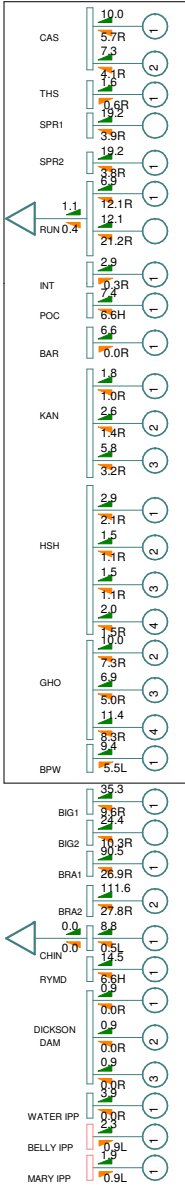
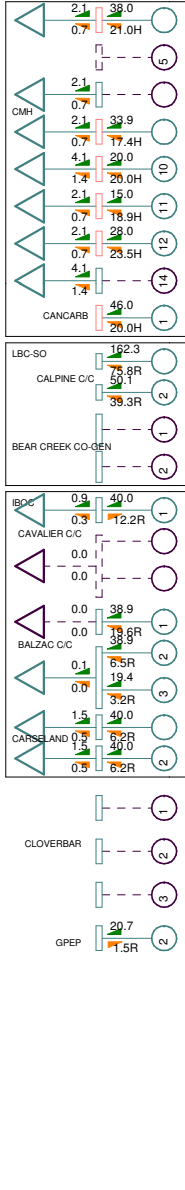
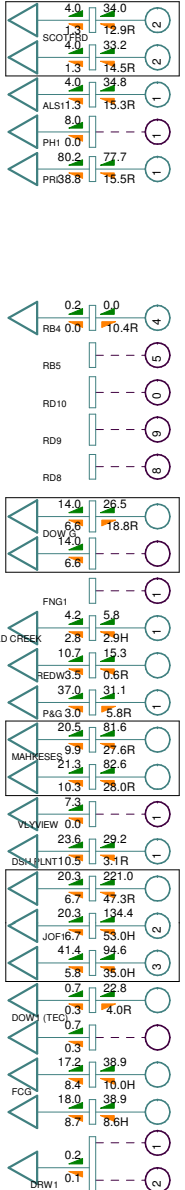
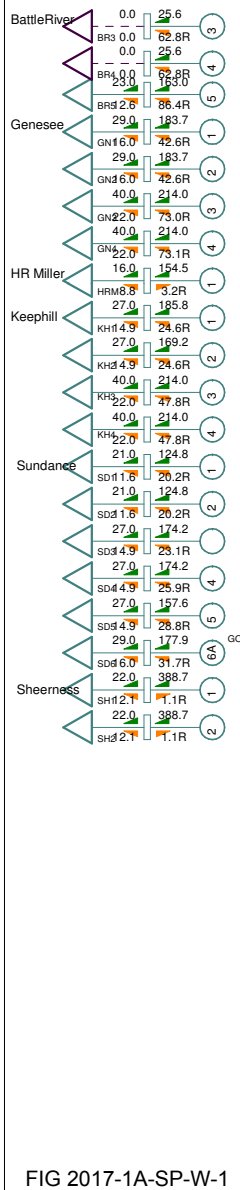


FIG 2017-1A-SP-W-1
GENERATION DISPATCH

2017 SUMMER PEAK BASE CASE IN WECC WITH CROWSNEST
SUN, NOV 23 2008 11:26

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
TOTAL DATA
13550V 0.9500V
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

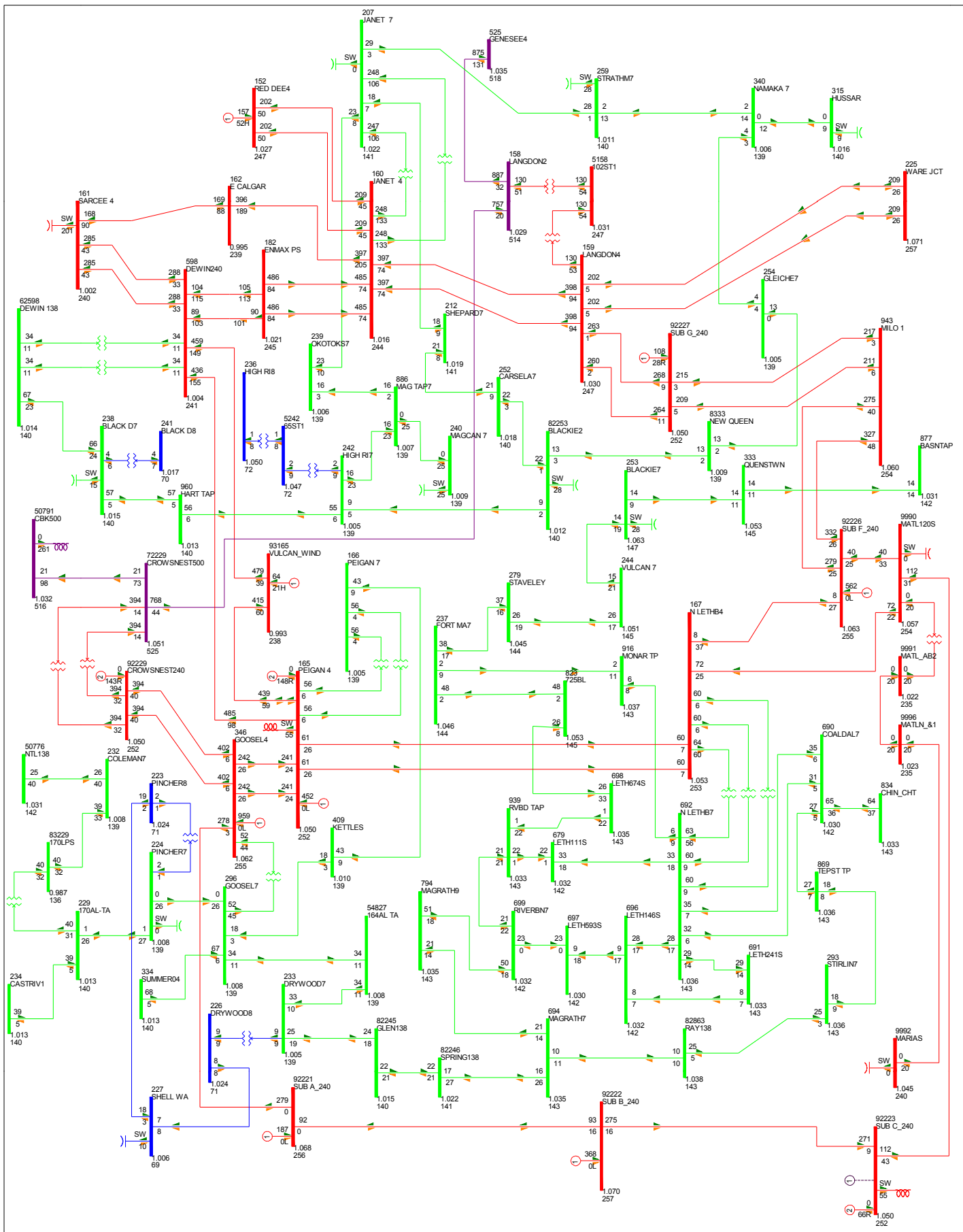


FIG 2017-1A-SP-W-2: N-0 CONDITION

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 10 MW

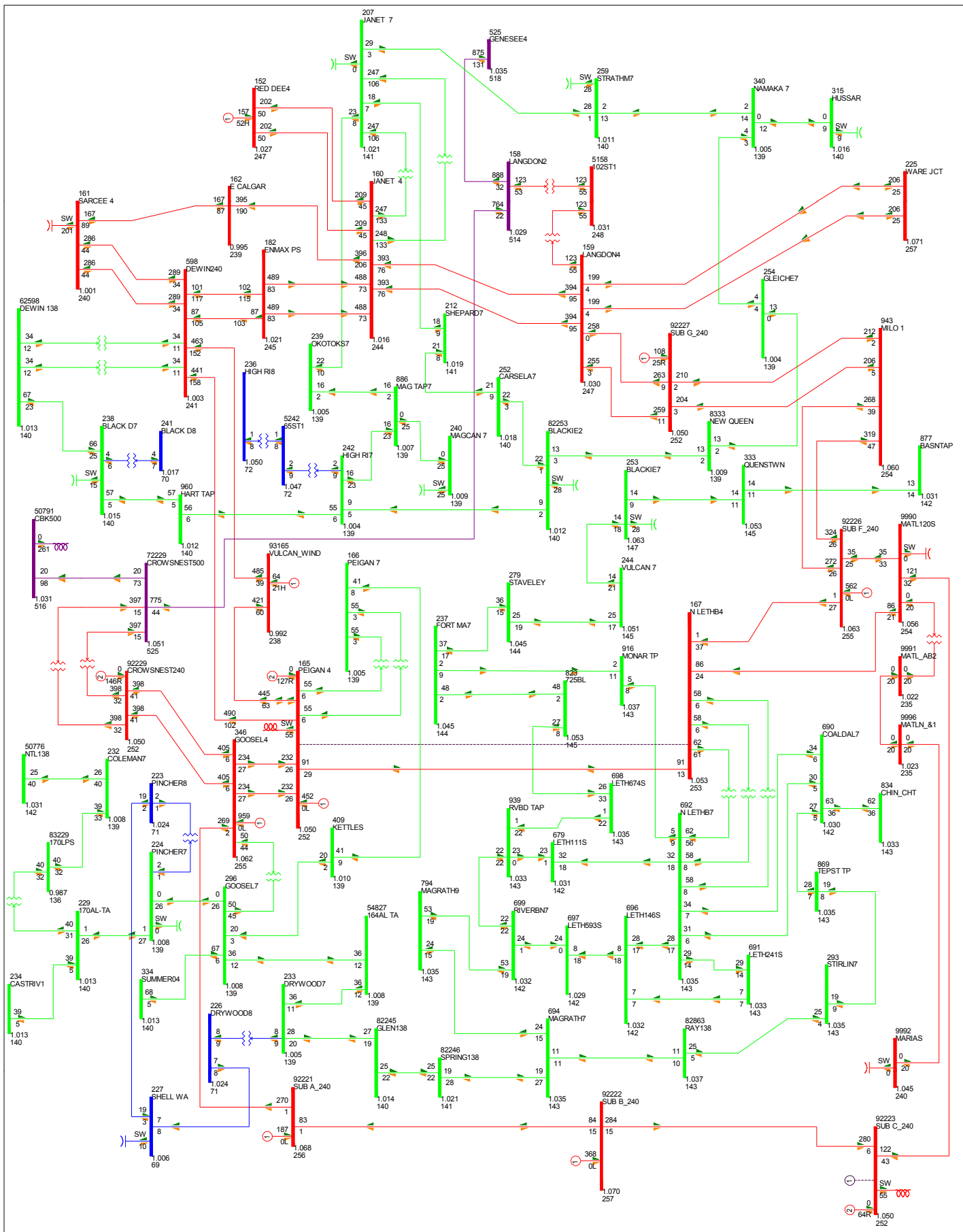


FIG 2017-1A-SP-W-4: PEIGAN TO N. LETHBRIDGE 240 KV
 WEST WIND SCENARIO
 2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 9 MW

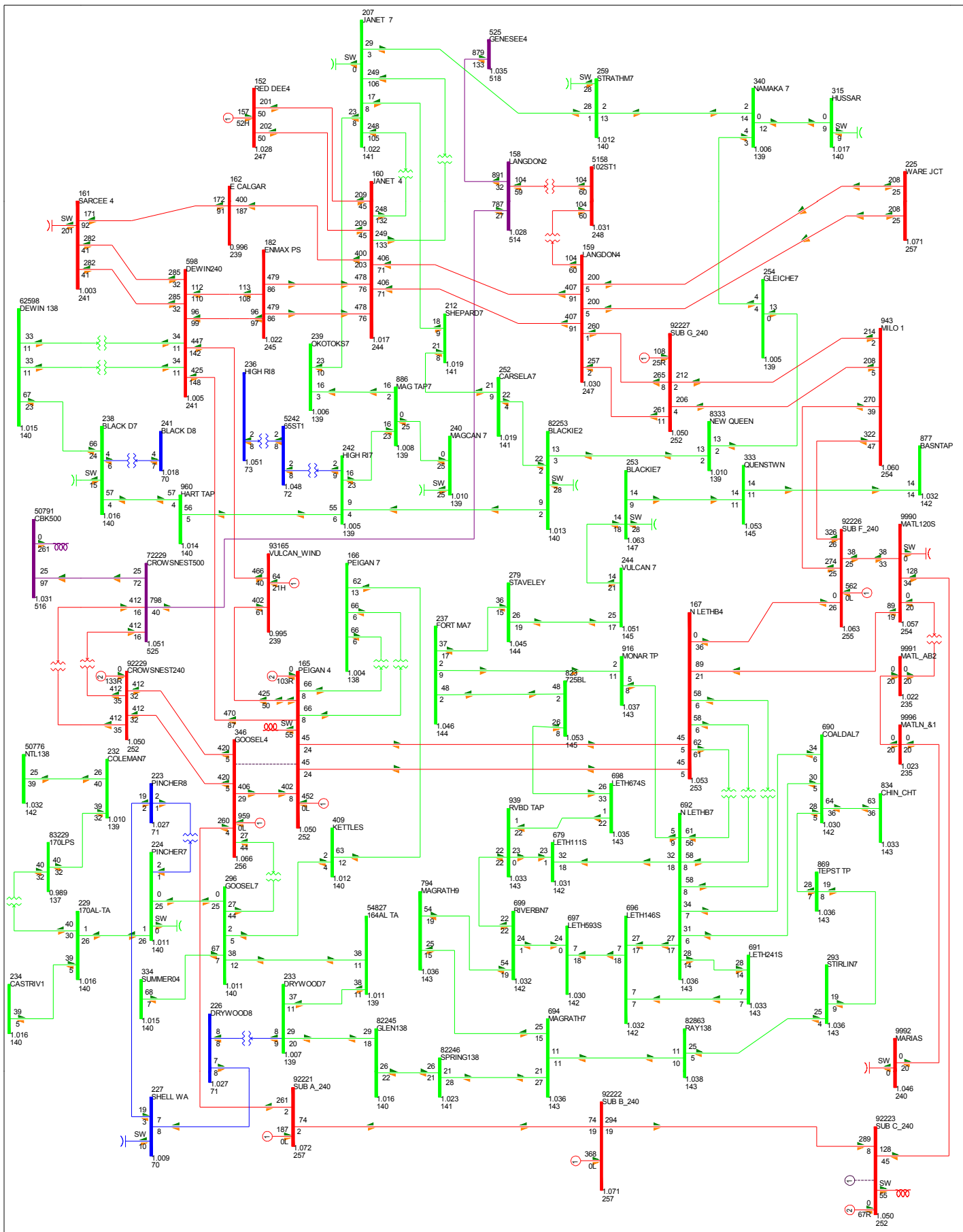


FIG 2017-1A-SP-W-6: PEIGAN TO GOOSELAKE 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 13 MW

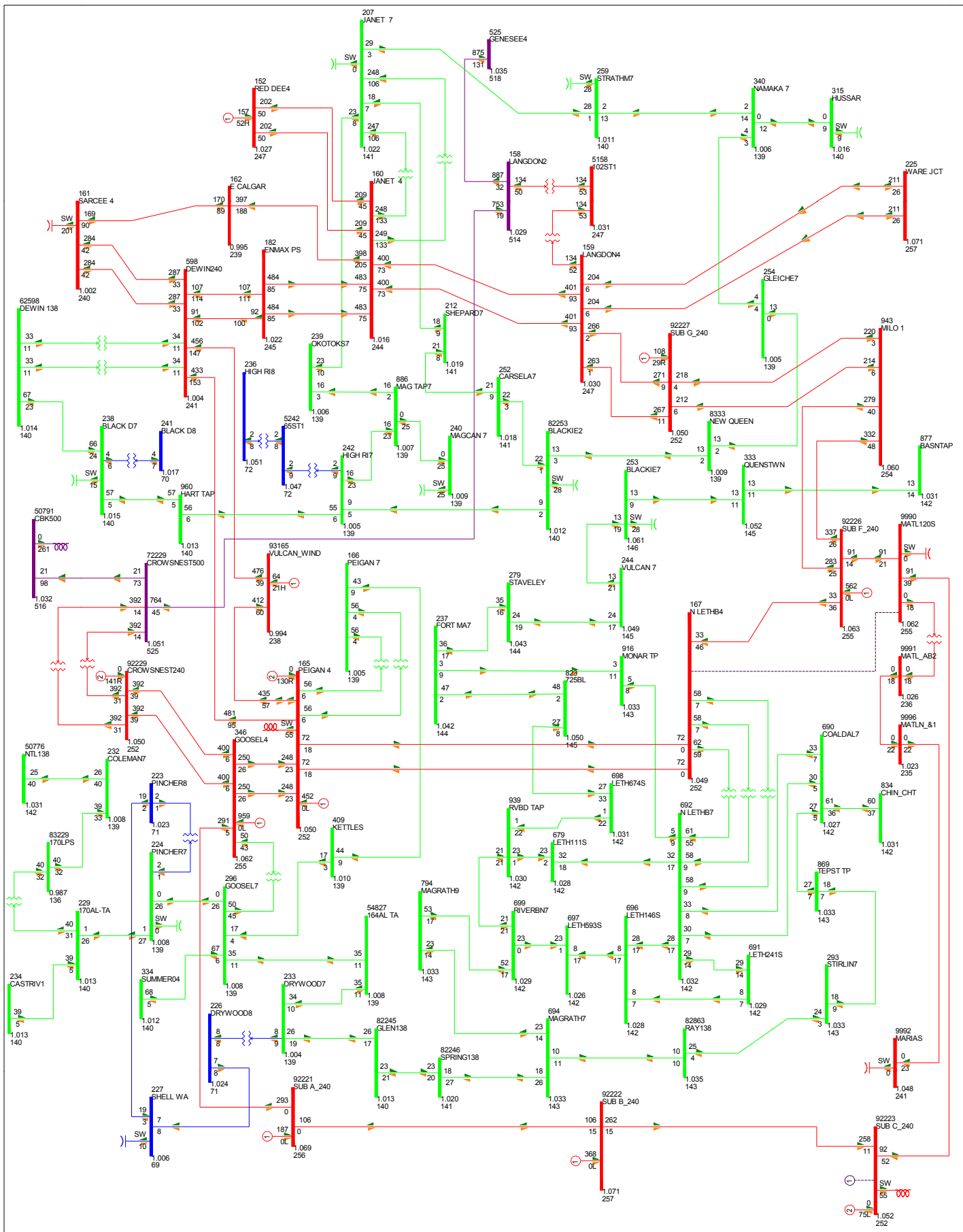


FIG 2017-1A-SP-W-8: N. LETHBRIDGE TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 10 MW

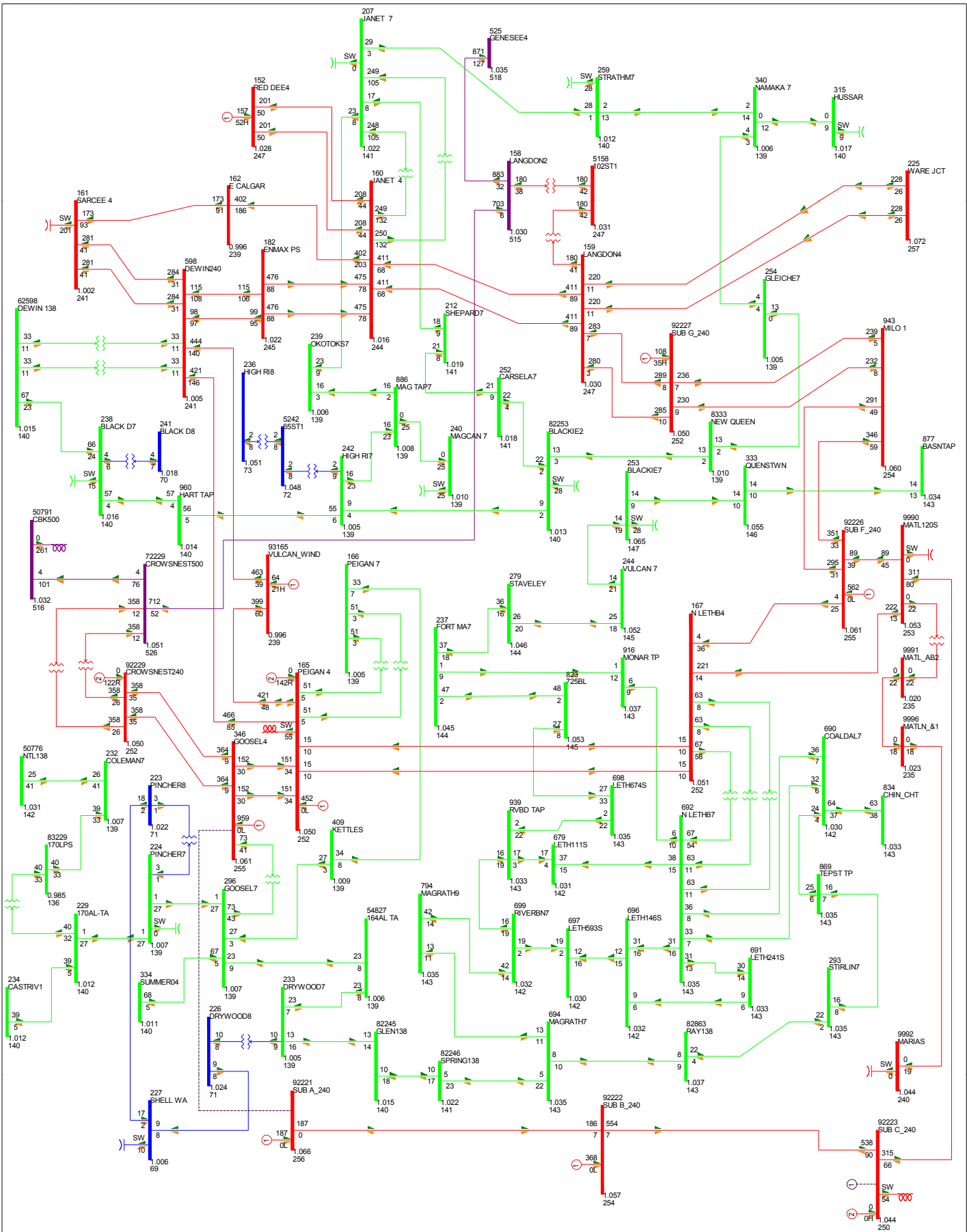


FIG 2017-1A-SP-W-10: GOOSELAKE TO SUB A 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -5 MW

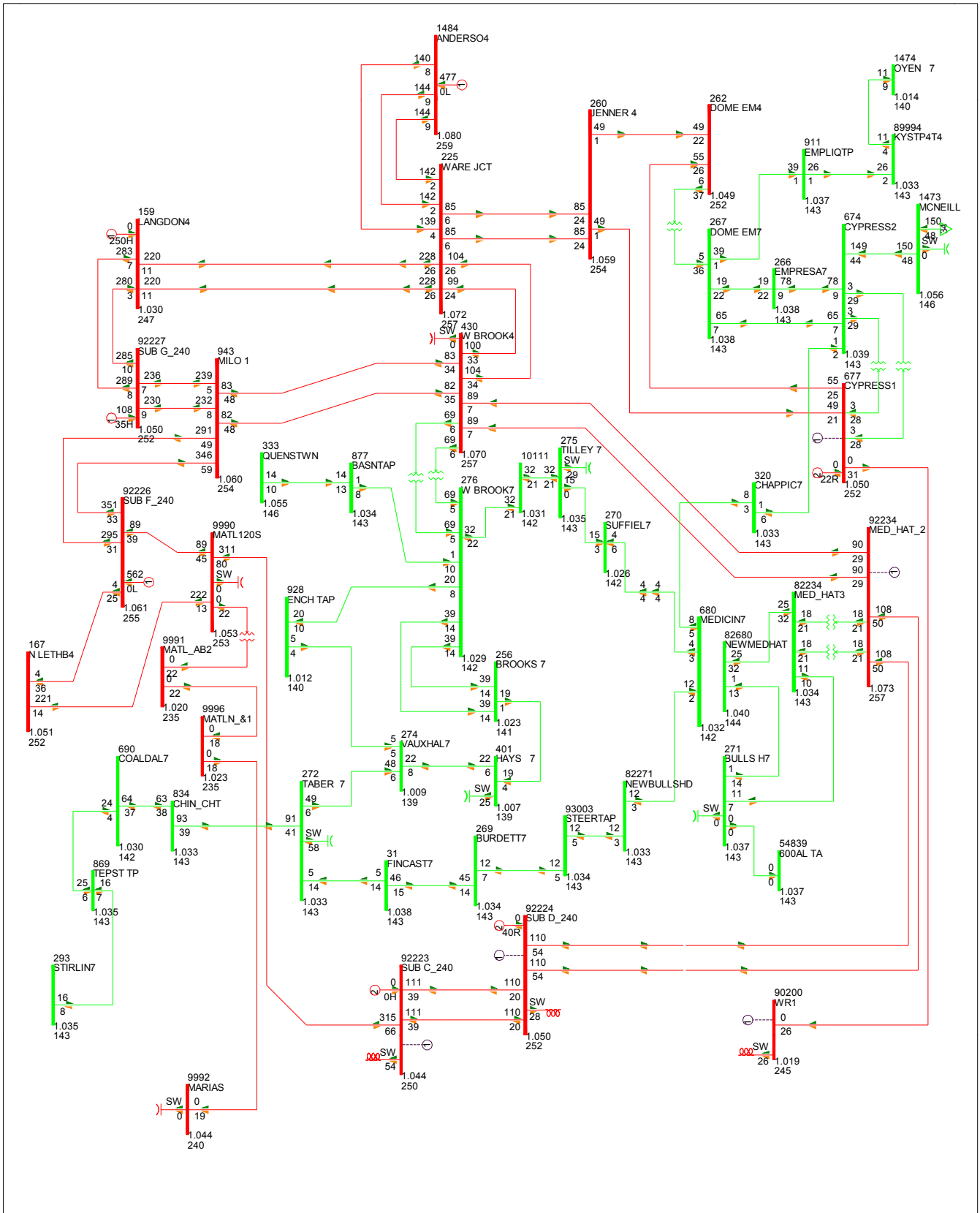


FIG 2017-1A-SP-W-11: GOOSELAKE TO SUB A 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATERATE
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -5 MW

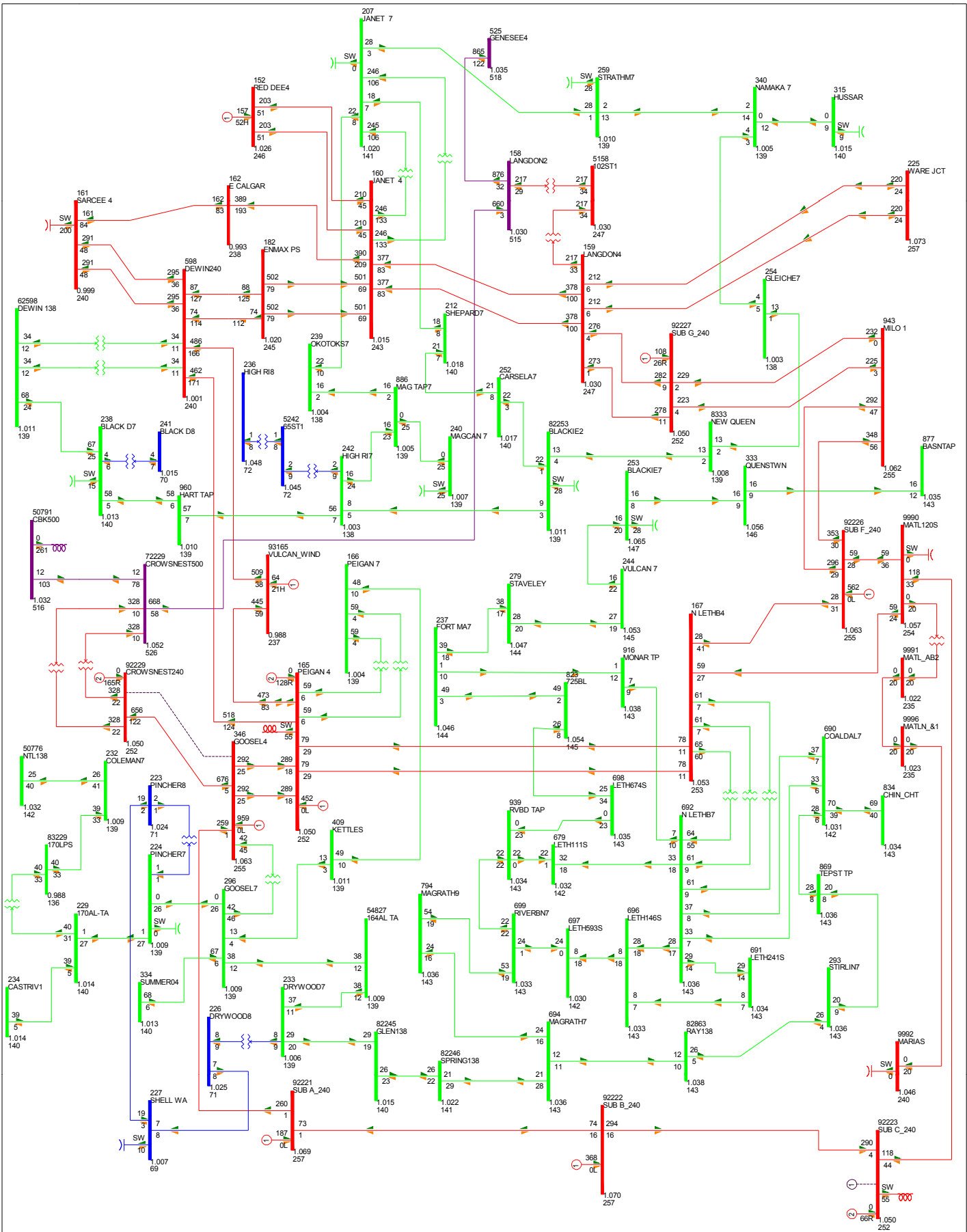


FIG 2017-1A-SP-W-12: GOOSELAKE TO CROWNSNEST 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -20 MW

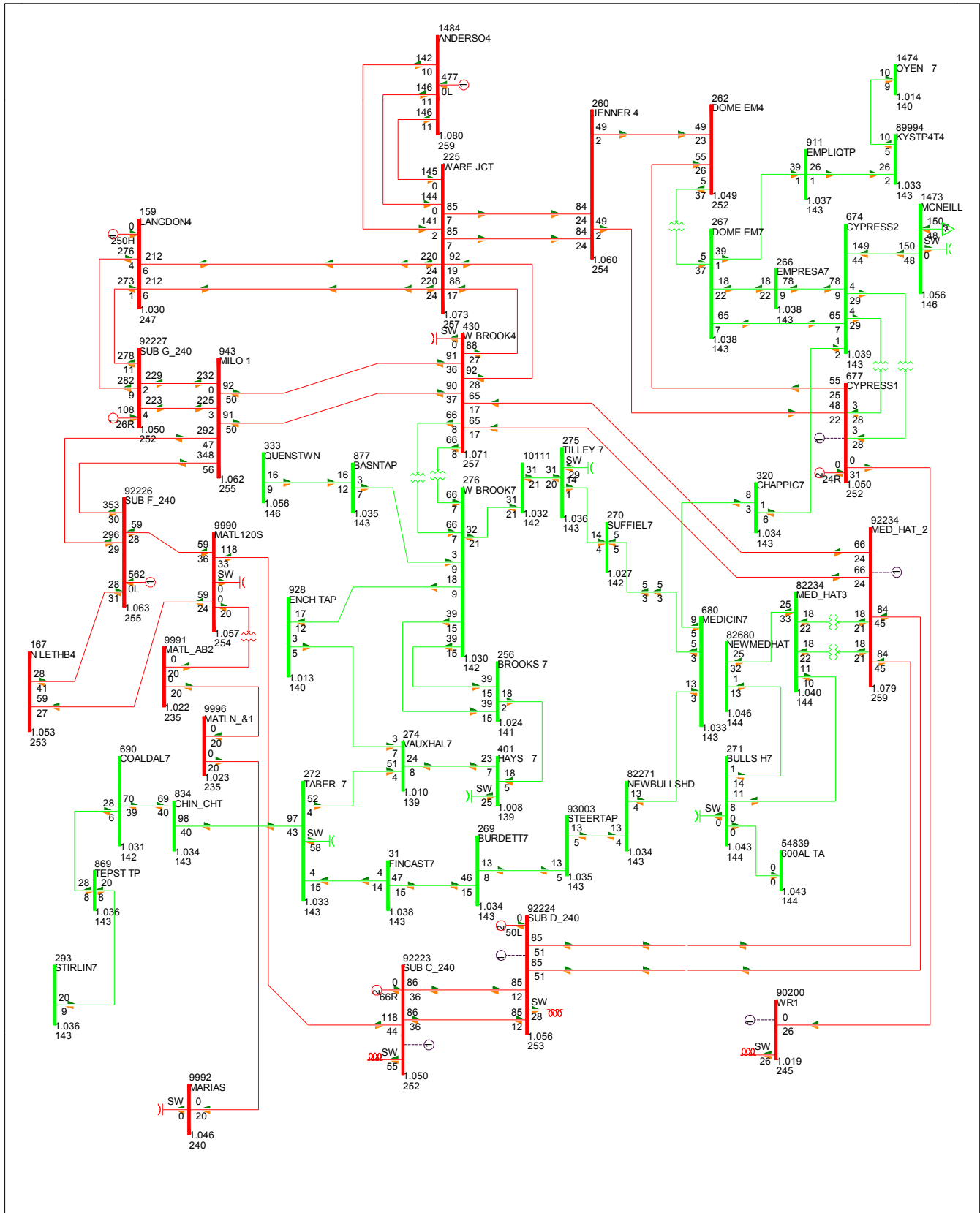


FIG 2017-1A-SP-W-13: GOOSELAKE TO CROWSNEST 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -20 MW

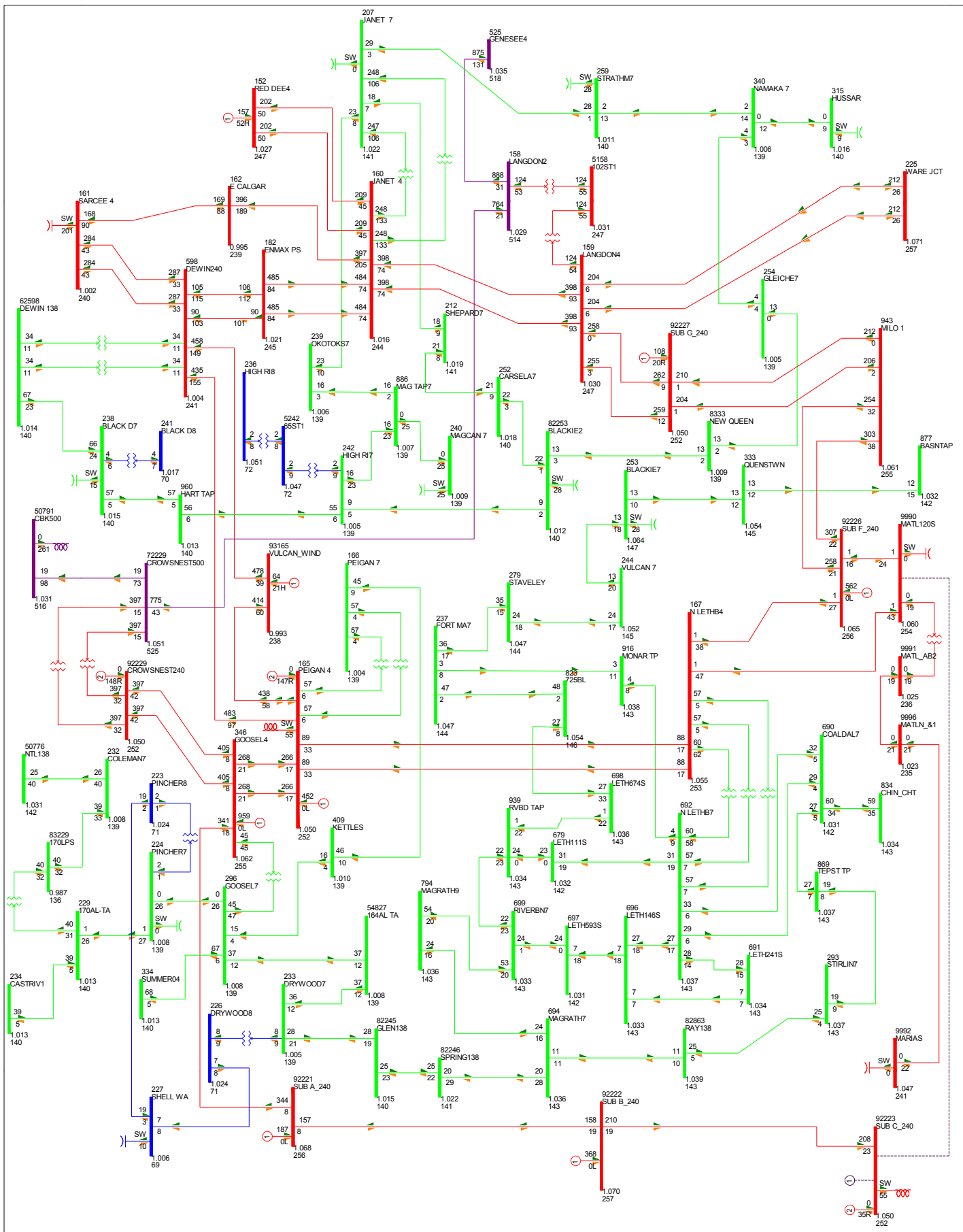


FIG 2017-1A-SP-W-14: SUB C TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 8 MW

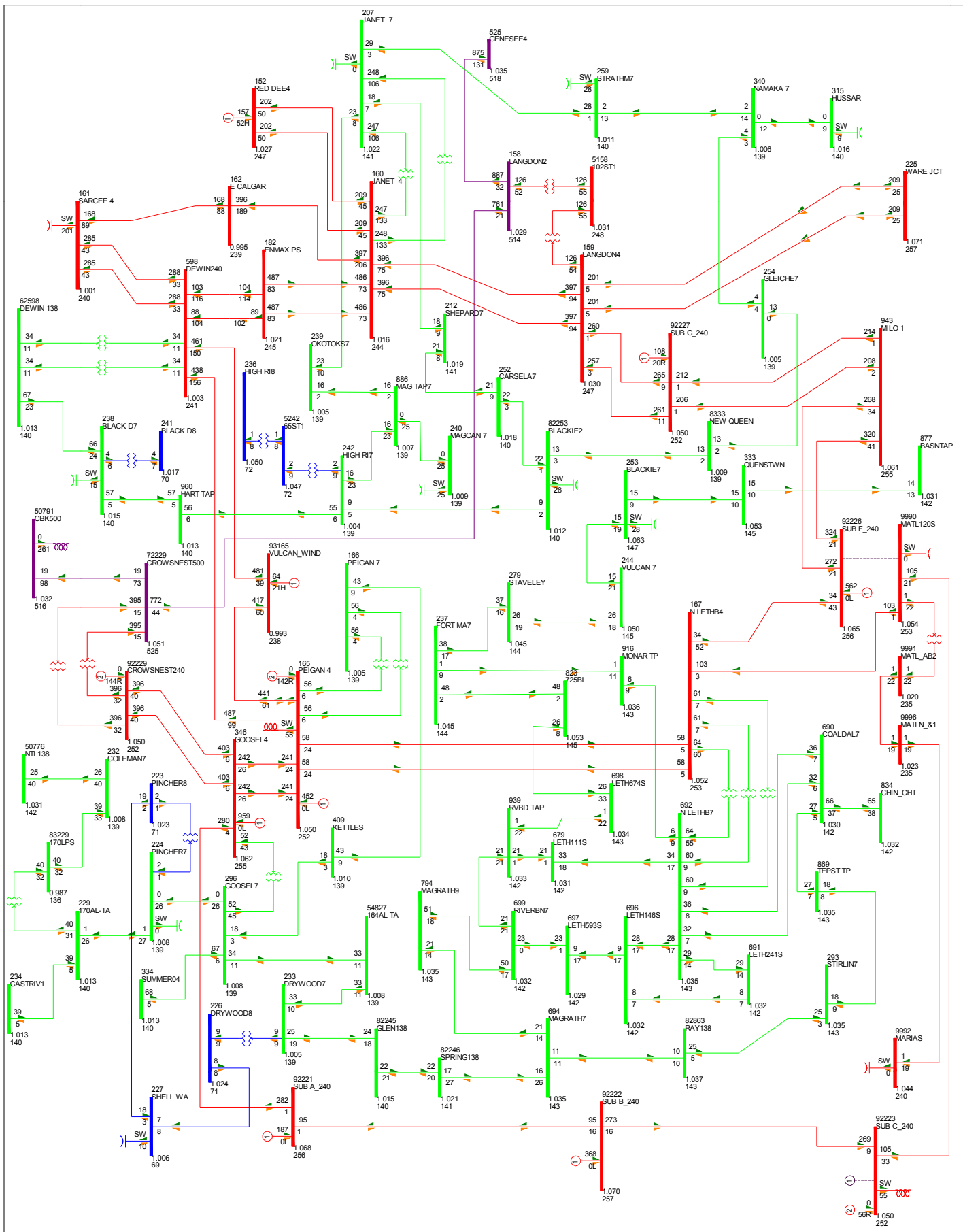


FIG 2017-1A-SP-W-16: SUB F TO MATL 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 8 MW

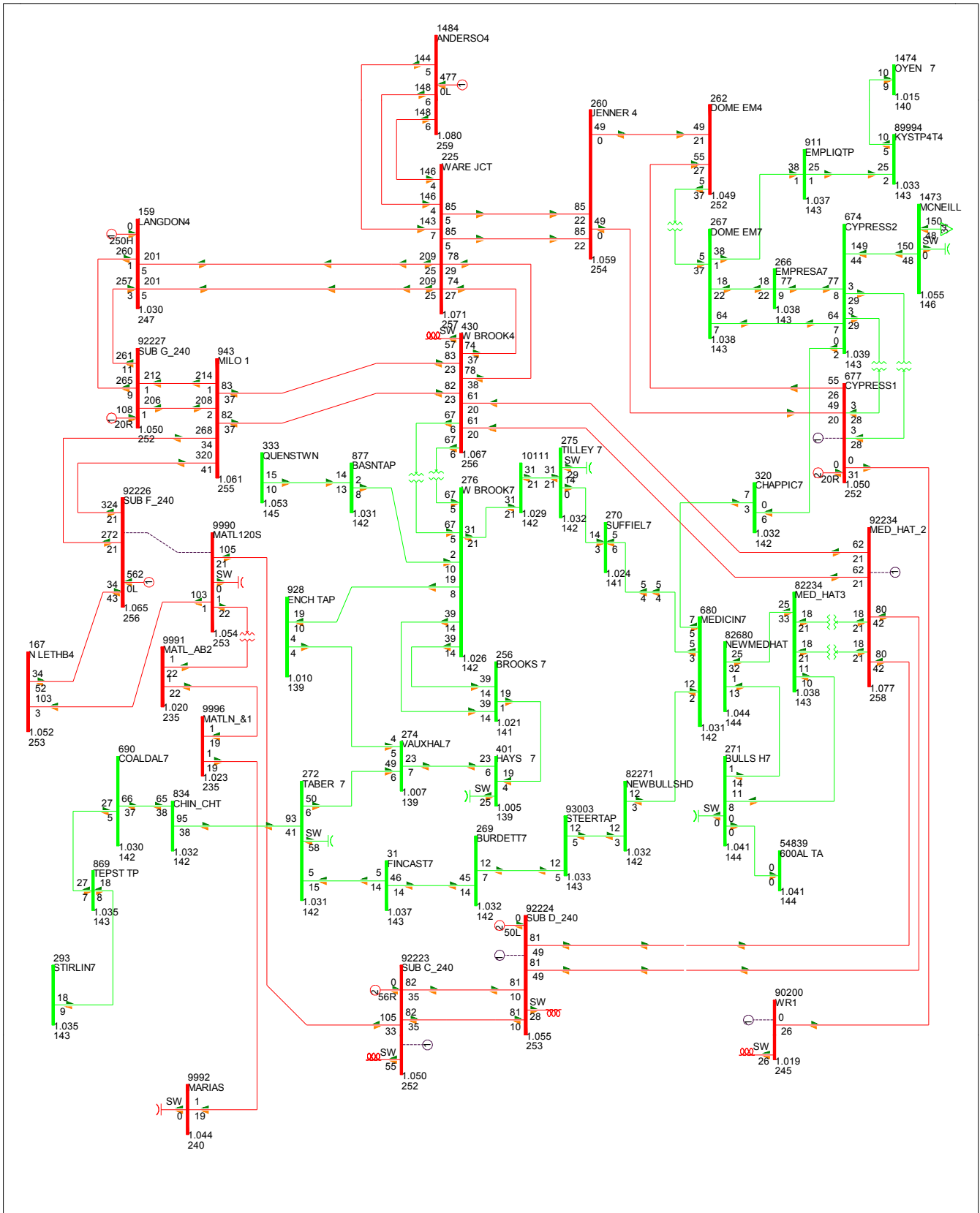


FIG 2017-1A-SP-W-17: SUB F TO MATL 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 8 MW

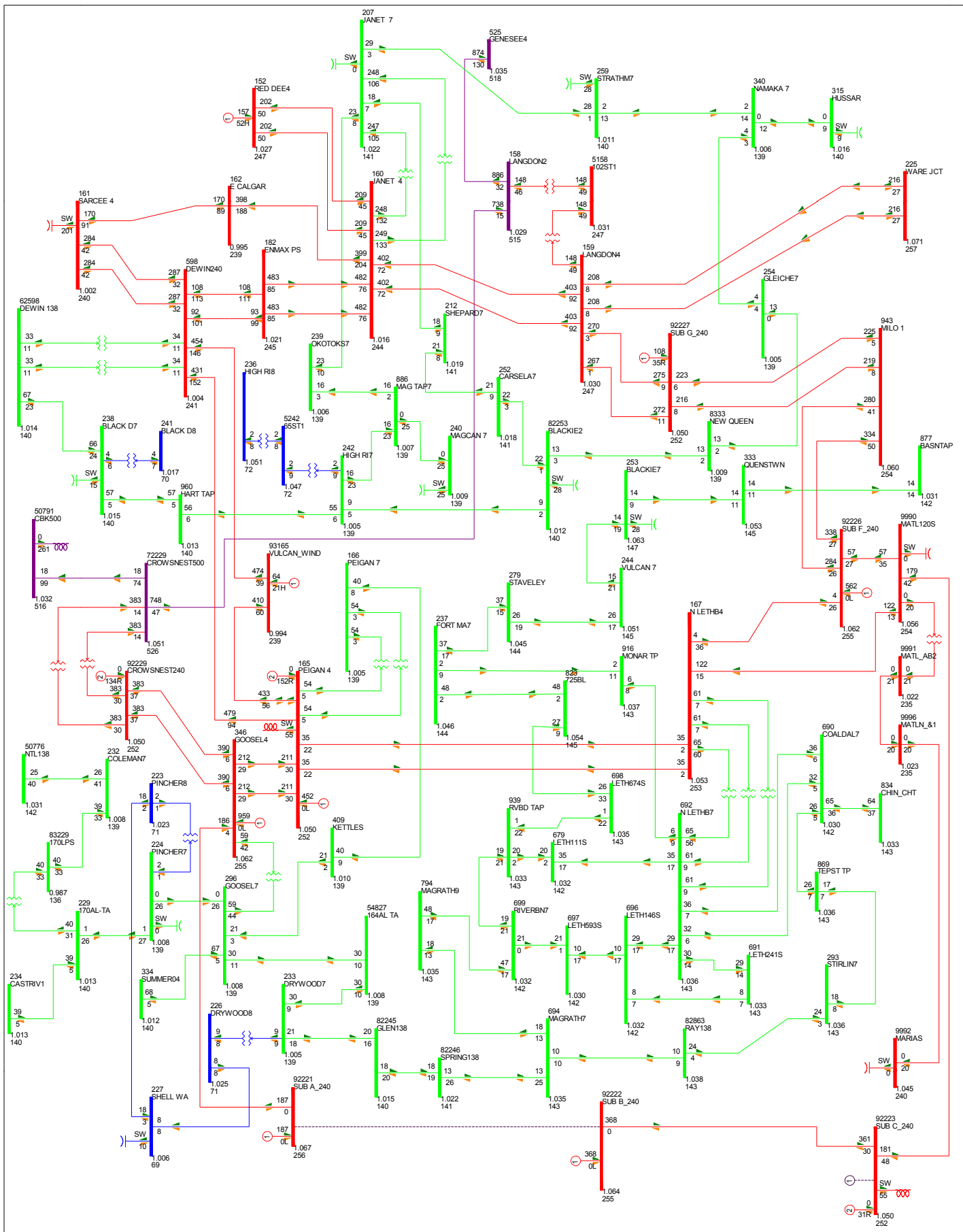


FIG 2017-1A-SP-W-18: SUB A TO SUB B 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 7 MW

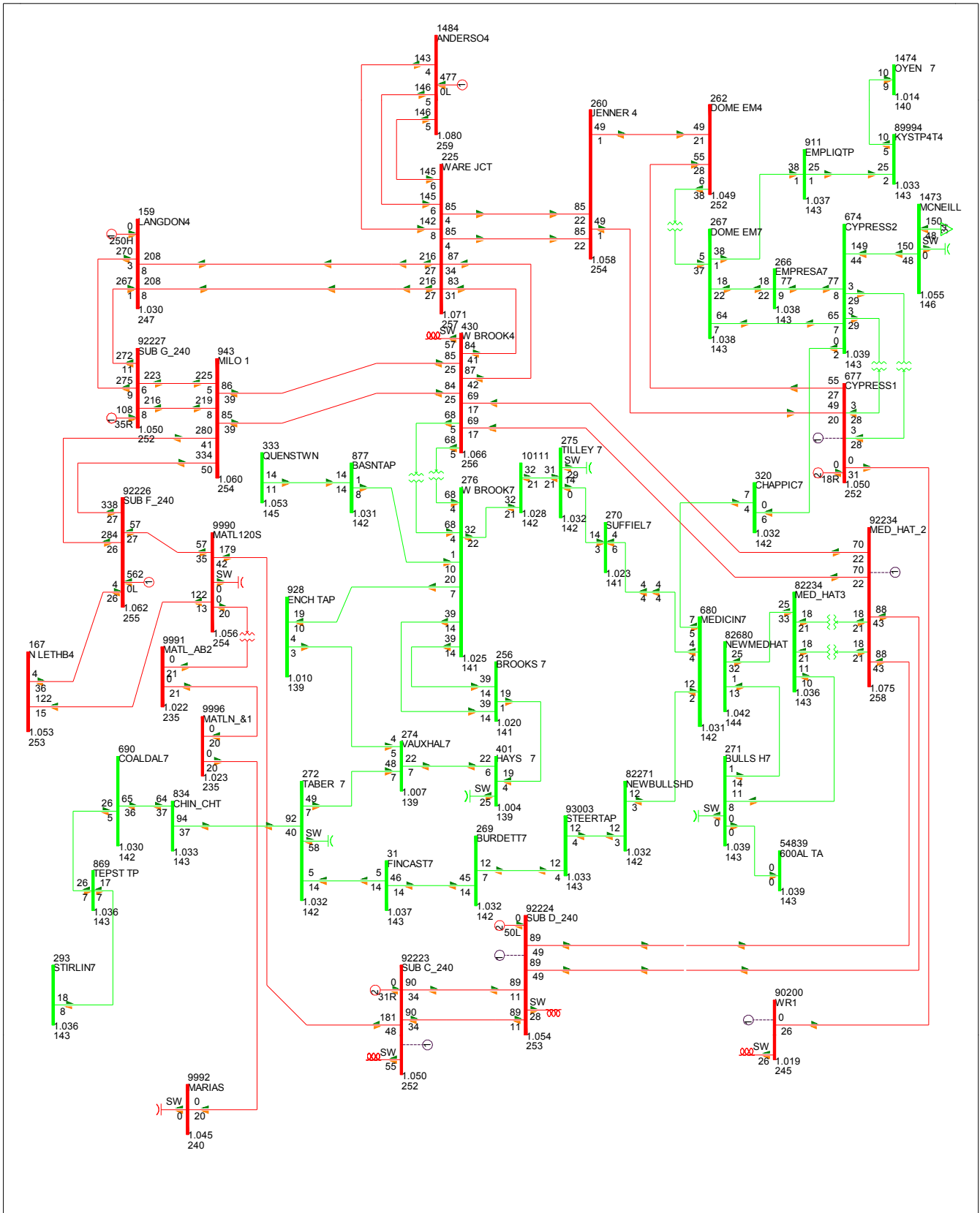


FIG 2017-1A-SW-P-19: SUB A TO SUB B 240 KV
 WEST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 7 MW

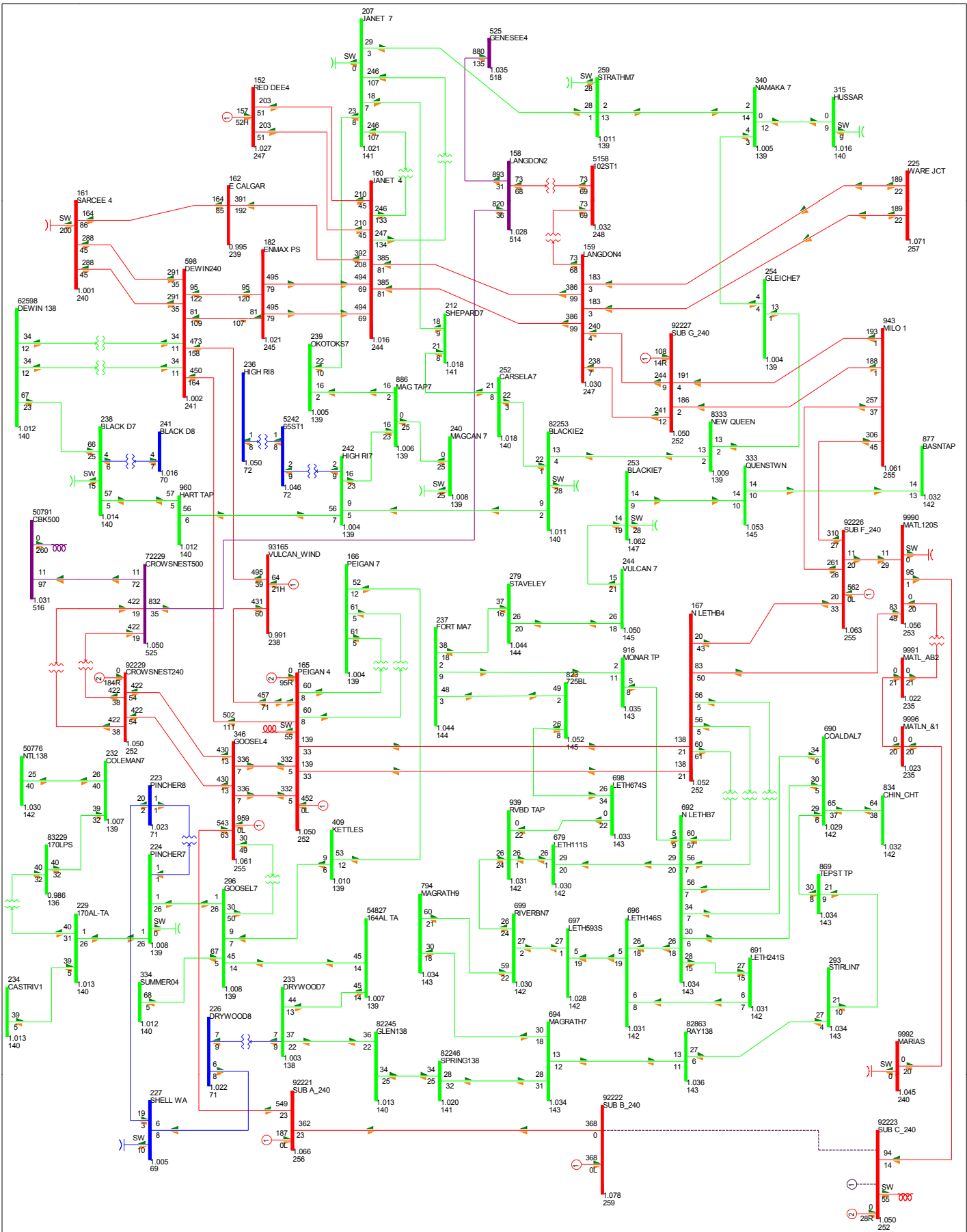


FIG 2017-1A-SP-W-20: SUB B TO SUB C 240 KV

WEST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -3 MW

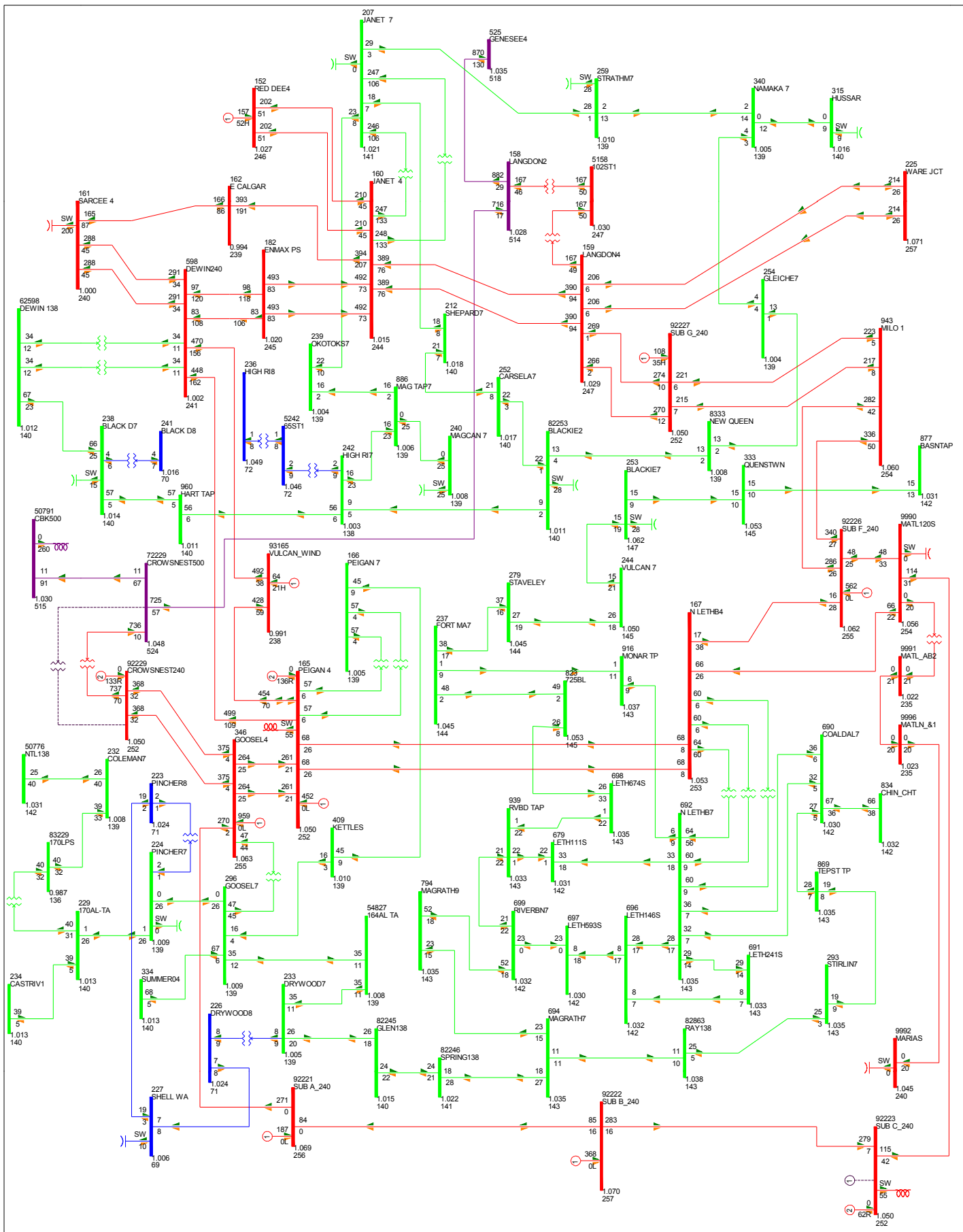


FIG 2017-1A-SP-W-22: CROWSNEST 500/240 KV XMR

WEST WIND SCENARIO

2017 South West System TUE, DEC 02 2008 19:21

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 > 500.000
 BC Export: 1 MW

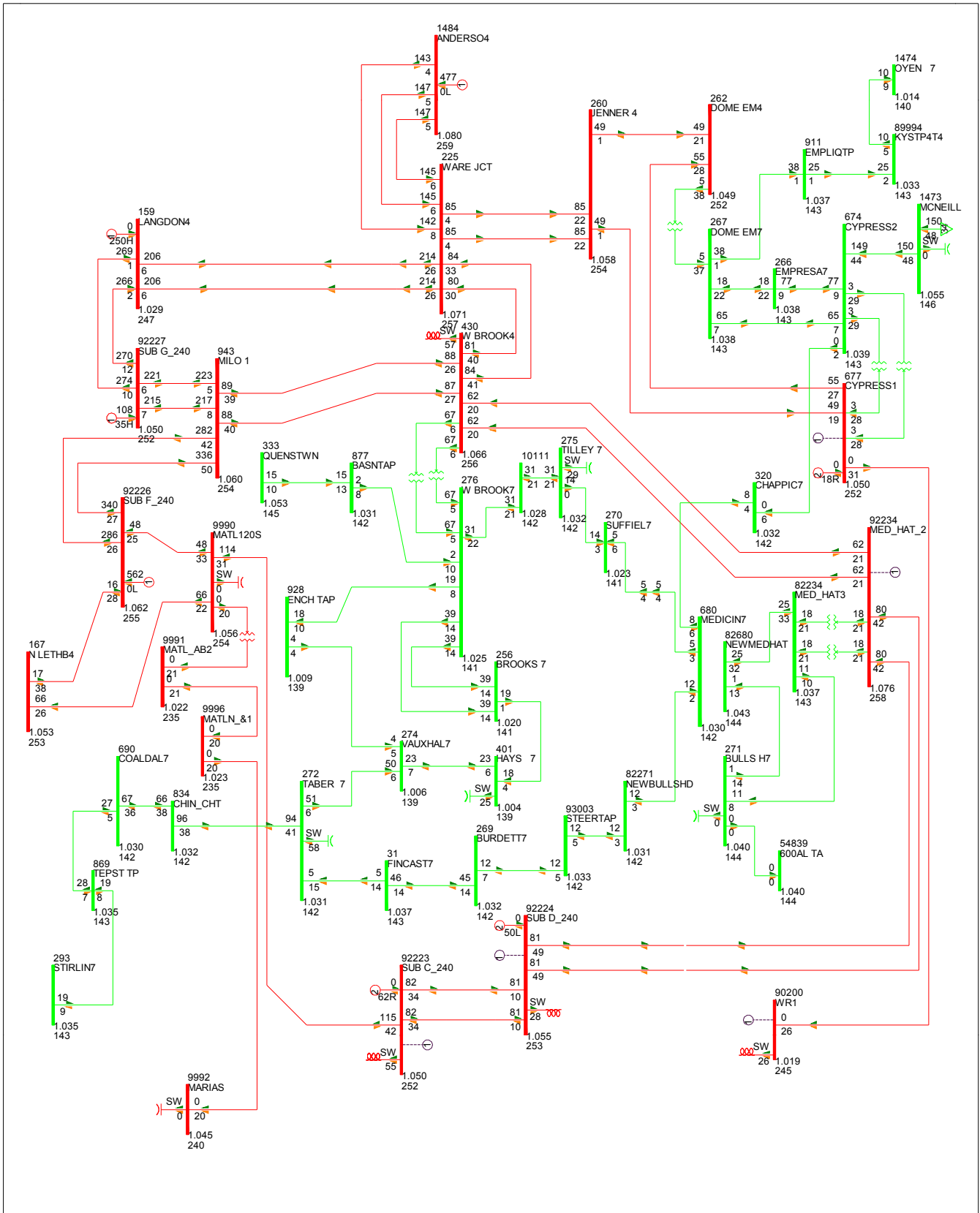


FIG 2017-1A-SP-W-23: CROWNEST 500/240 KV XMER
 WEST WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 19:21

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3783.9 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS BOW HYDRO GEN. 153.7 MW

GROSS FUTURE WIND GEN. IN SOUTH 2699.0 MW

FORT MCMURRAY GEN.

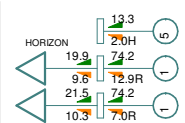
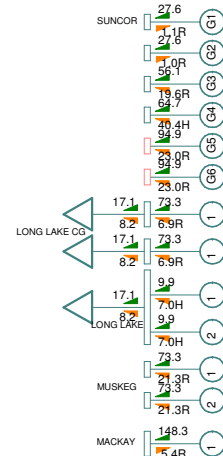
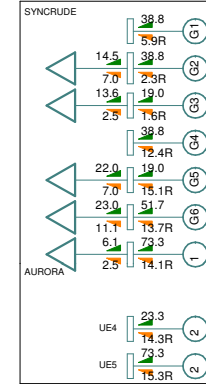
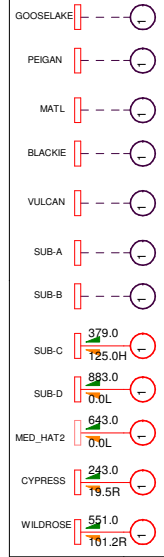
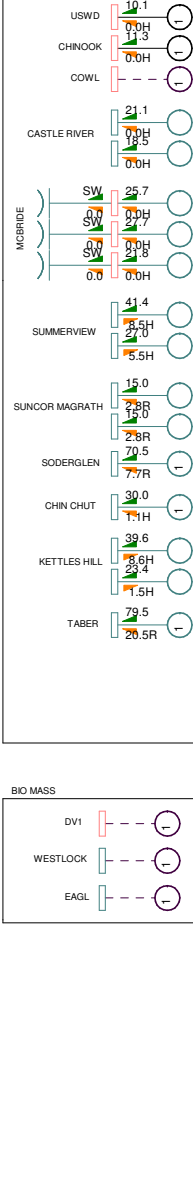
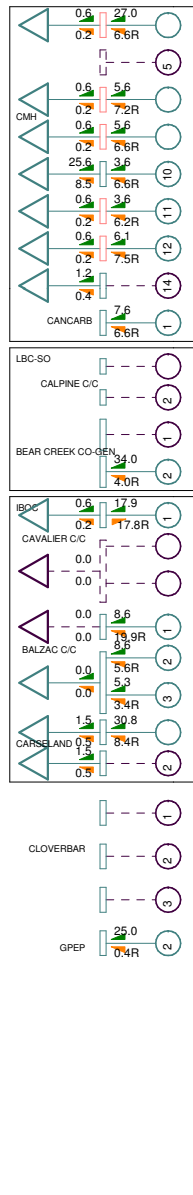
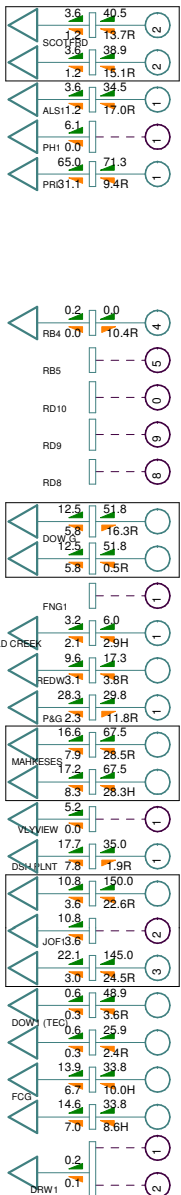
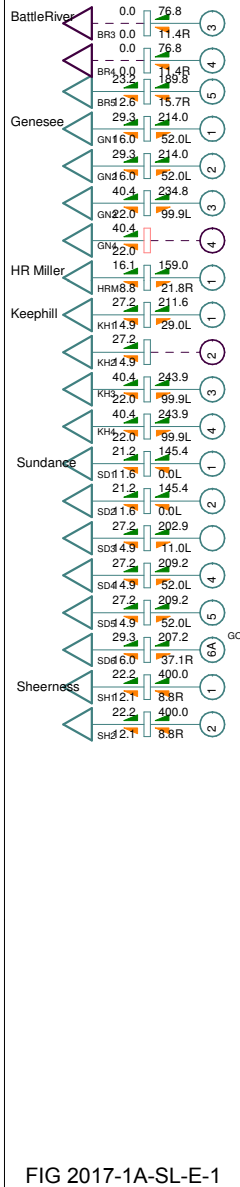


FIG 2017-1A-SL-E-1
GENERATION DISPATCH

2017 SUMMER LIGHT SCENARIO 5 SK IMPORT IN WCC
SUN, NOV 23 2008 11:26

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

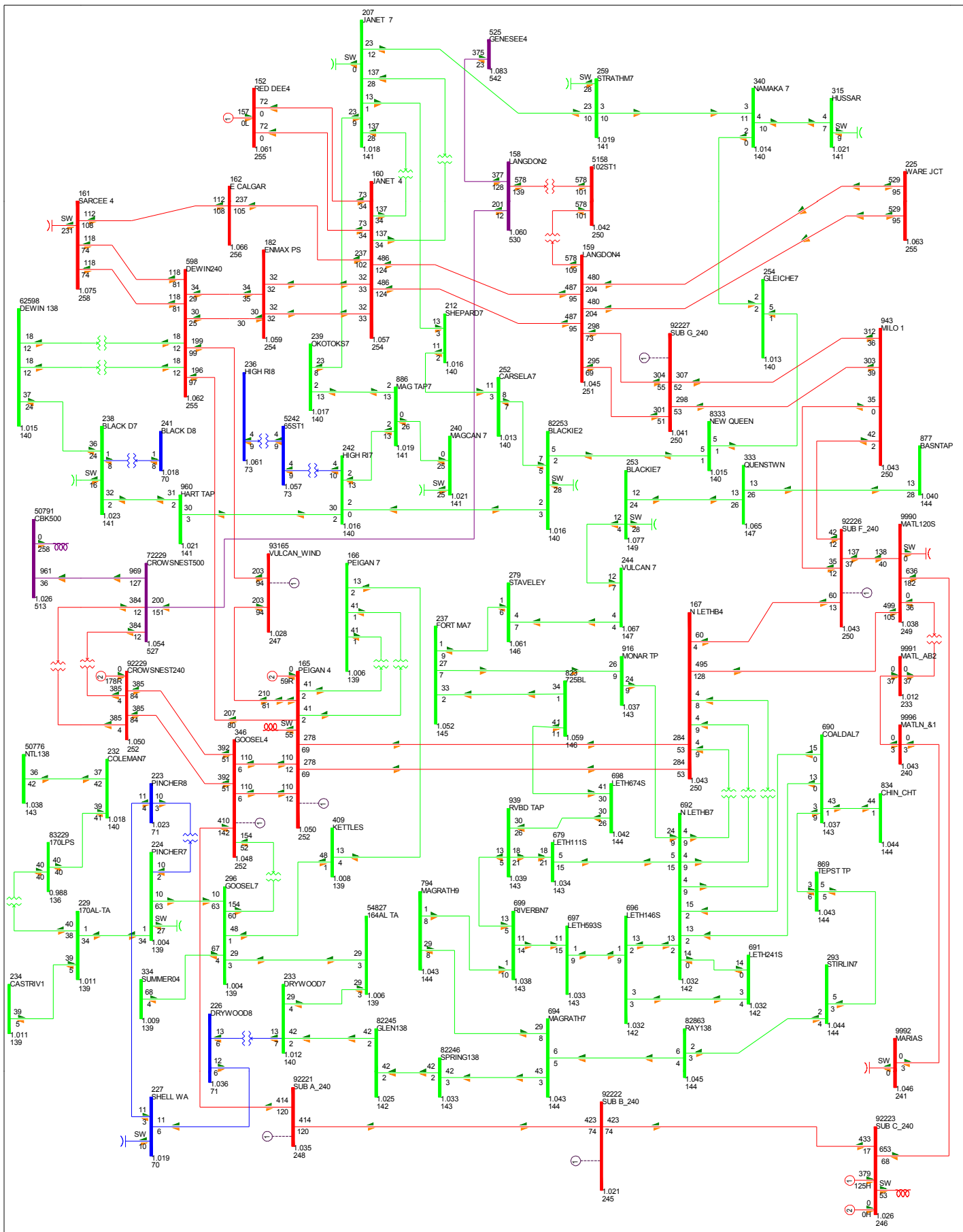


FIG 2017-1A-SL-E-2: N-0 CONDITION

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 > 500.000
 BC Export: 1038 MW

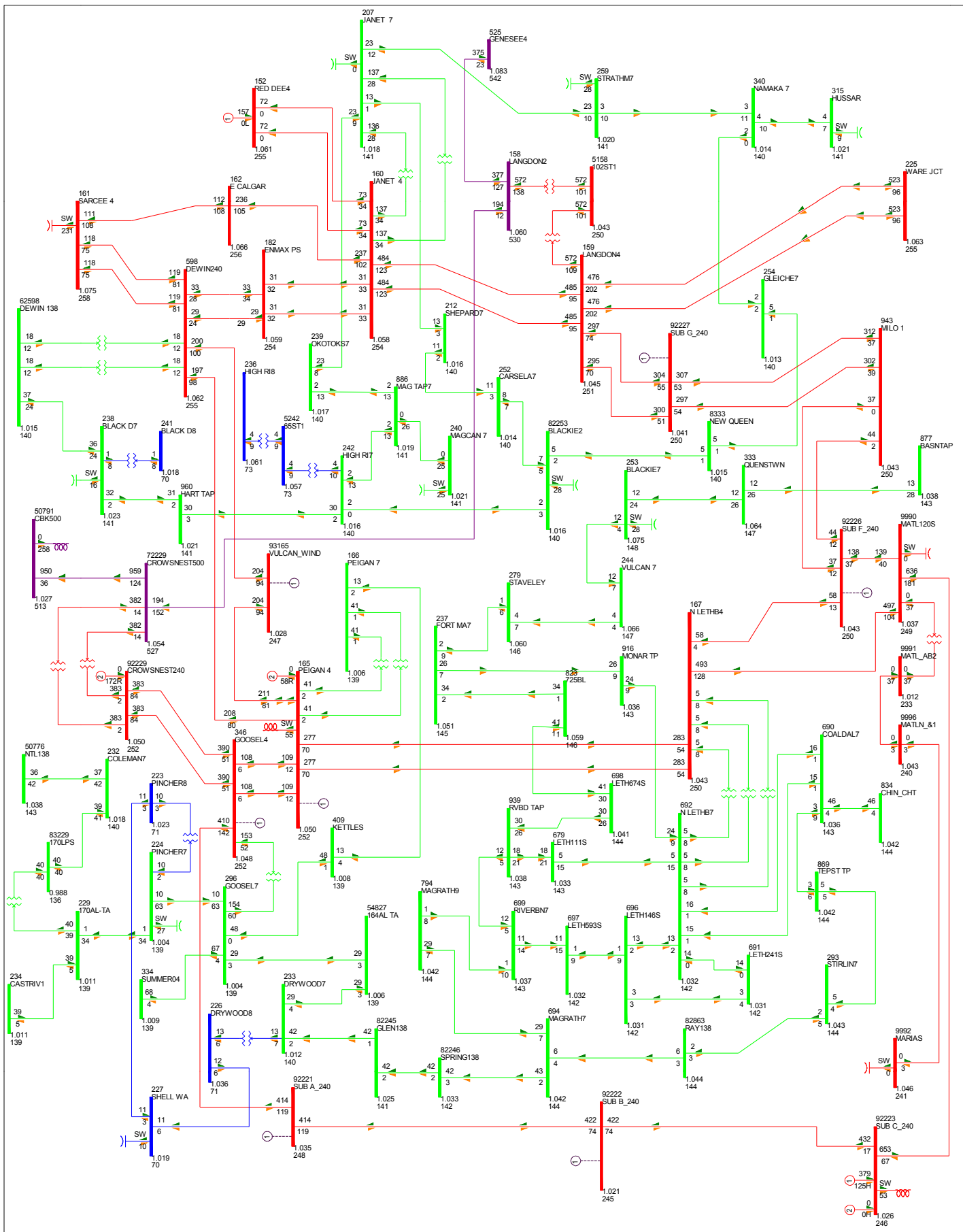


FIG 2017-1A-SL-E-4: JENNER TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 > 500.000
 BC Export: 1026 MW

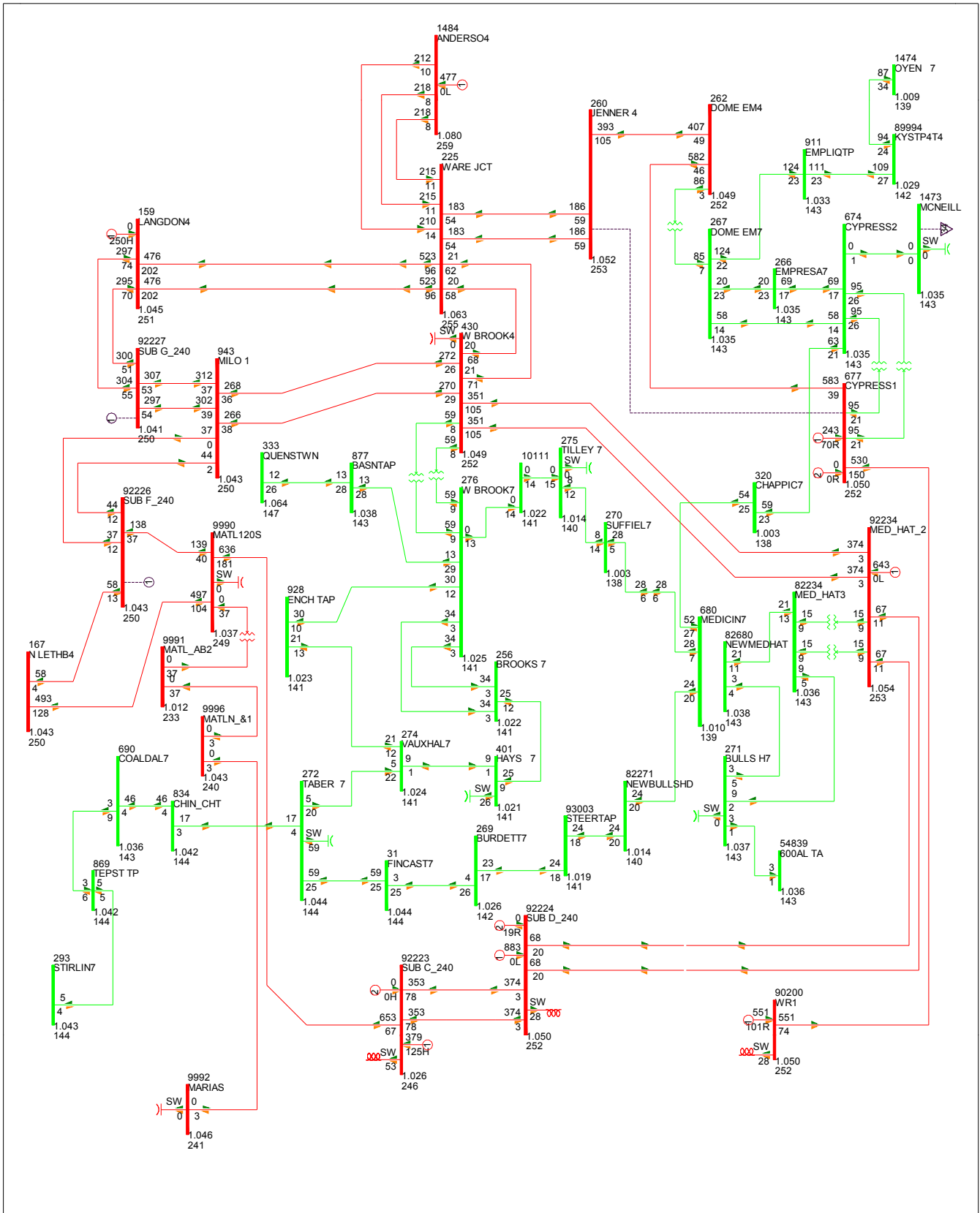


FIG 2017-1A-SL-E-5: JENNER TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1026 MW

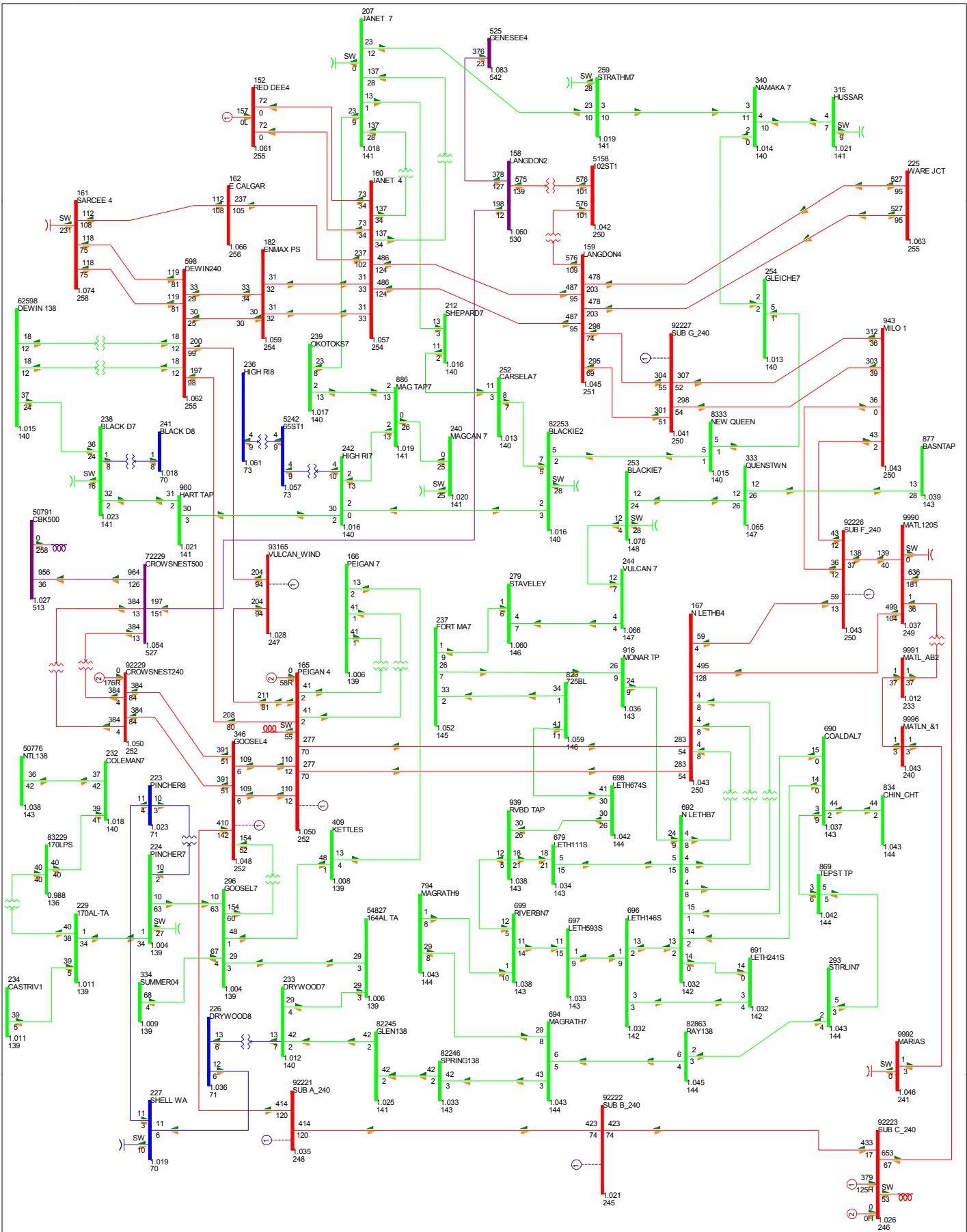


FIG 2017-1A-SL-E-6: DOME EMPRESS TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 19:26

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1032 MW

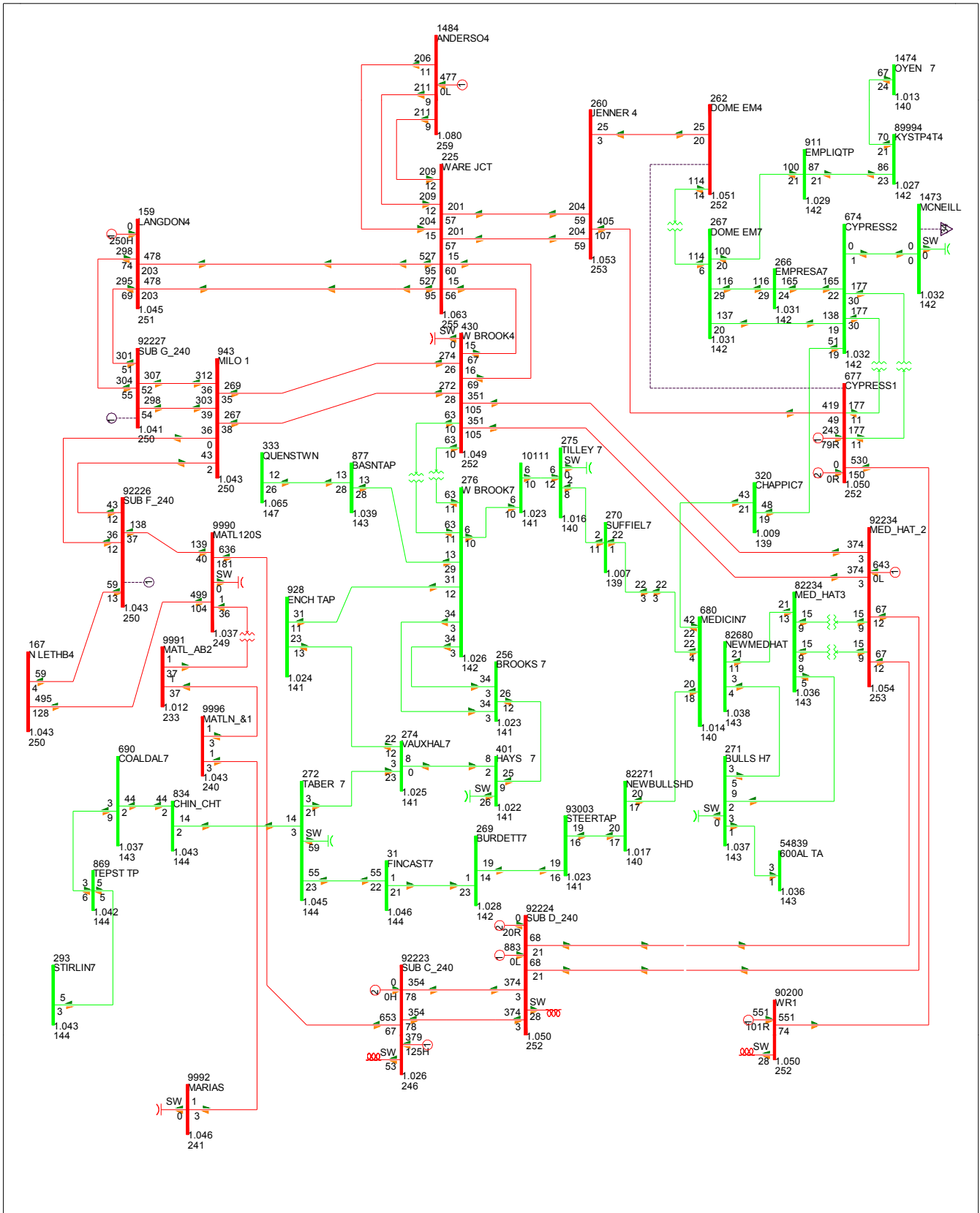


FIG 2017-1A-SL-E-7: DOME EMPRESS TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 19:26

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1032 MW

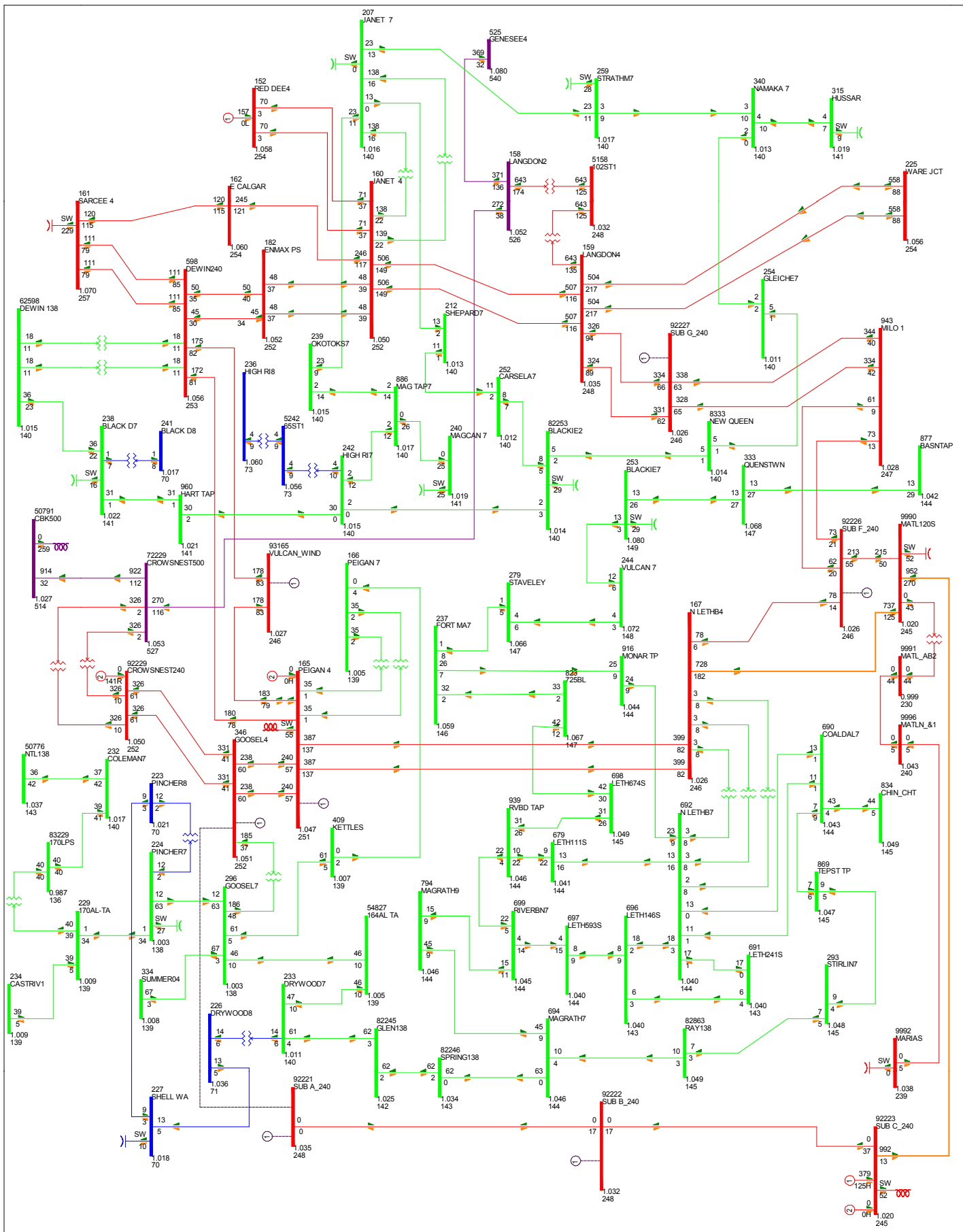


FIG 2017-1A-SL-E-8: GOOSELAKE TO SUB A 240 KV
 EAST WIND SCENARIO
 2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 991 MW

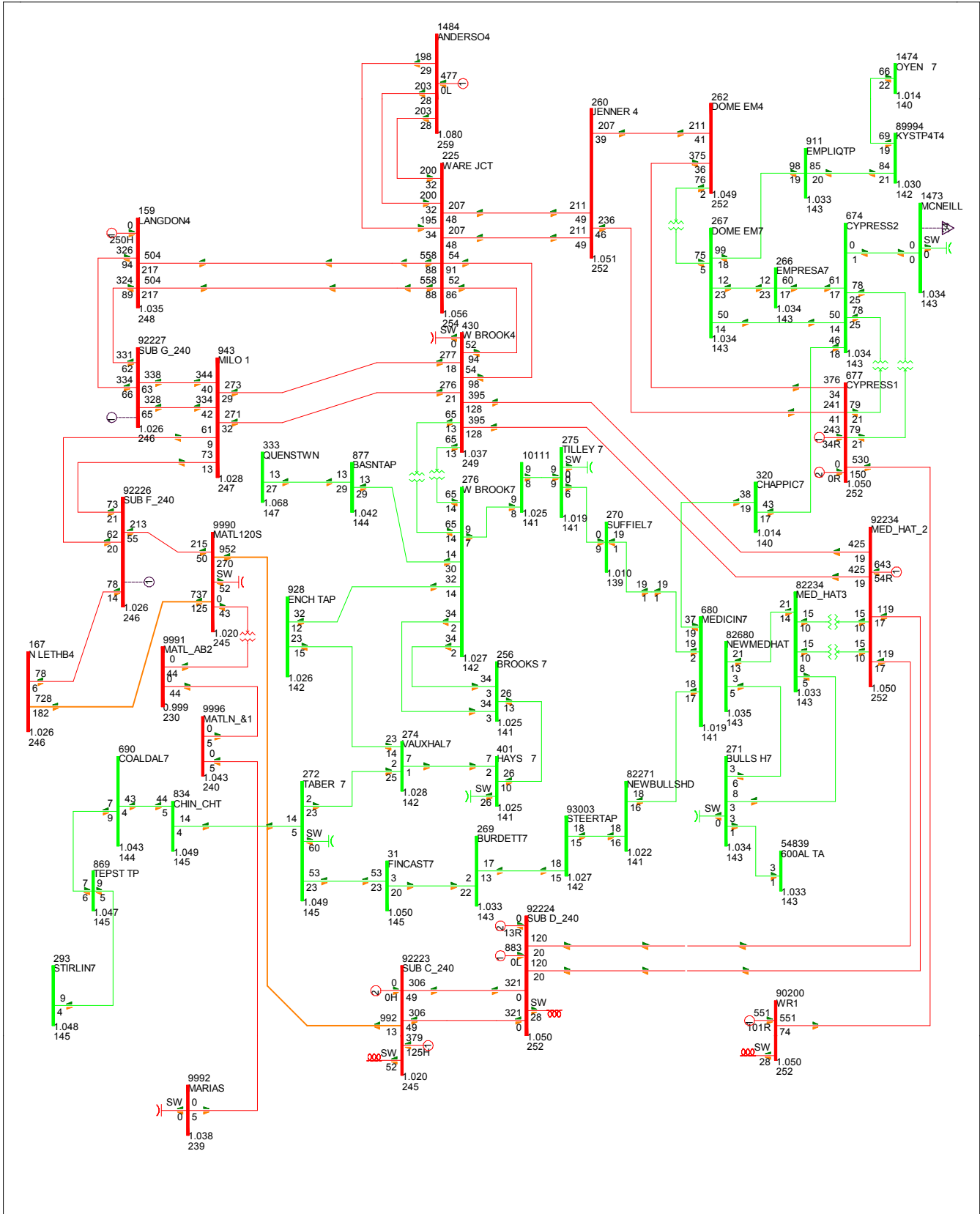


FIG 2017-1A-SL-E-9: GOOSELAKE TO SUB A 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 991 MW

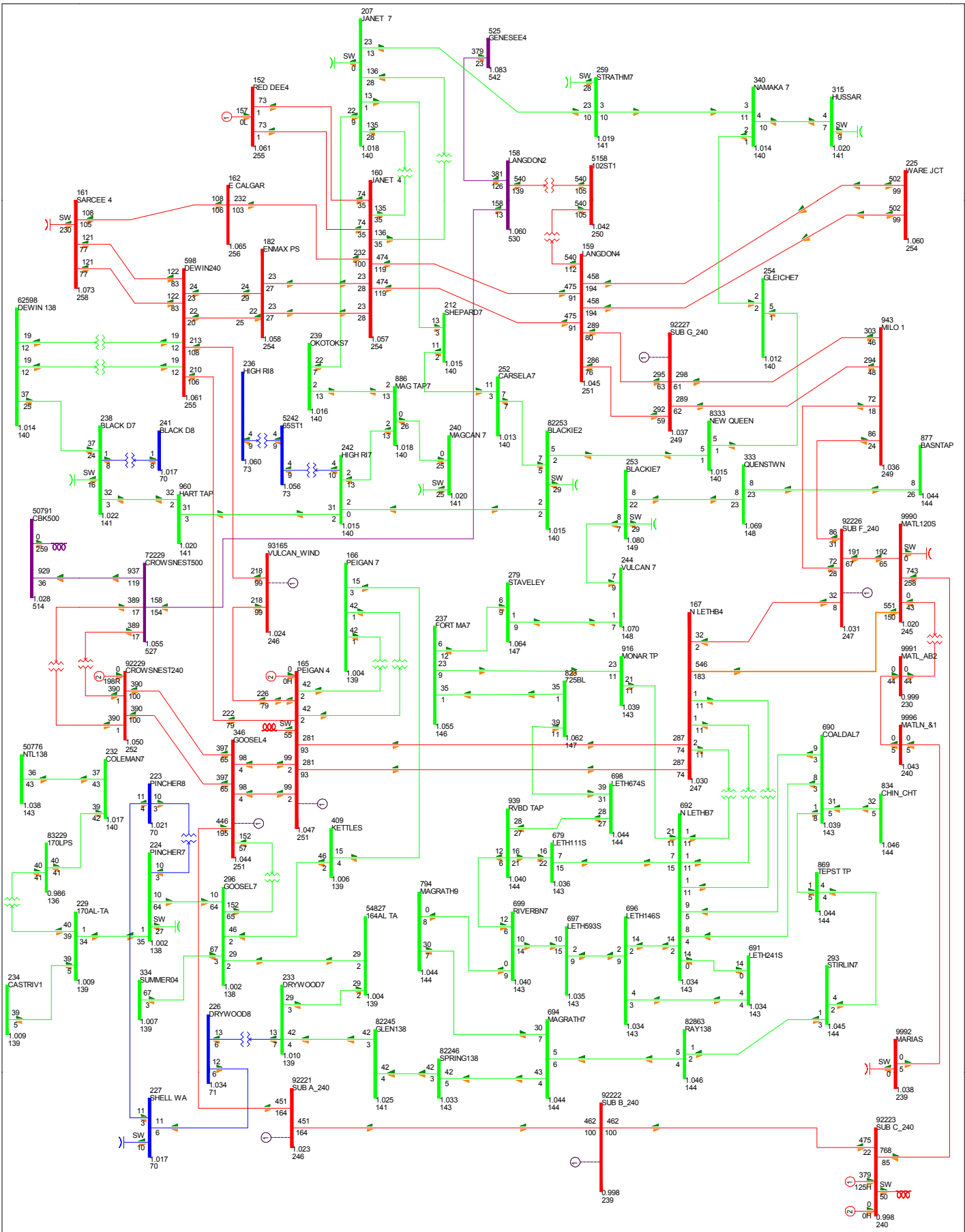


FIG 2017-1A-SL-E-10: WESTBROOKS TO MEDHAT2 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

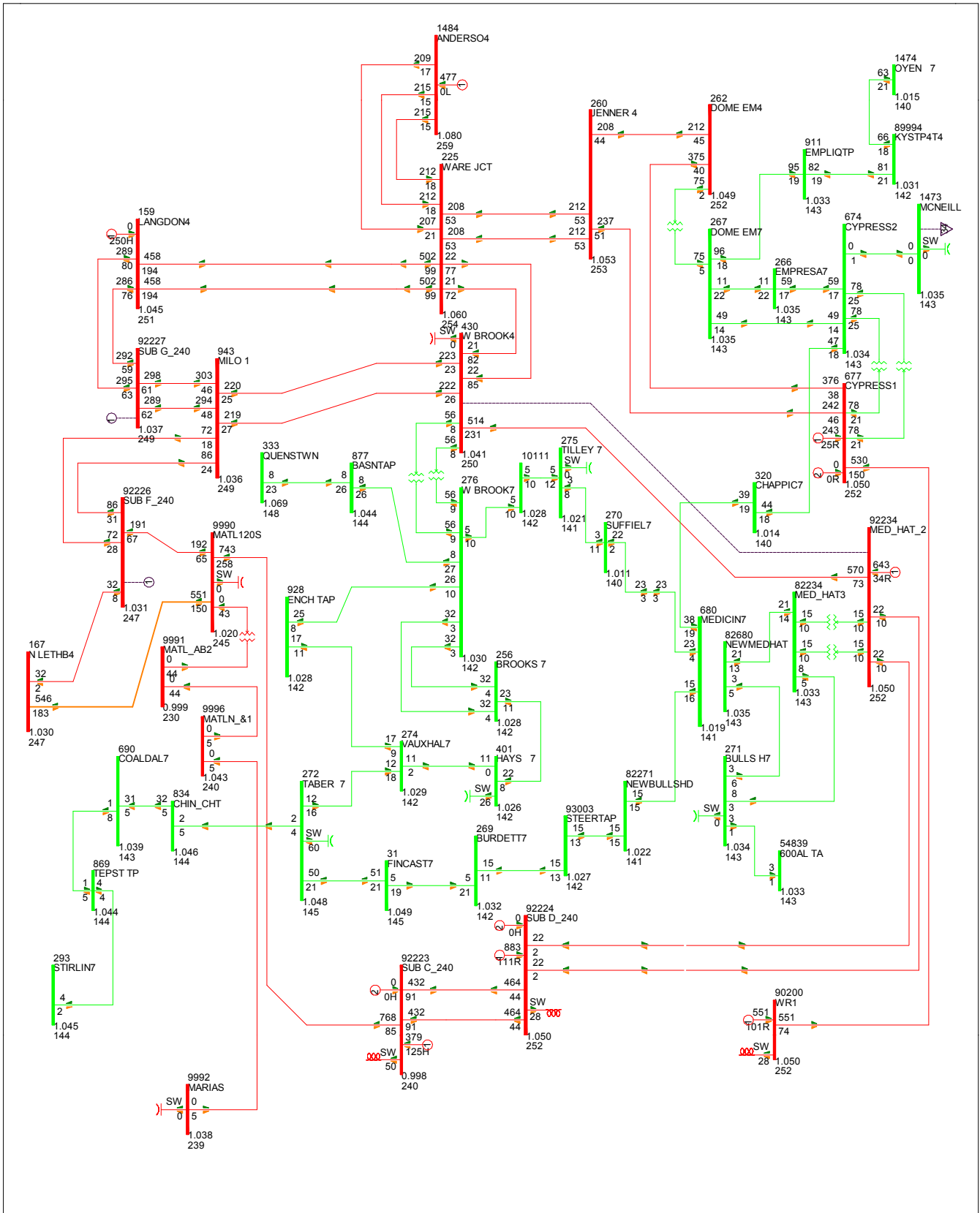


FIG 2017-1A-SL-E-11: WESTBROOKS TO MEDHAT2 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1002 MW

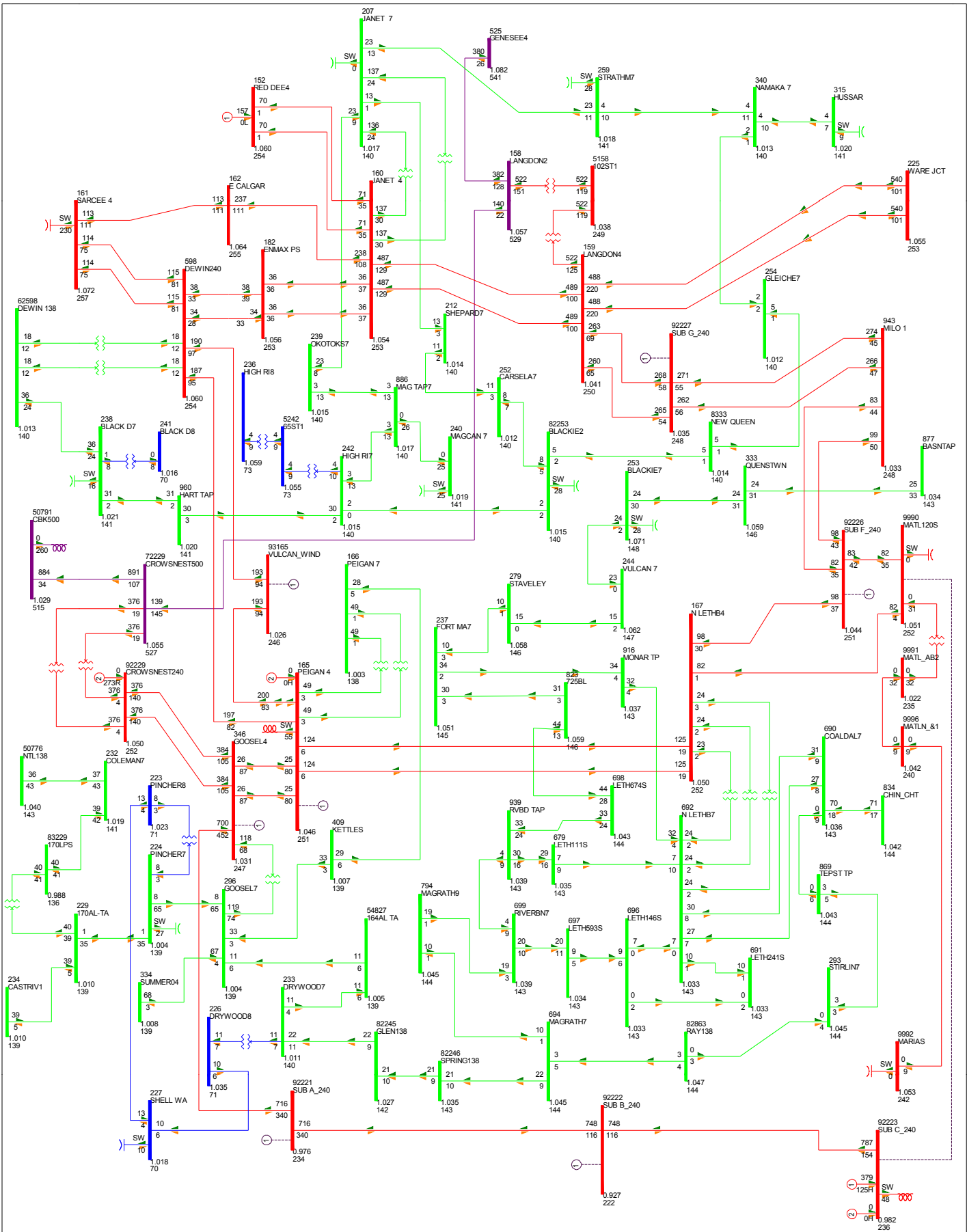


FIG 2017-1A-SL-E-12: SUB C TO MATL 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 955 MW

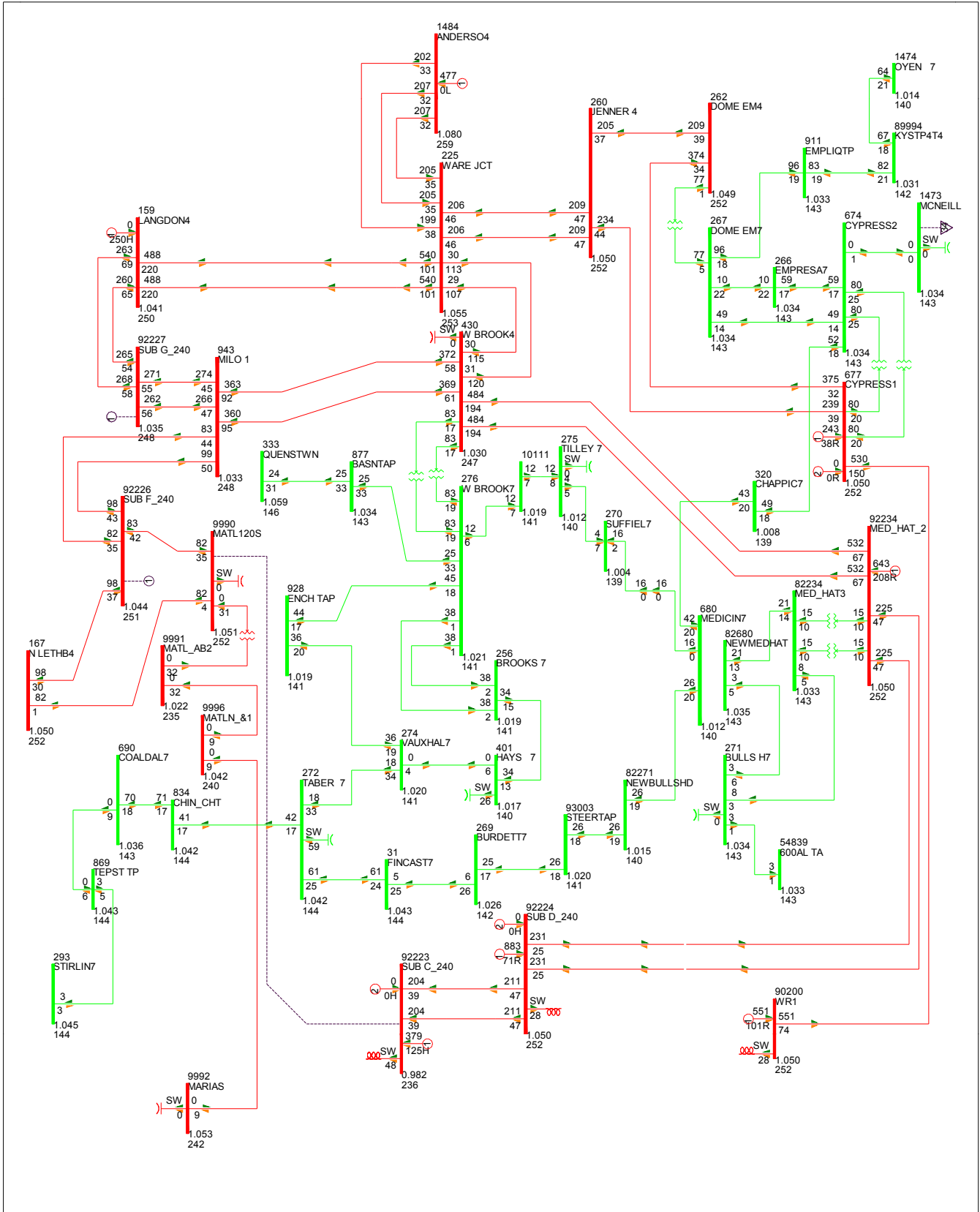


FIG 2017-1A-SL-E-13: SUB C TO MATL 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 955 MW

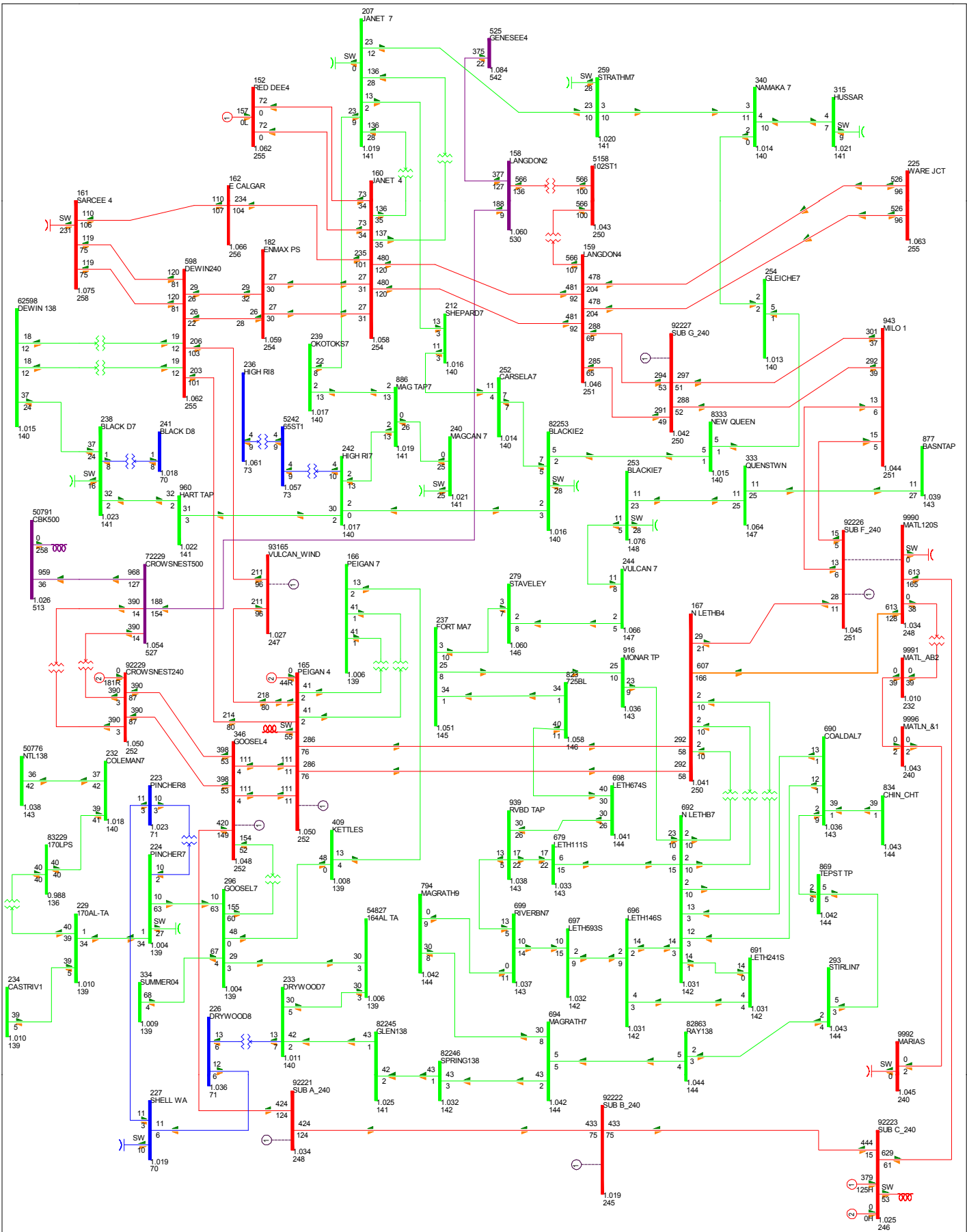


FIG 2017-1A-SL-E-14: SUB F TO MATL 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1036 MW

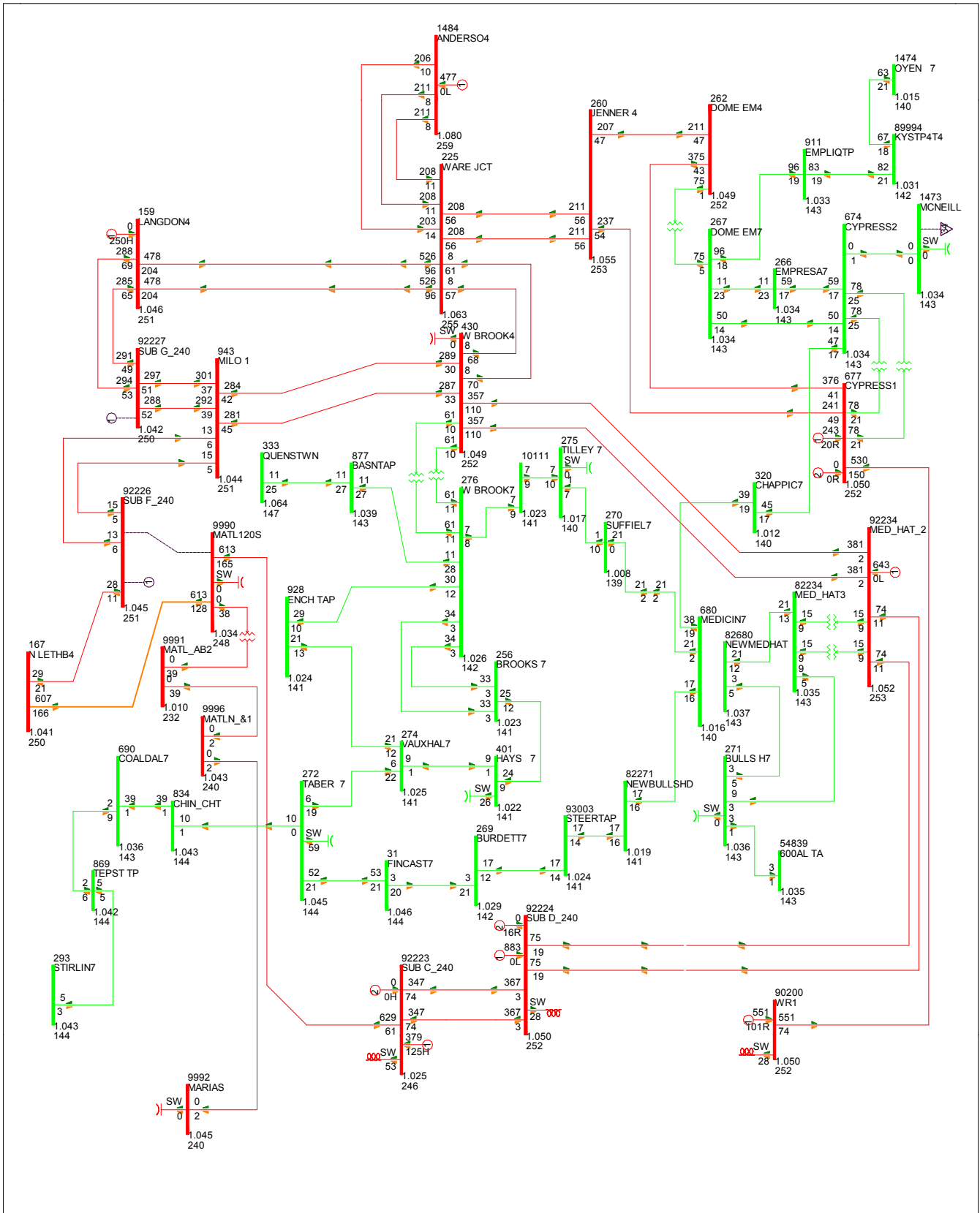


FIG 2017-1A-SL-E-15: SUB F TO MATL 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1036 MW

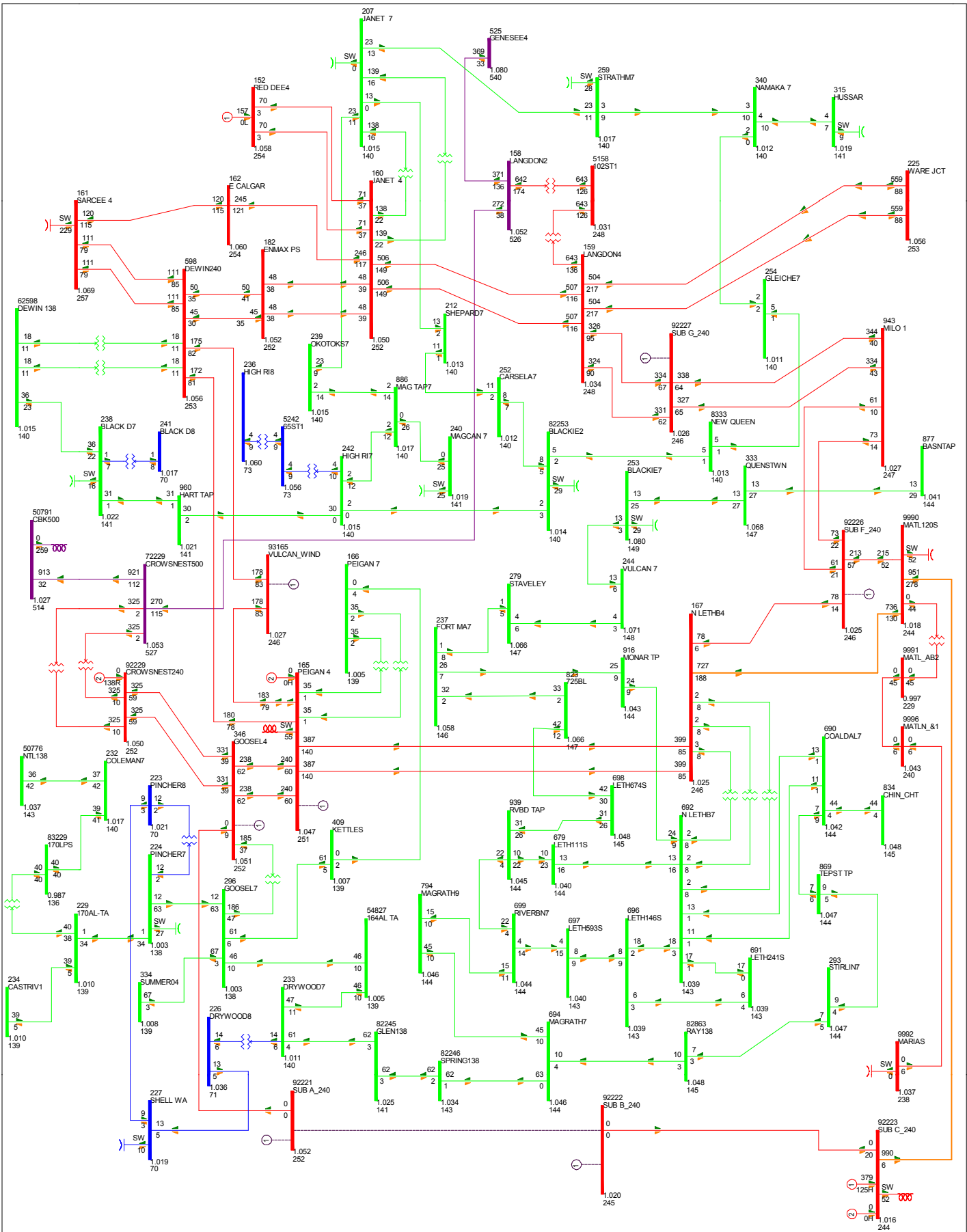


FIG 2017-1A-SL-E-16: SUB A TO SUB B 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 991 MW

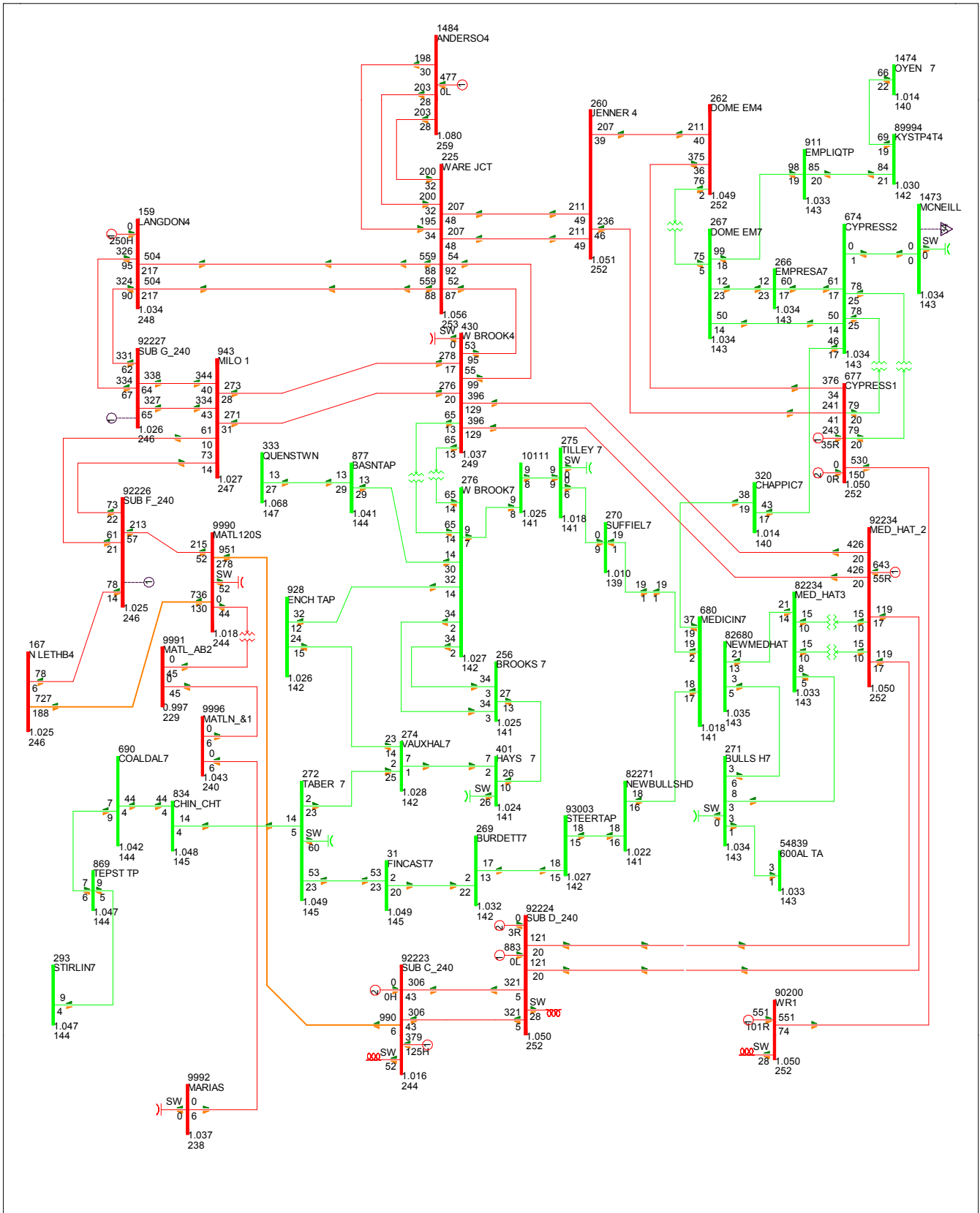


FIG 2017-1A-SL-E-17: SUB A TO SUB B 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 991 MW

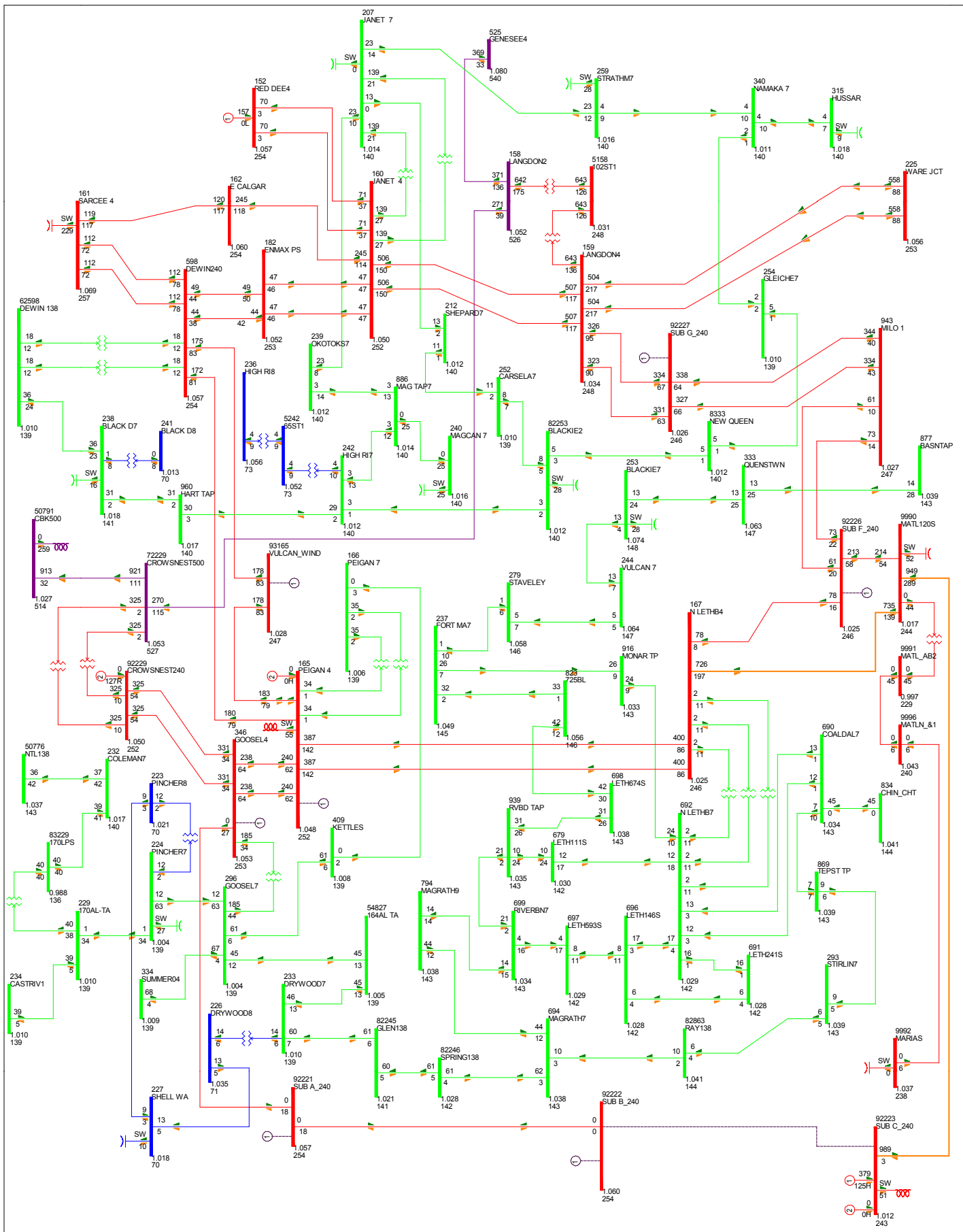


FIG 2017-1A-SL-E-18: SUB B TO SUB C 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 990 MW

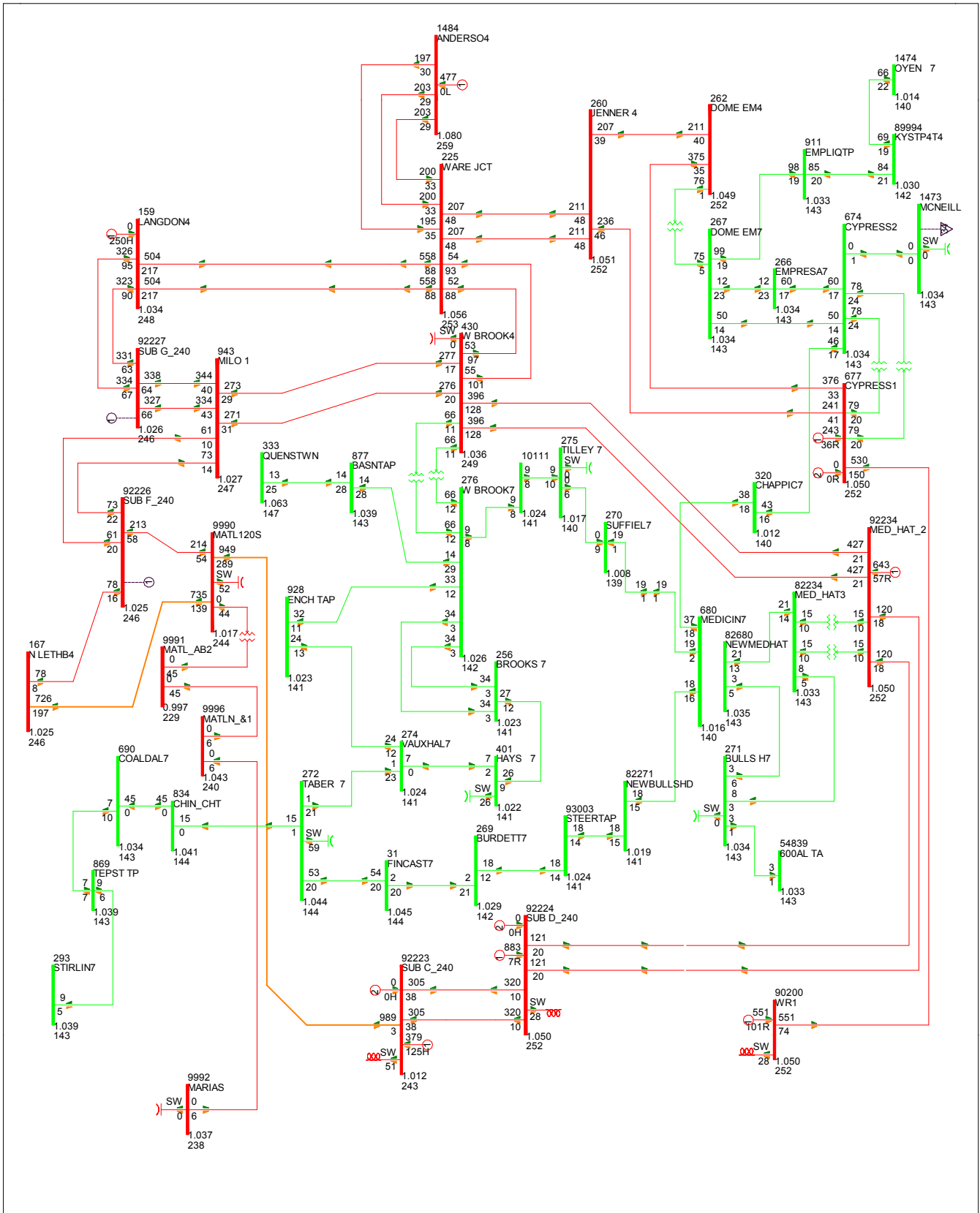


FIG 2017-1A-SL-E-19: SUB B TO SUB C 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 990 MW

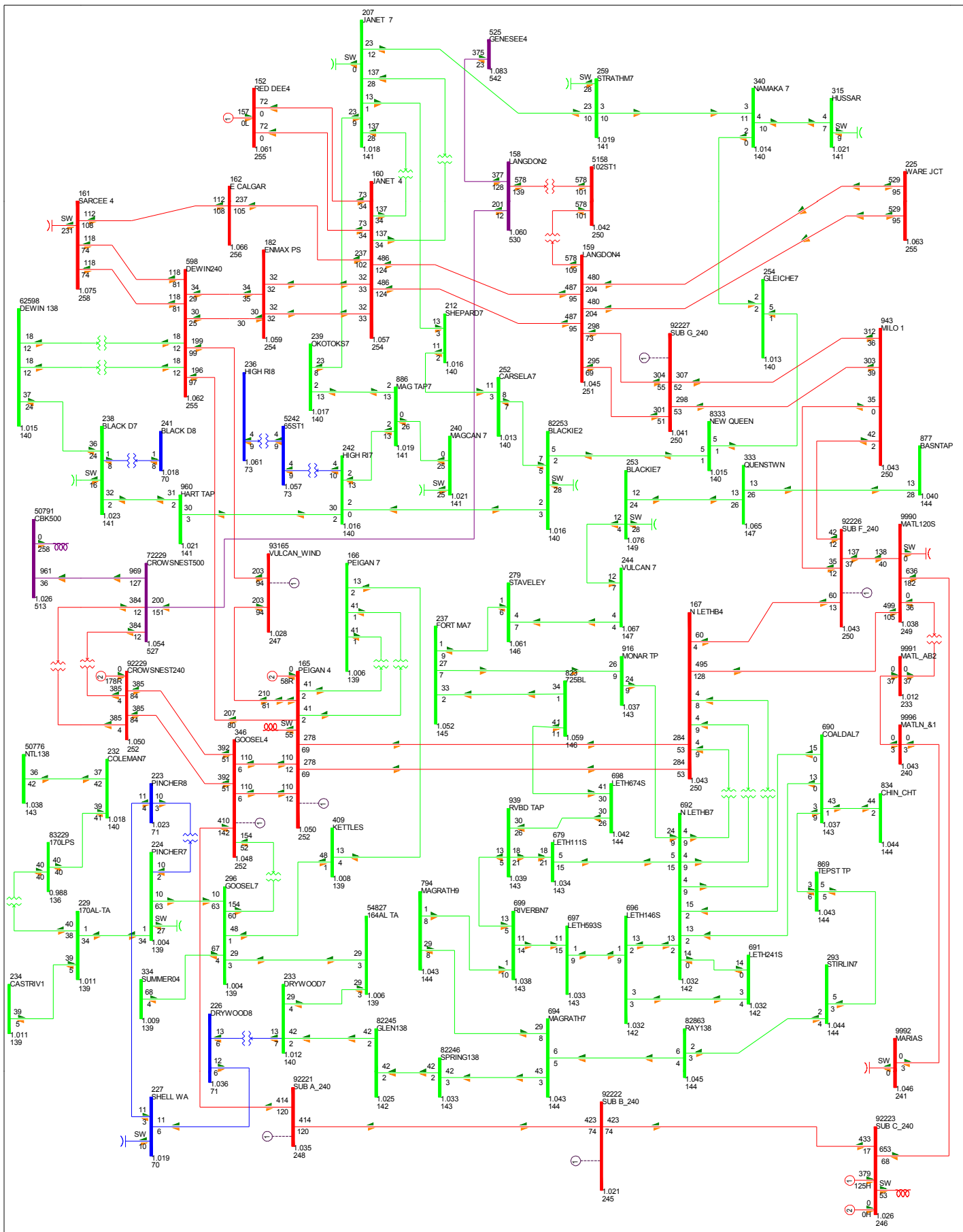


FIG 2017-1A-SL-E-20: DOME EMPRESS TO CYPRESS 138 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0% RATE A
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1038 MW

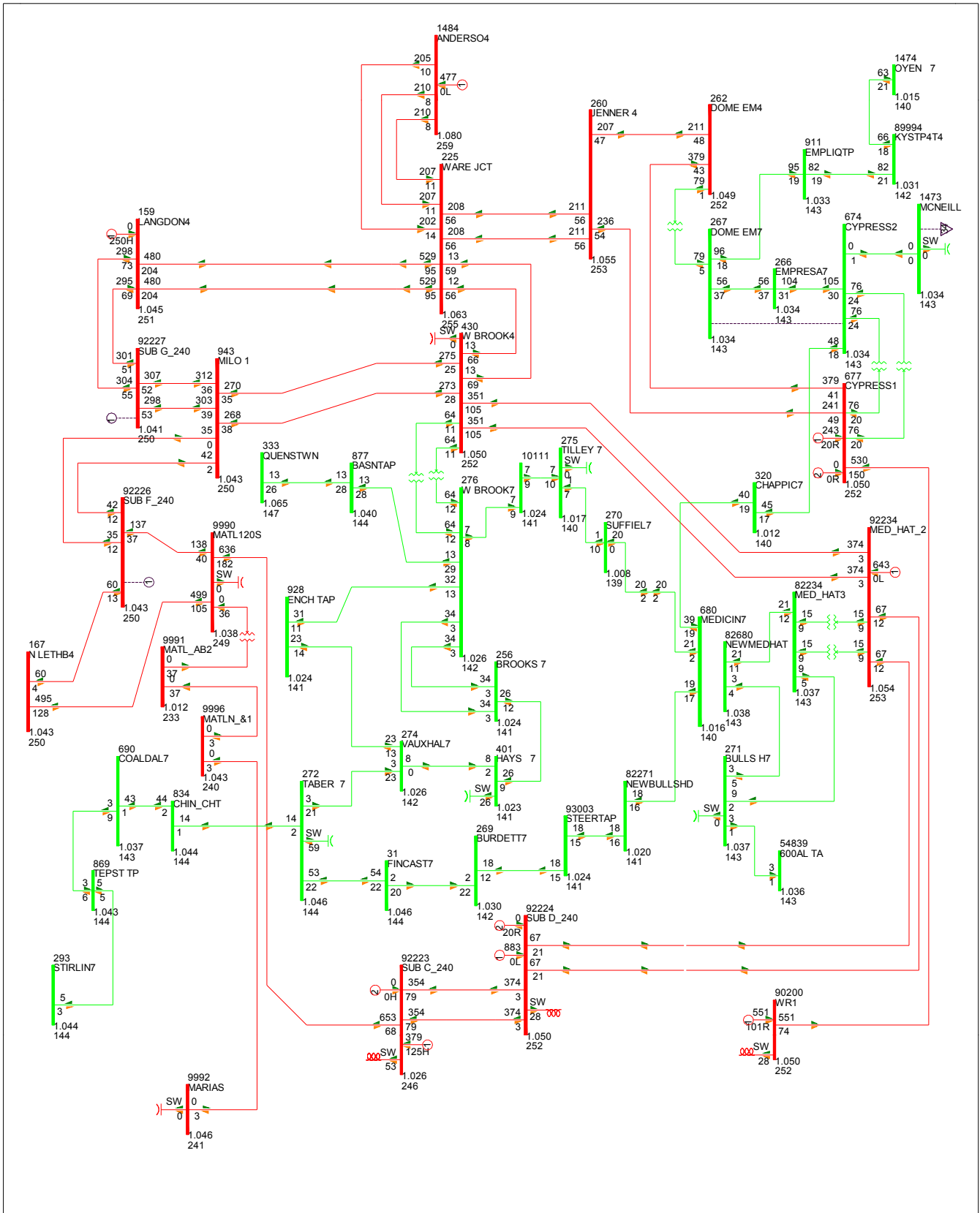


FIG 2017-1A-SL-E-21: DOME EMPRESS TO CYPRESS 138 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1038 MW

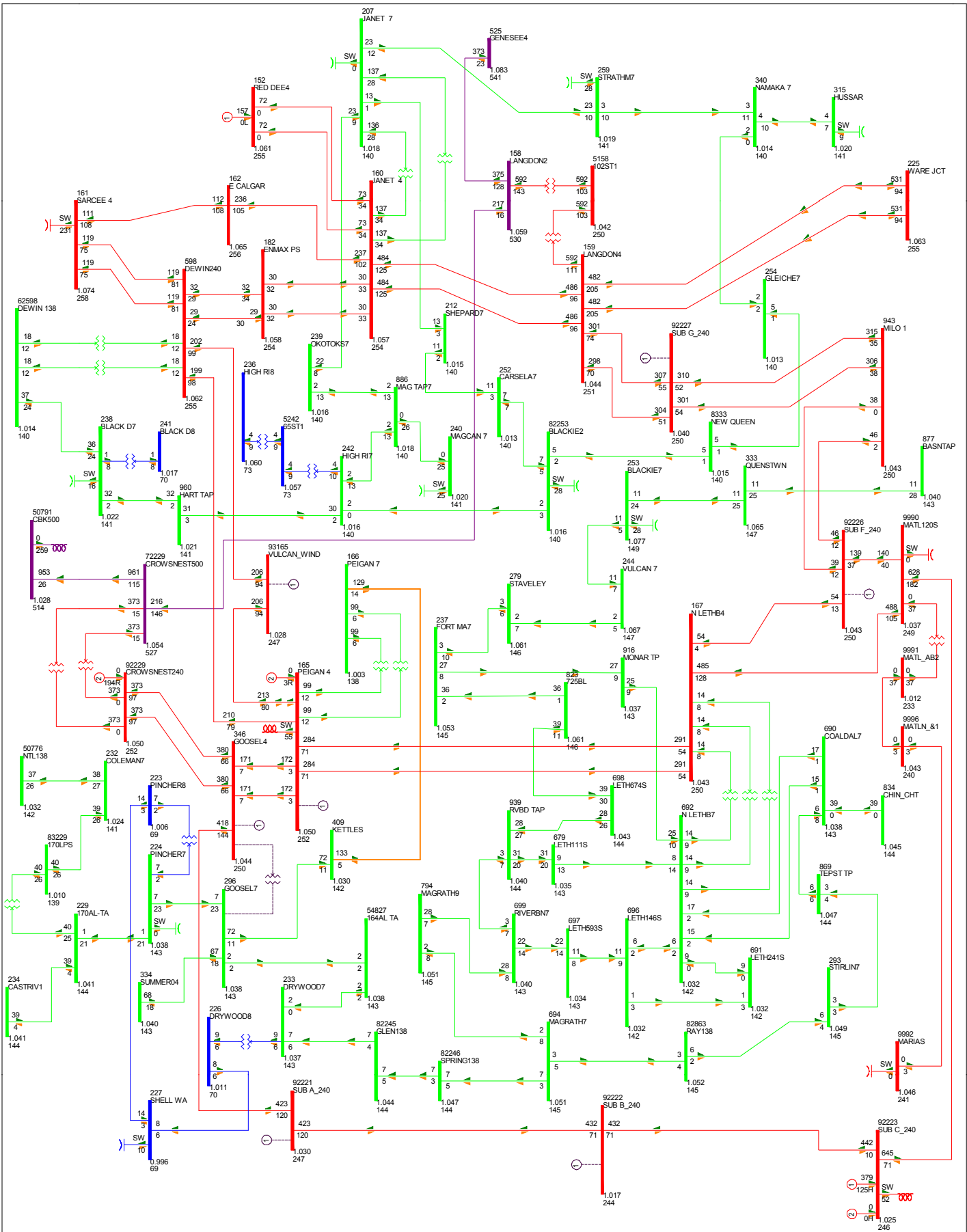


FIG 2017-1A-SL-E-22: GOOSELAKE 240/138 KV XMER
 EAST WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 19:27

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1031 MW

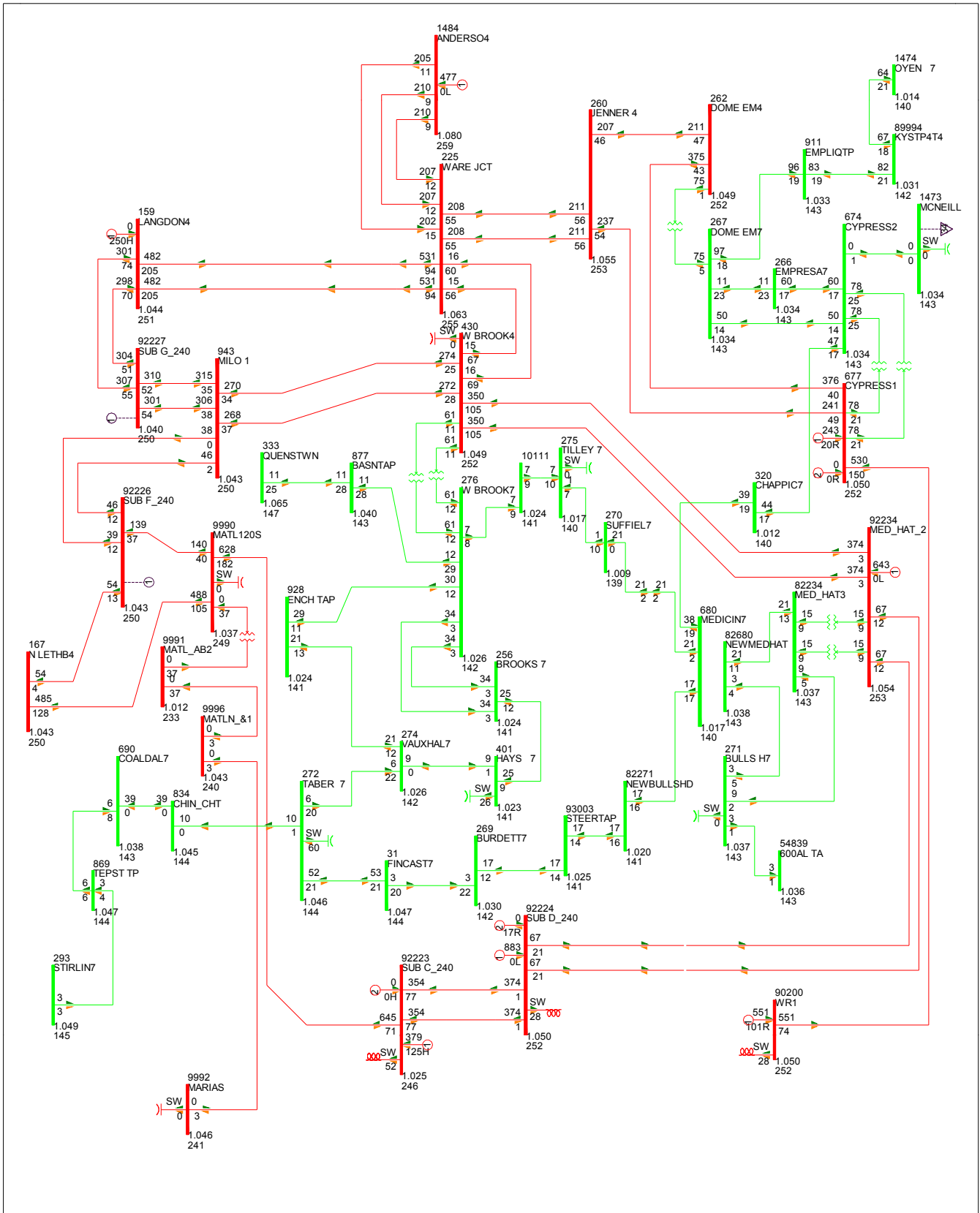


FIG 2017-1A-SL-E-23: GOOSELAKE 240/138 KV XMER
 EAST WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 19:27

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1031 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3810.0 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS FUTURE WIND GEN. IN SOUTH 2699.0 MW

FORT MCMURRAY GEN.

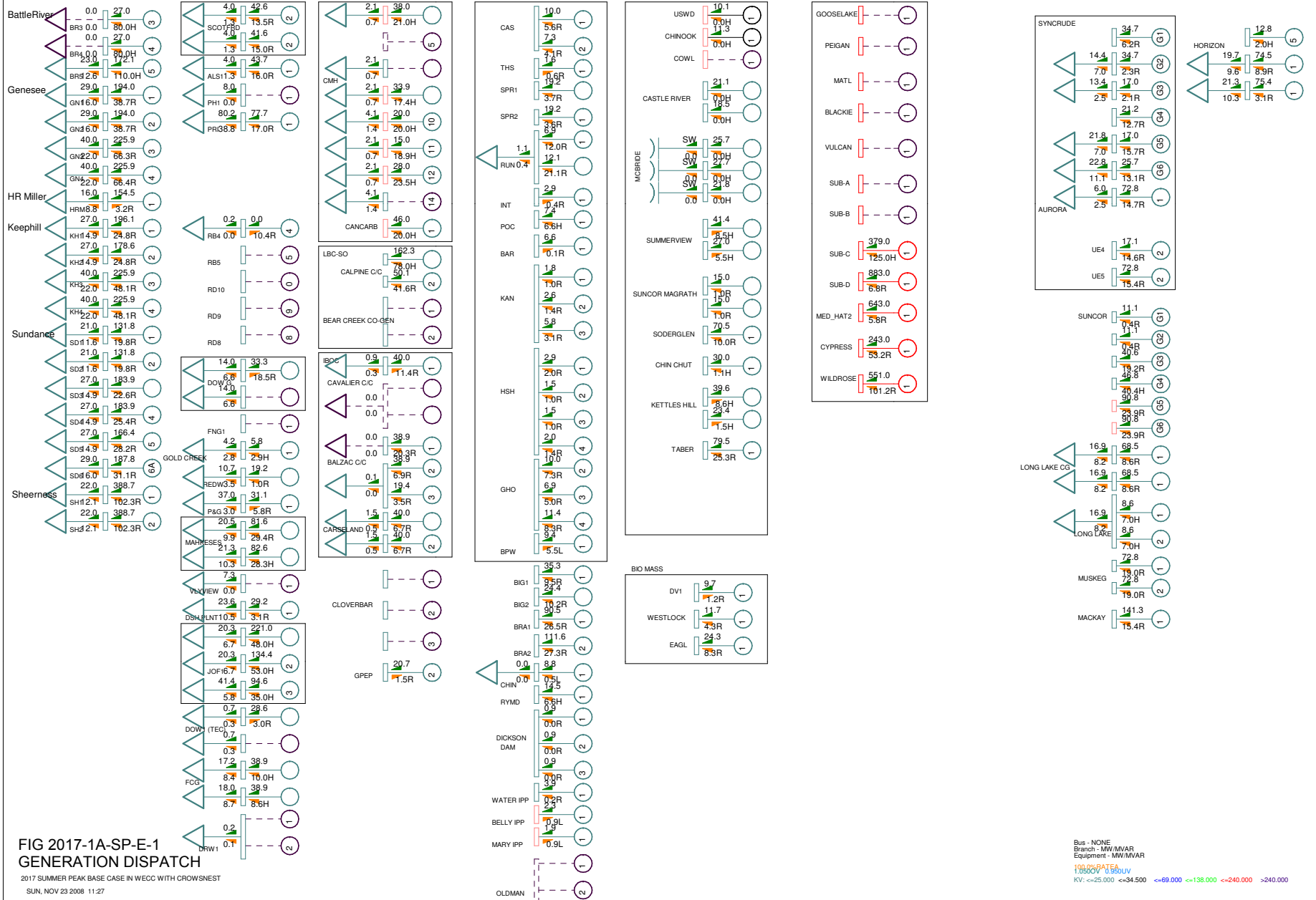


FIG 2017-1A-SP-E-1
GENERATION DISPATCH

2017 SUMMER PEAK BASE CASE IN WECC WITH CROWSNEST
SUN, NOV 23 2008 11:27

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
T0100:DATEA
T0100:V 0.9500V
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

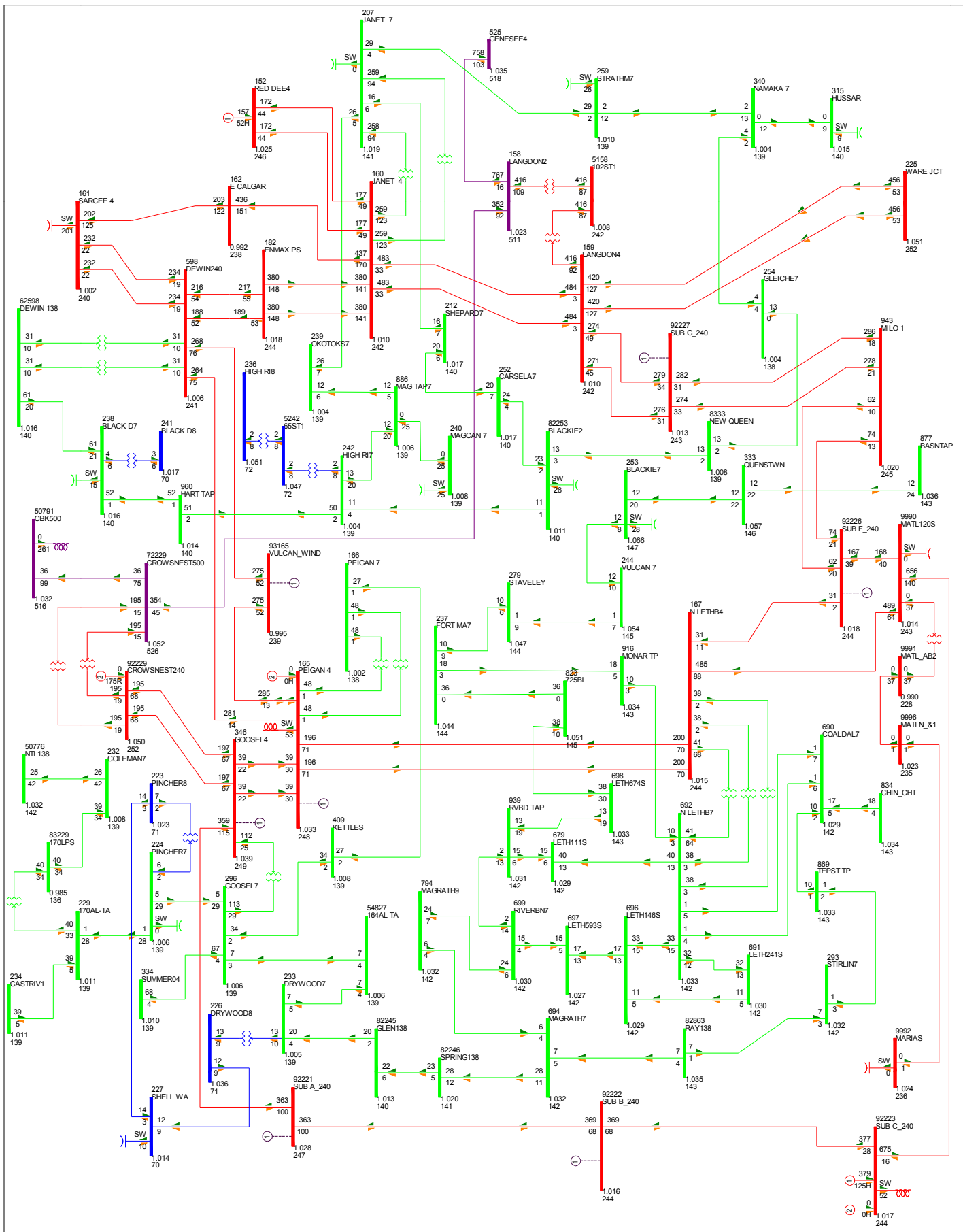


FIG 2017-1A-SP-E-2: N-0 CONDITION

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 39 MW

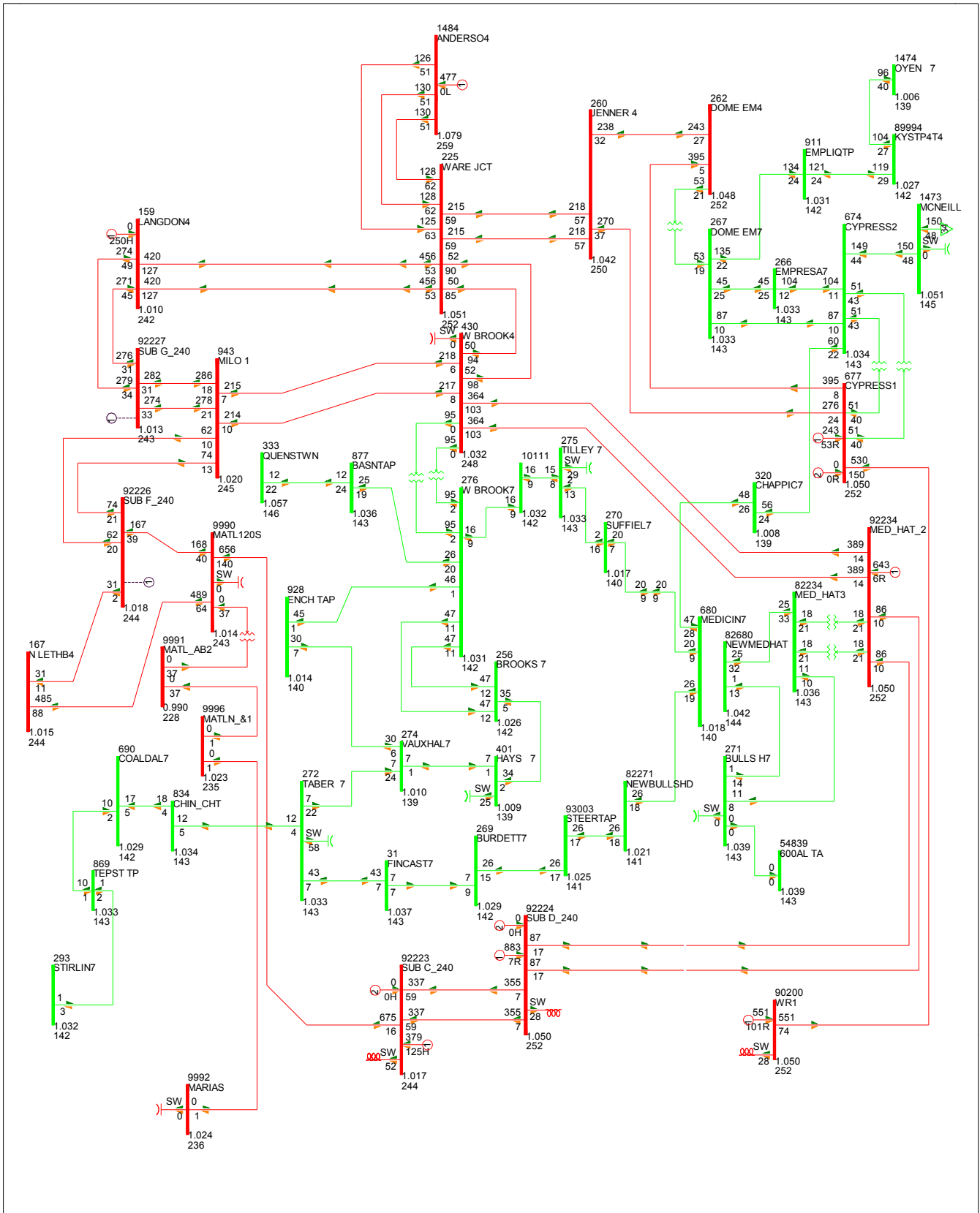


FIG 2017-1A-SP-E-3: N-0 CONDITION
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 39 MW

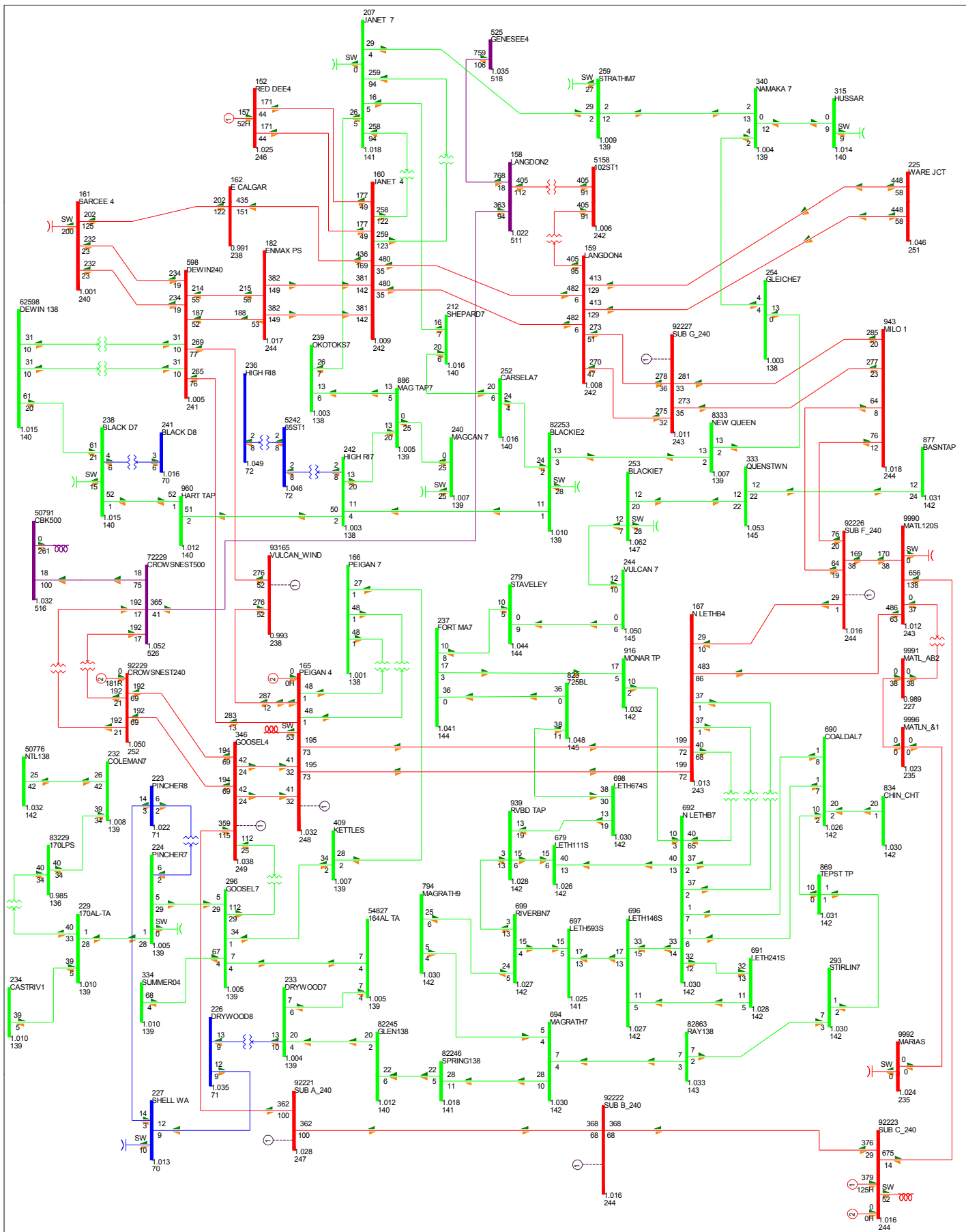


FIG 2017-1A-SP-E-4: JENNER TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South West System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 20 MW

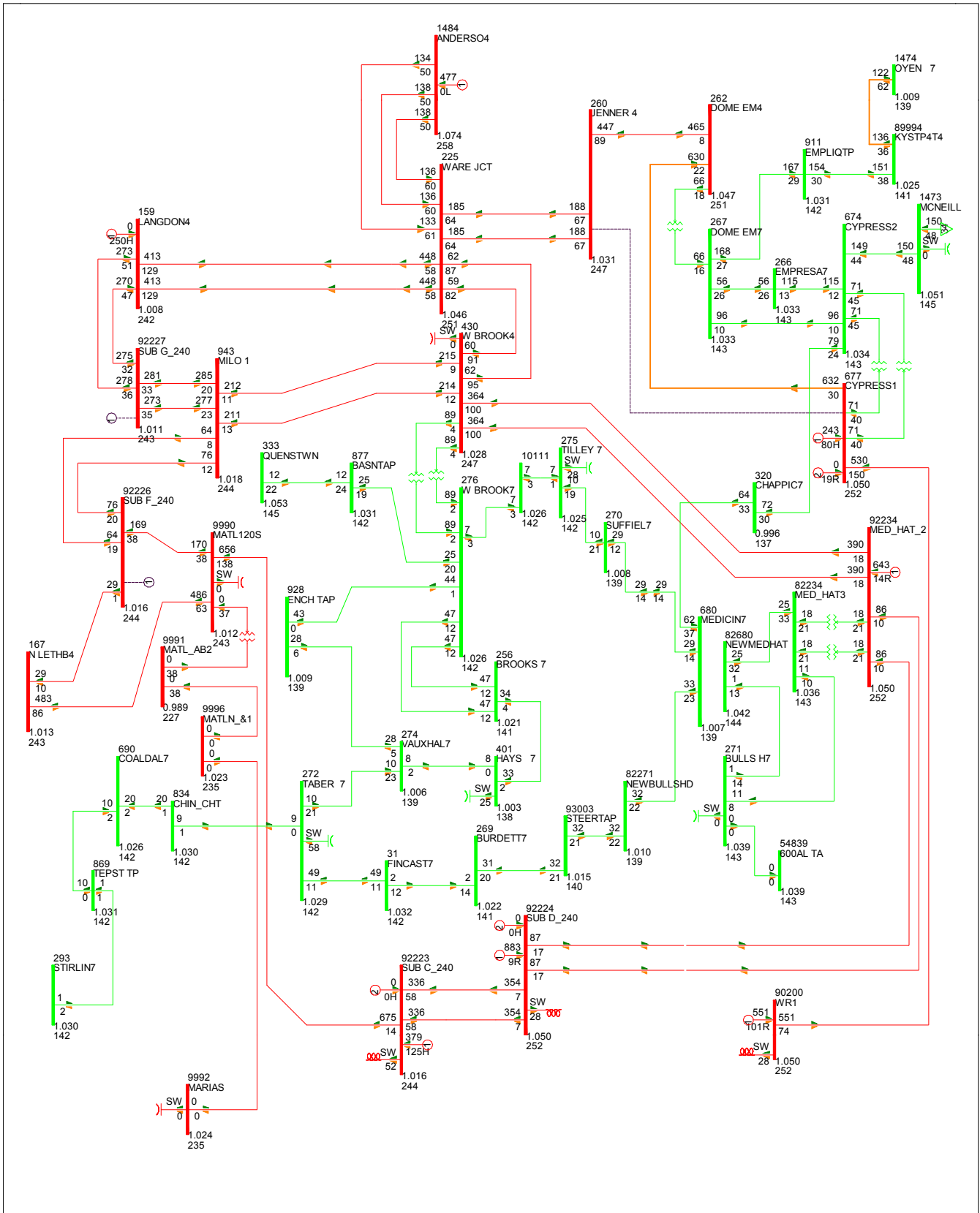


FIG 2017-1A-SP-E-5: JENNER TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:32

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 20 MW

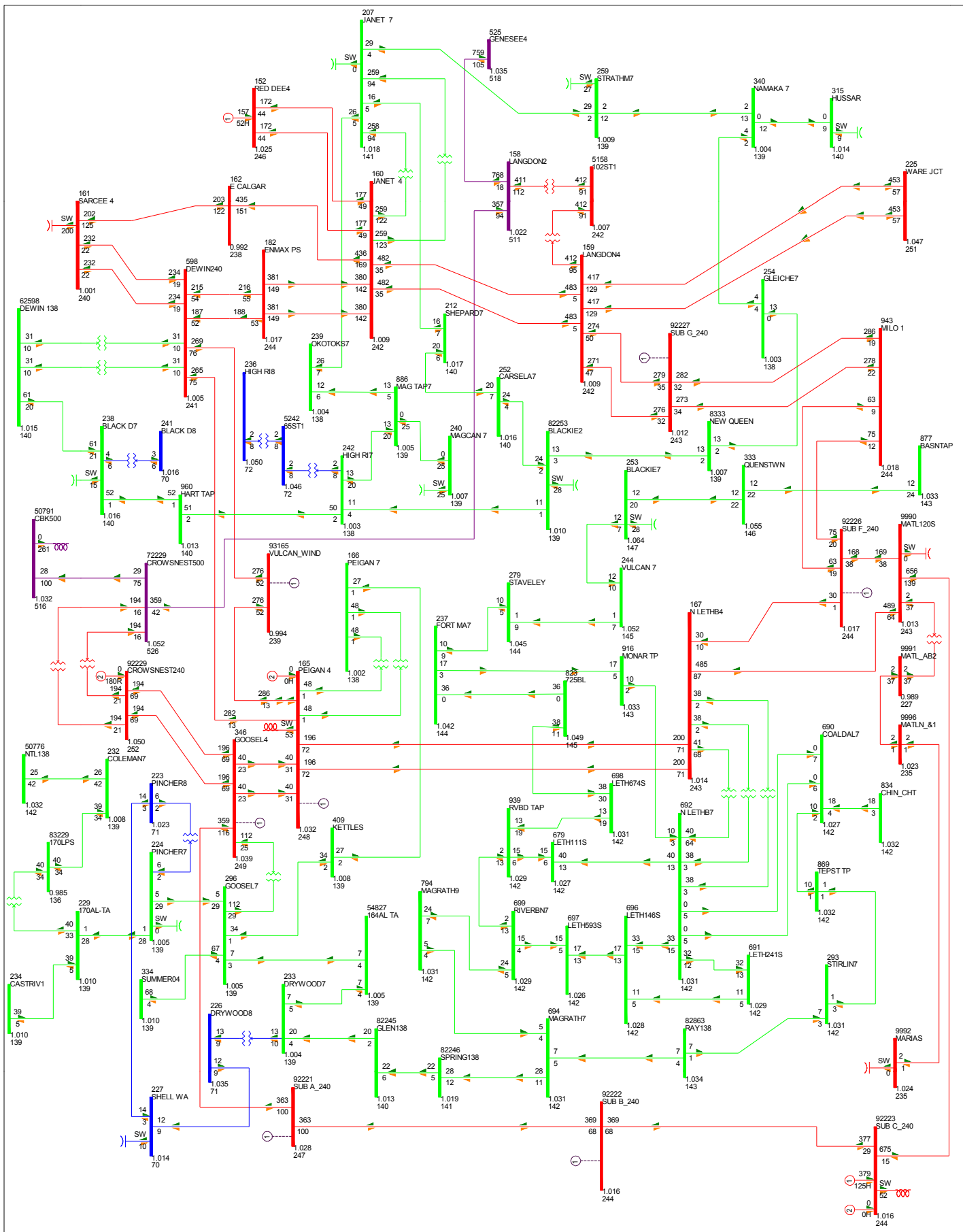


FIG 2017-1A-SP-E-6: DOME EMPRESS TO CYPRESS 240 KV

EAST WIND SCENARIO

2017 South West System TUE, DEC 02 2008 19:28

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 31 MW

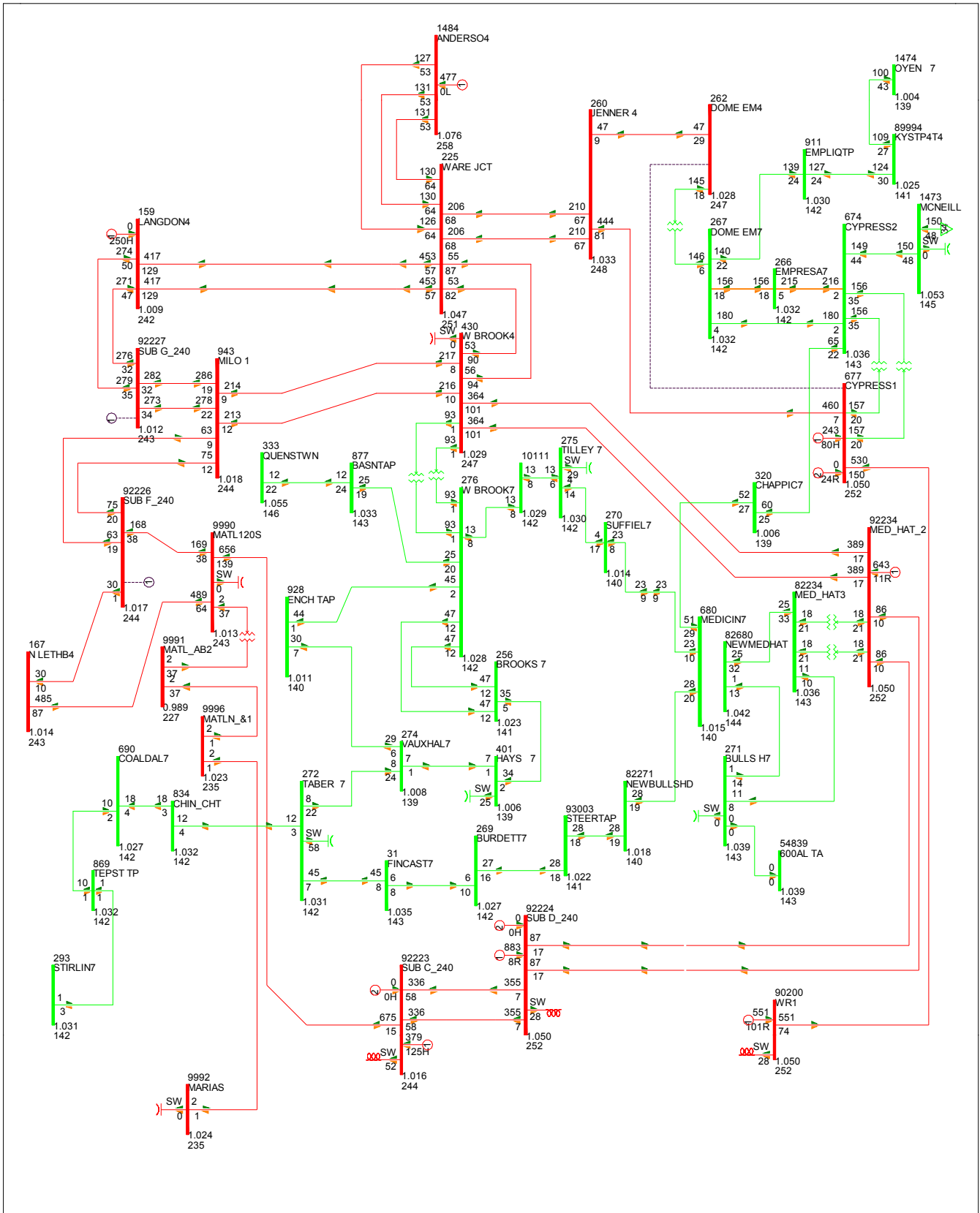


FIG 2017-1A-SP-E-7: DOME EMPRESS TO CYPRESS 240 KV
 EAST WIND SCENARIO
 2017 South East System TUE, DEC 02 2008 19:28

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 31 MW

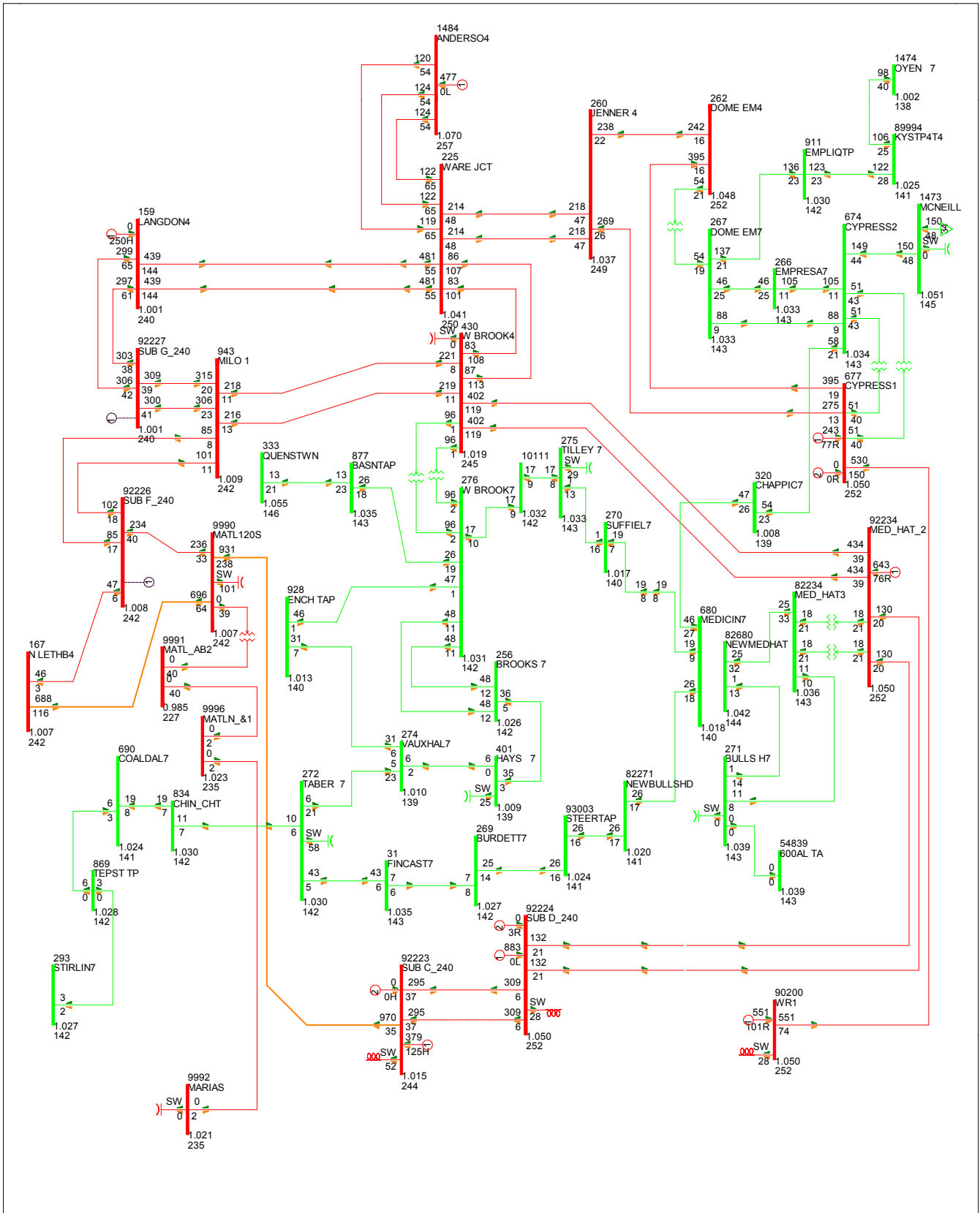


FIG 2017-1A-SP-E-9: GOOSELAKE TO SUB A 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -0 MW

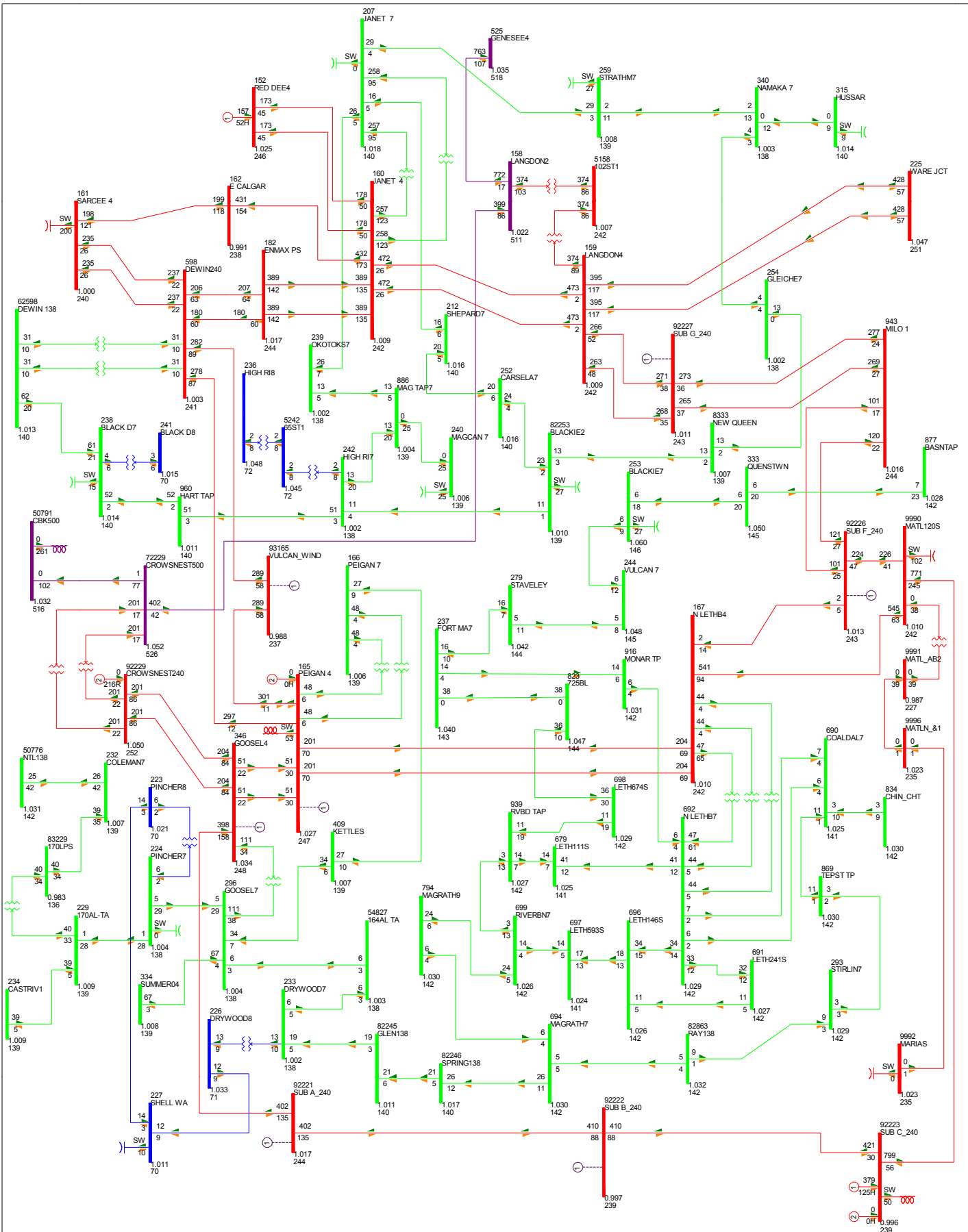


FIG 2017-1A-SP-E-10: WESTBROOKS TO MEDHAT2 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1 MW

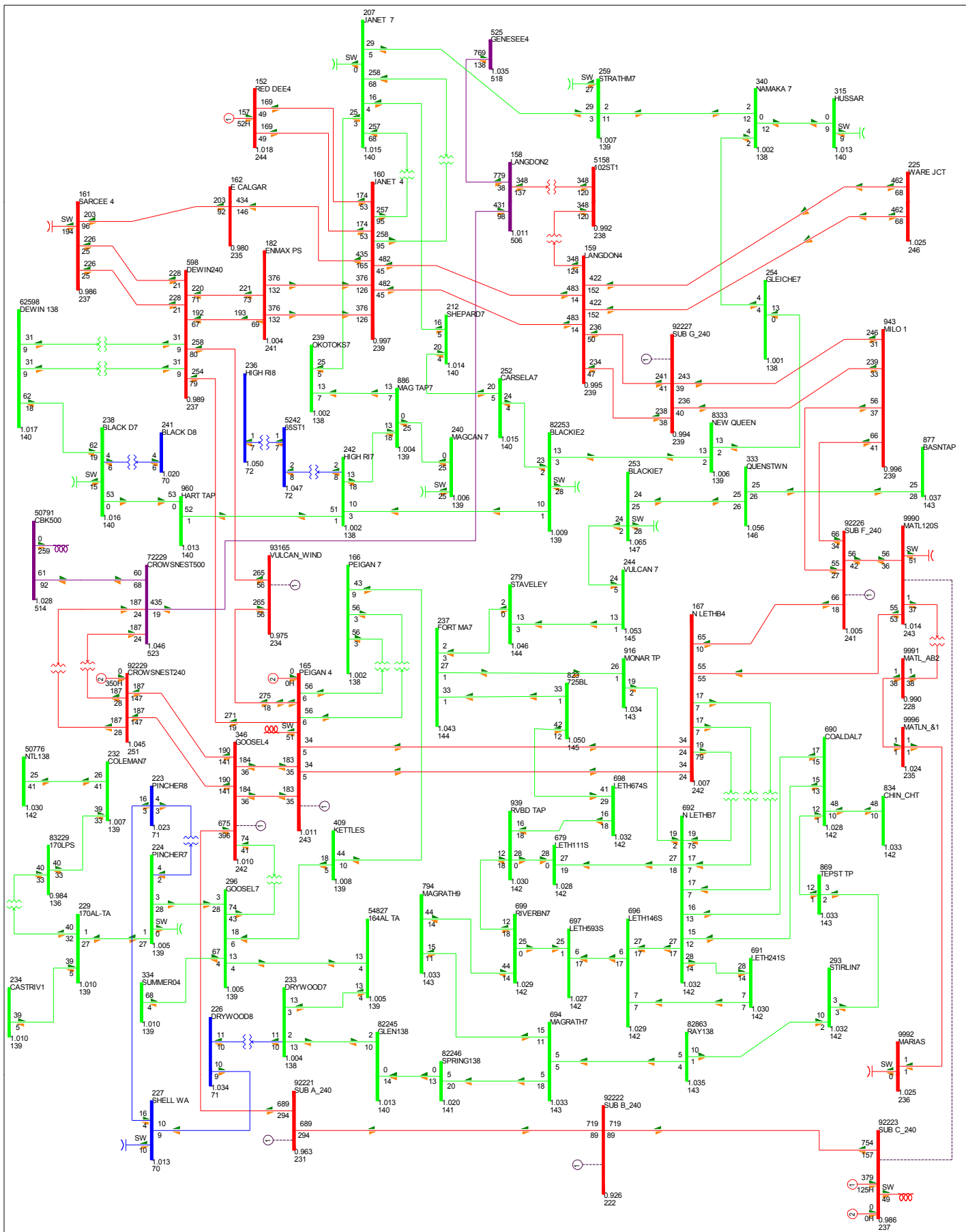


FIG 2017-1A-SP-E-12: SUB C TO MATL 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -63 MW

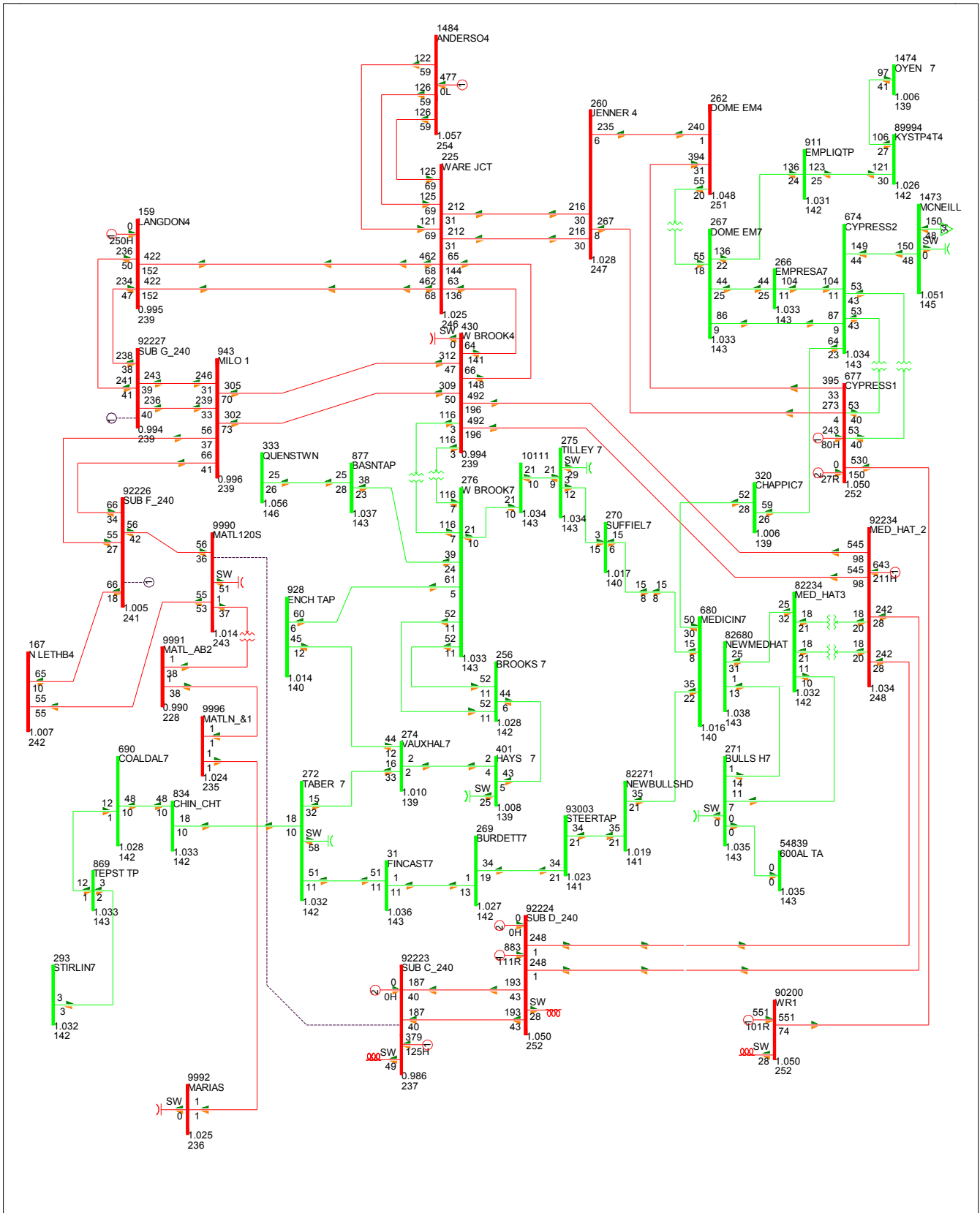


FIG 2017-1A-SP-E-13: SUB C TO MATL 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -63 MW

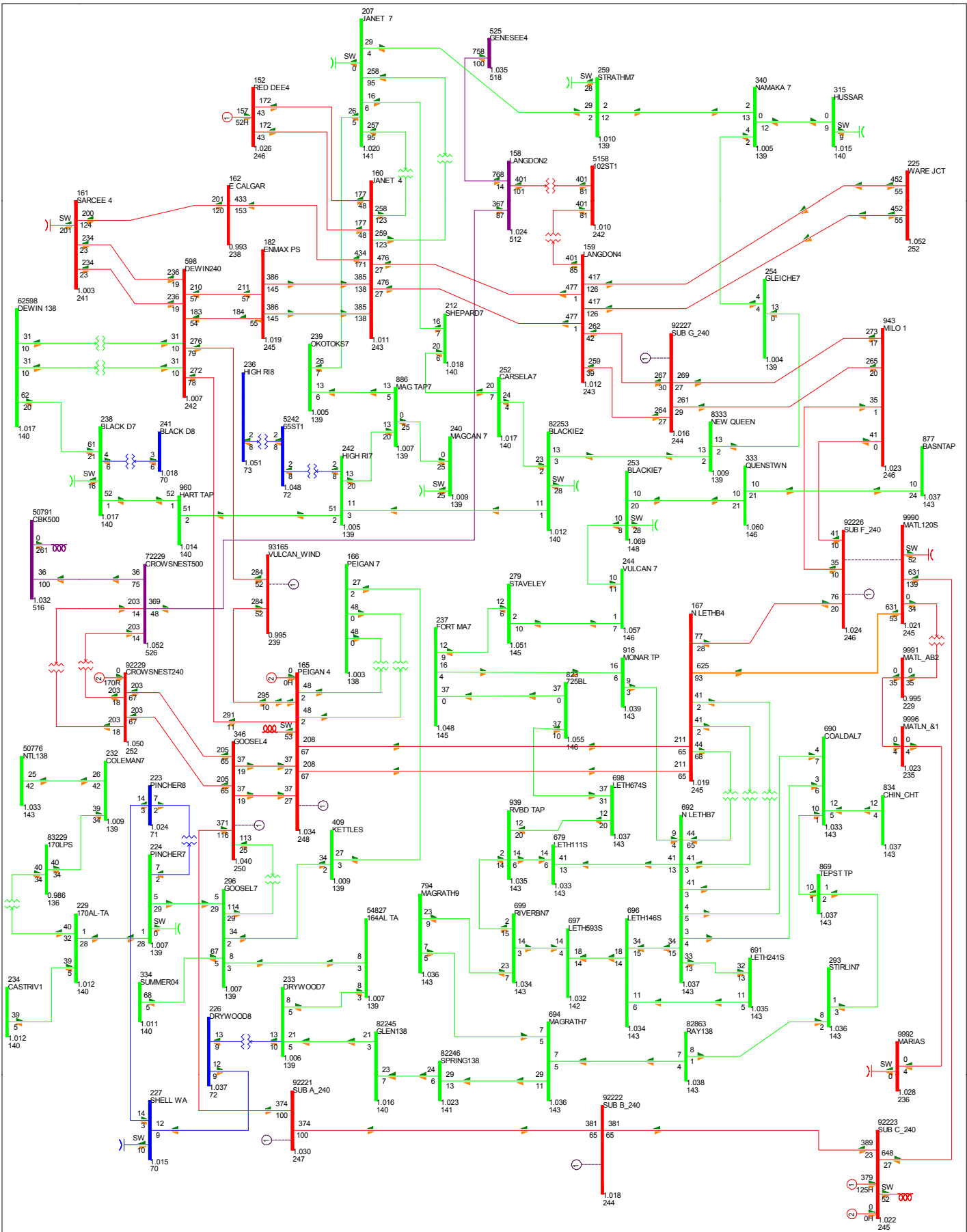


FIG 2017-1A-SP-E-14: SUB F TO MATL 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0% RATE A

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 39 MW

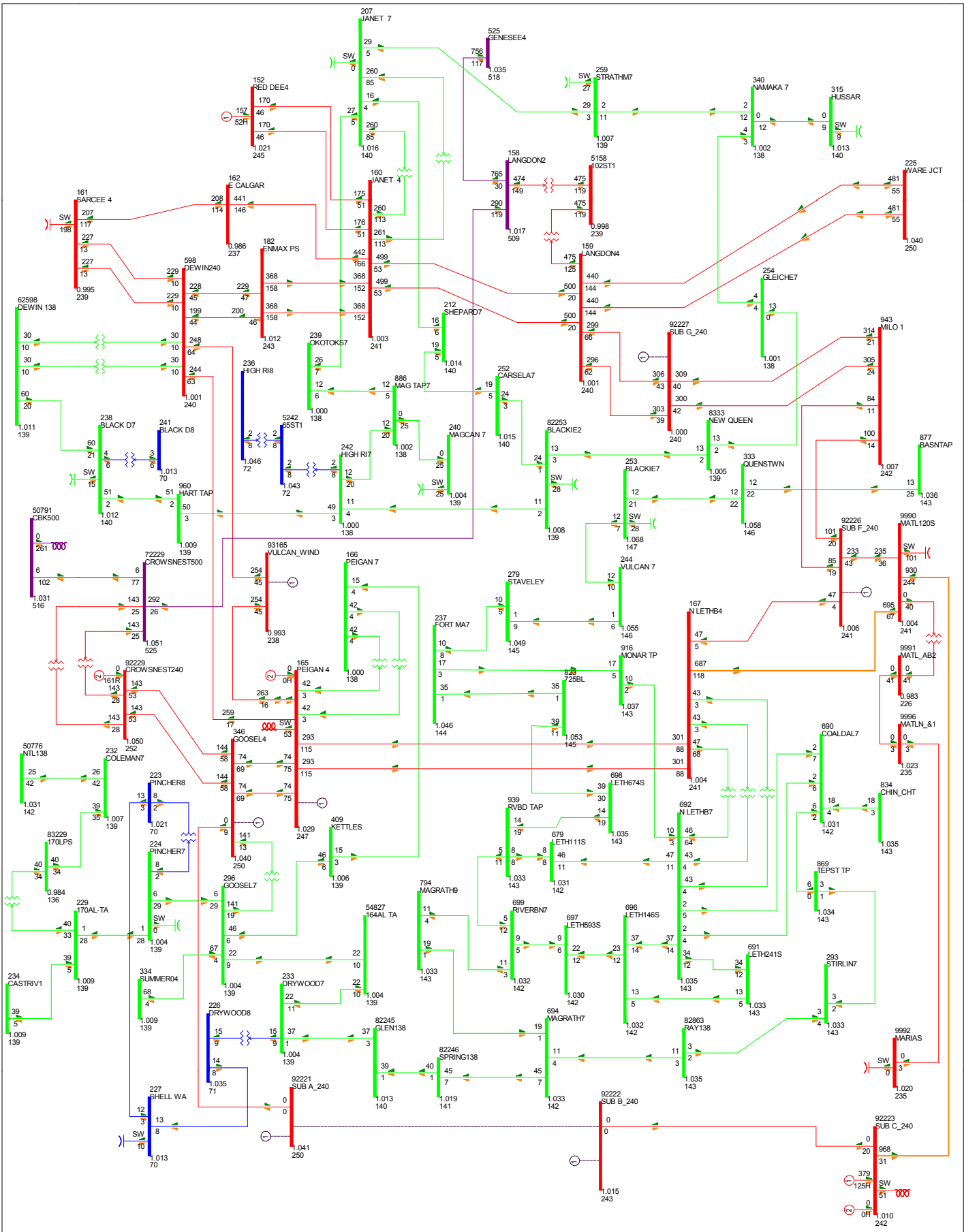


FIG 2017-1A-SP-E-16: SUB A TO SUB B 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -1 MW

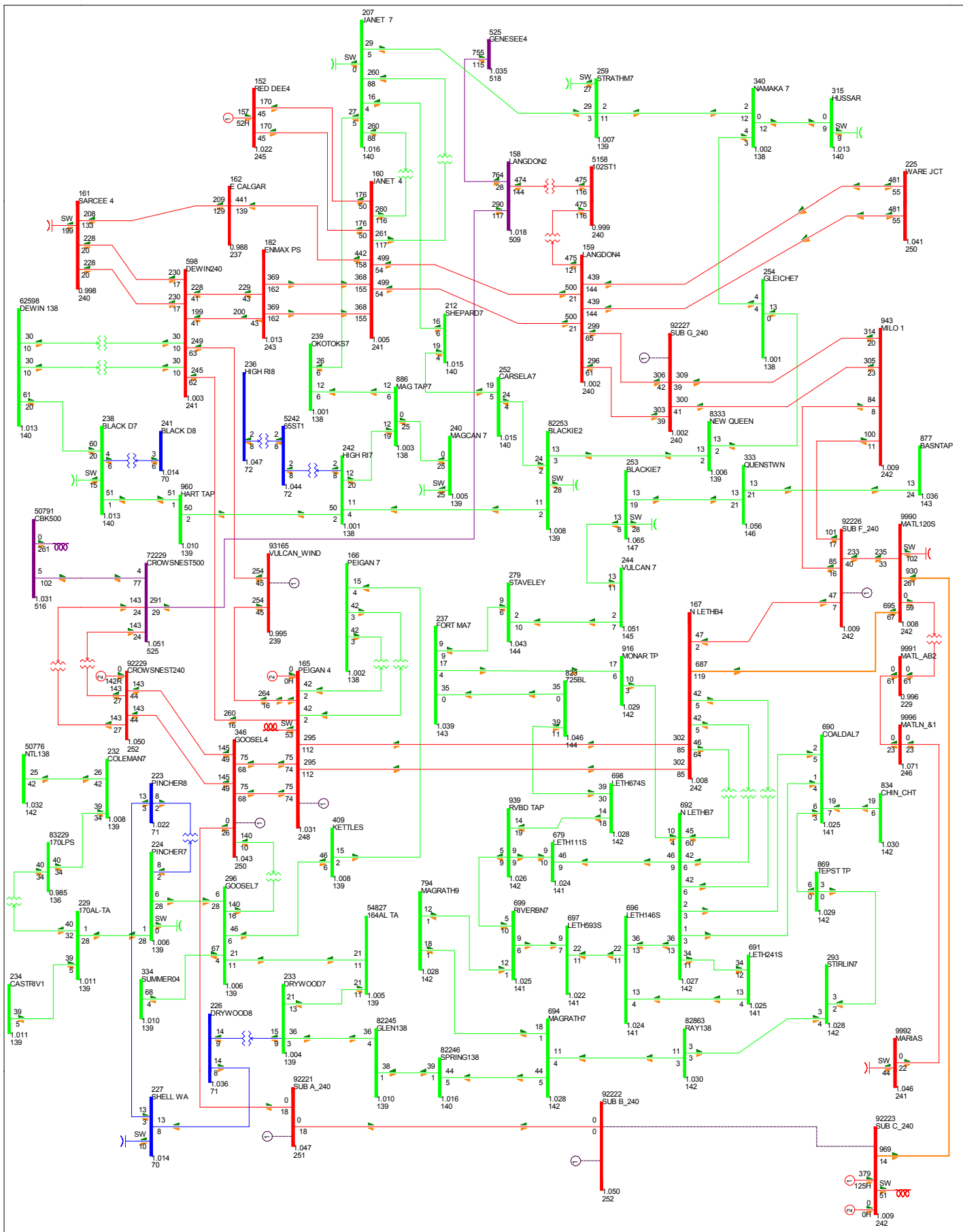


FIG 2017-1A-SP-E-18: SUB B TO SUB C 240 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 0 MW

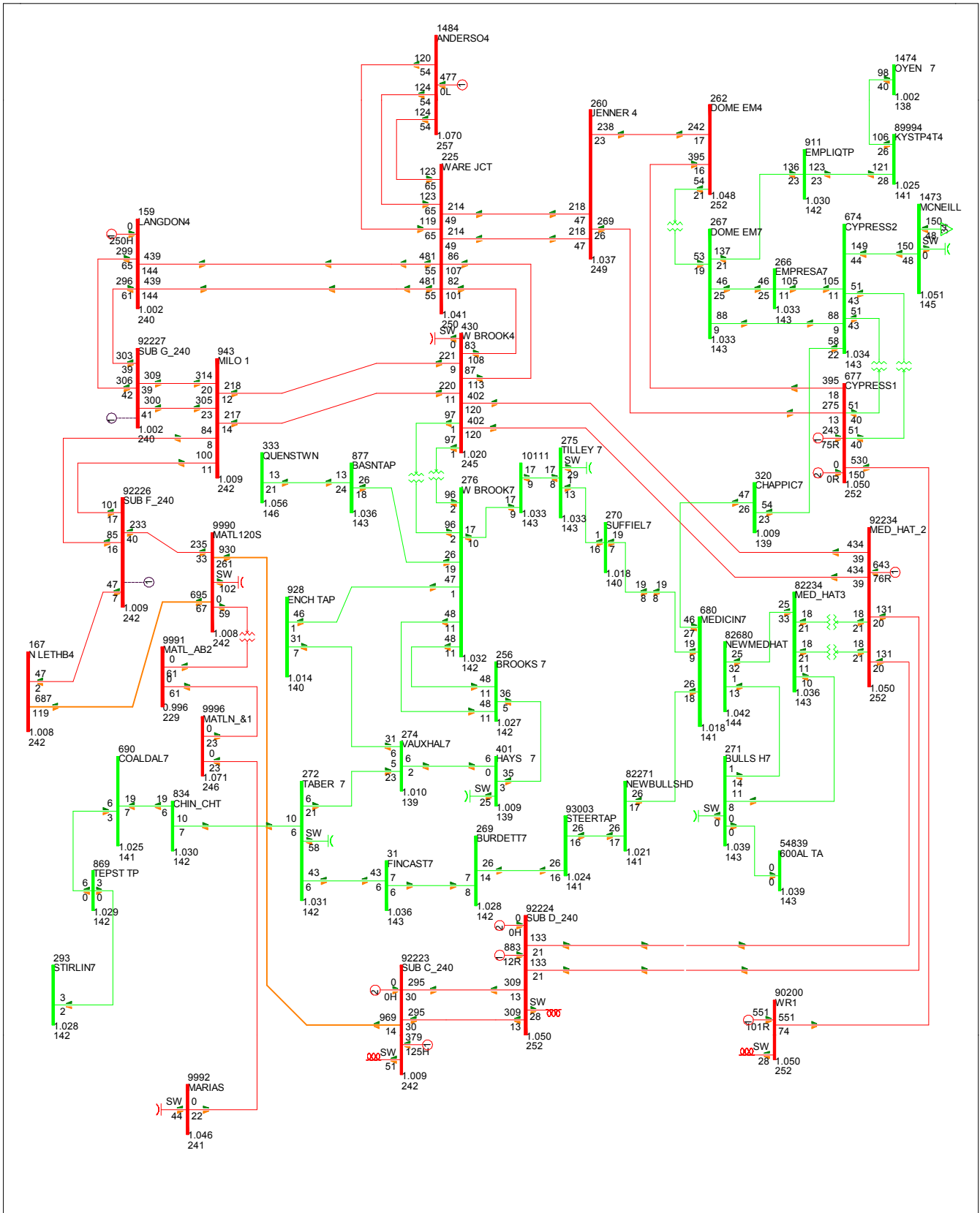


FIG 2017-1A-SP-E-19: SUB B TO SUB C 240 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 0 MW

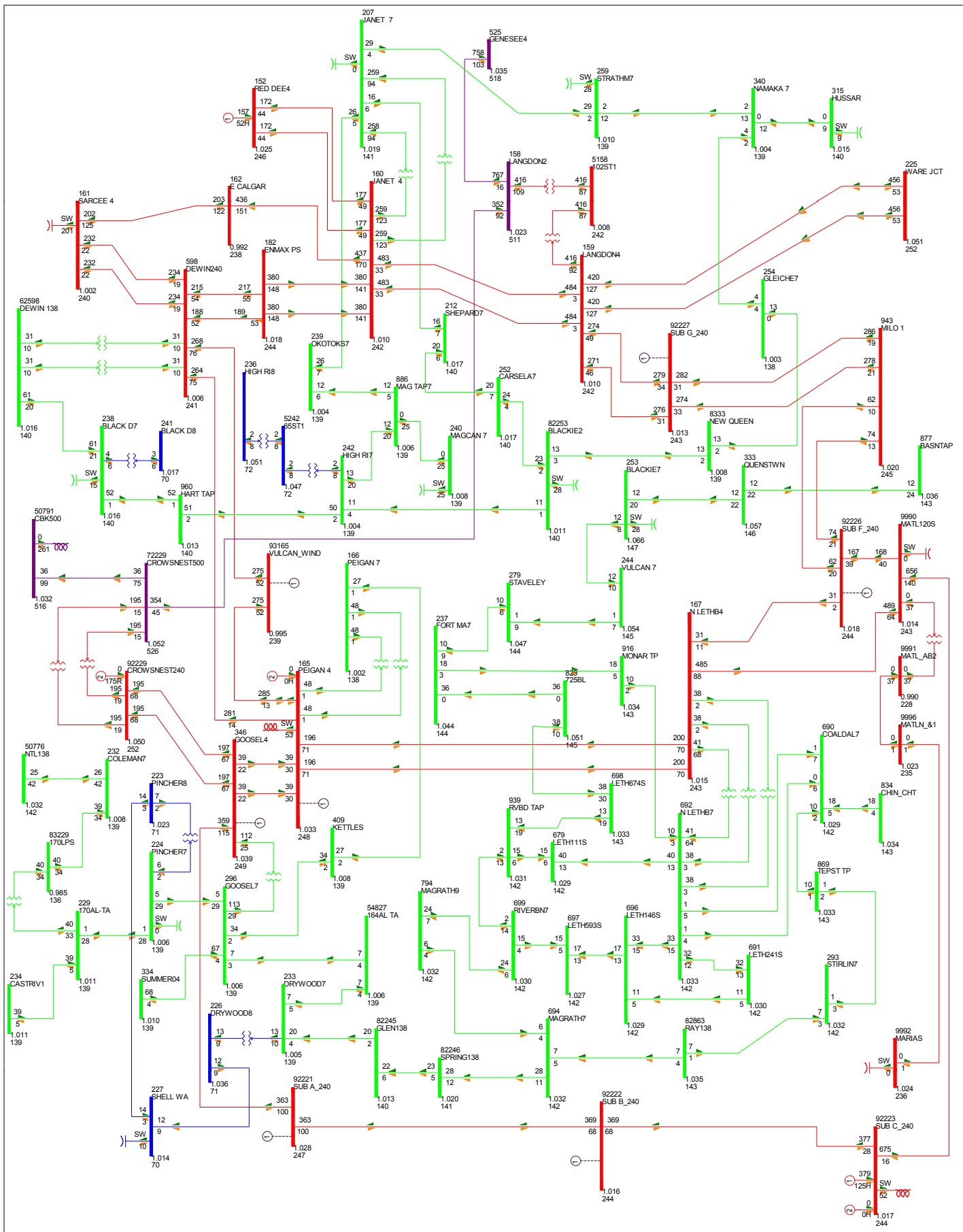


FIG 2017-1A-SP-E-20: DOME EMPRESS TO CYPRESS 138 KV

EAST WIND SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 39 MW

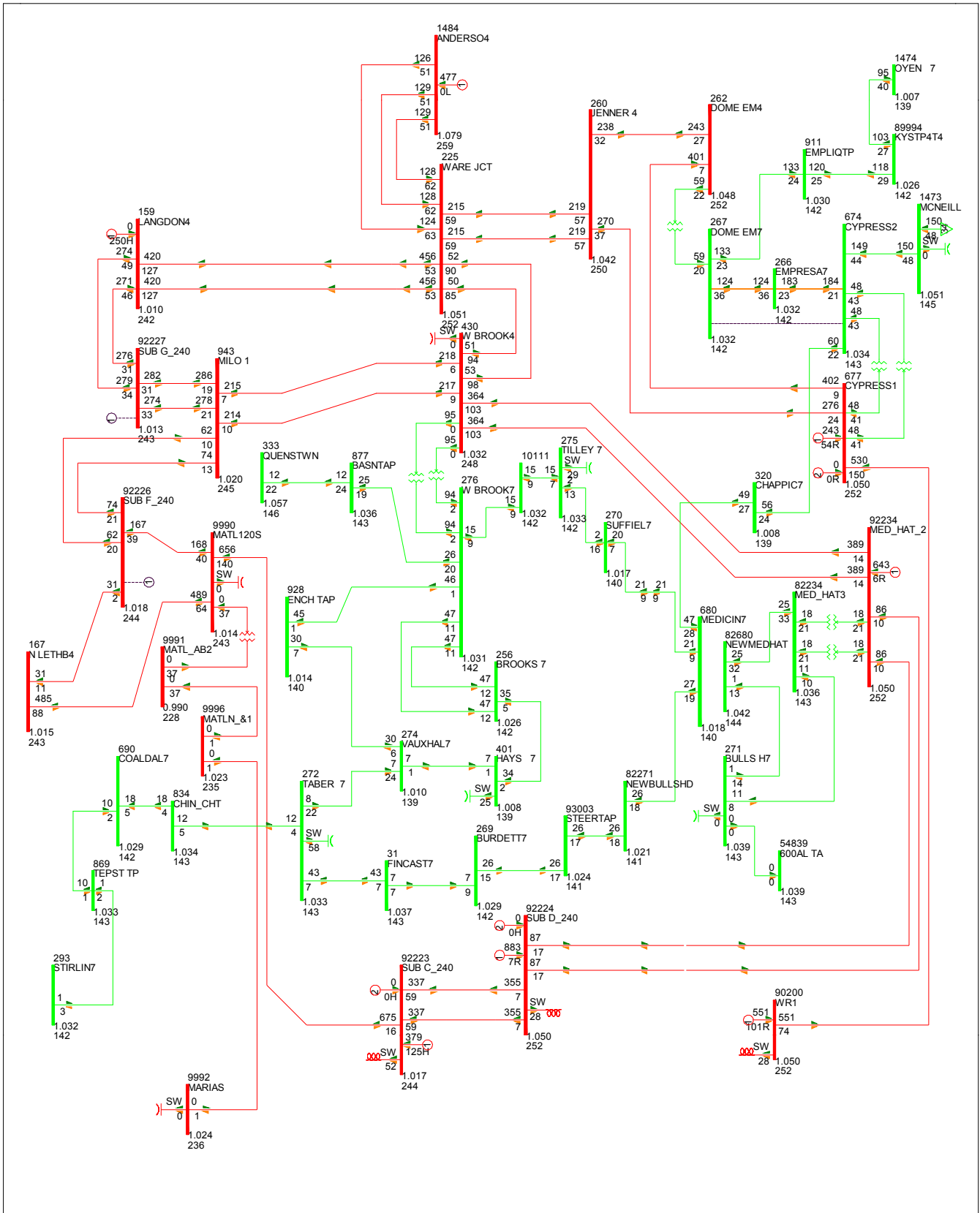


FIG 2017-1A-SP-E-21: DOME EMPRESS TO CYPRESS 138 KV
 EAST WIND SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 39 MW

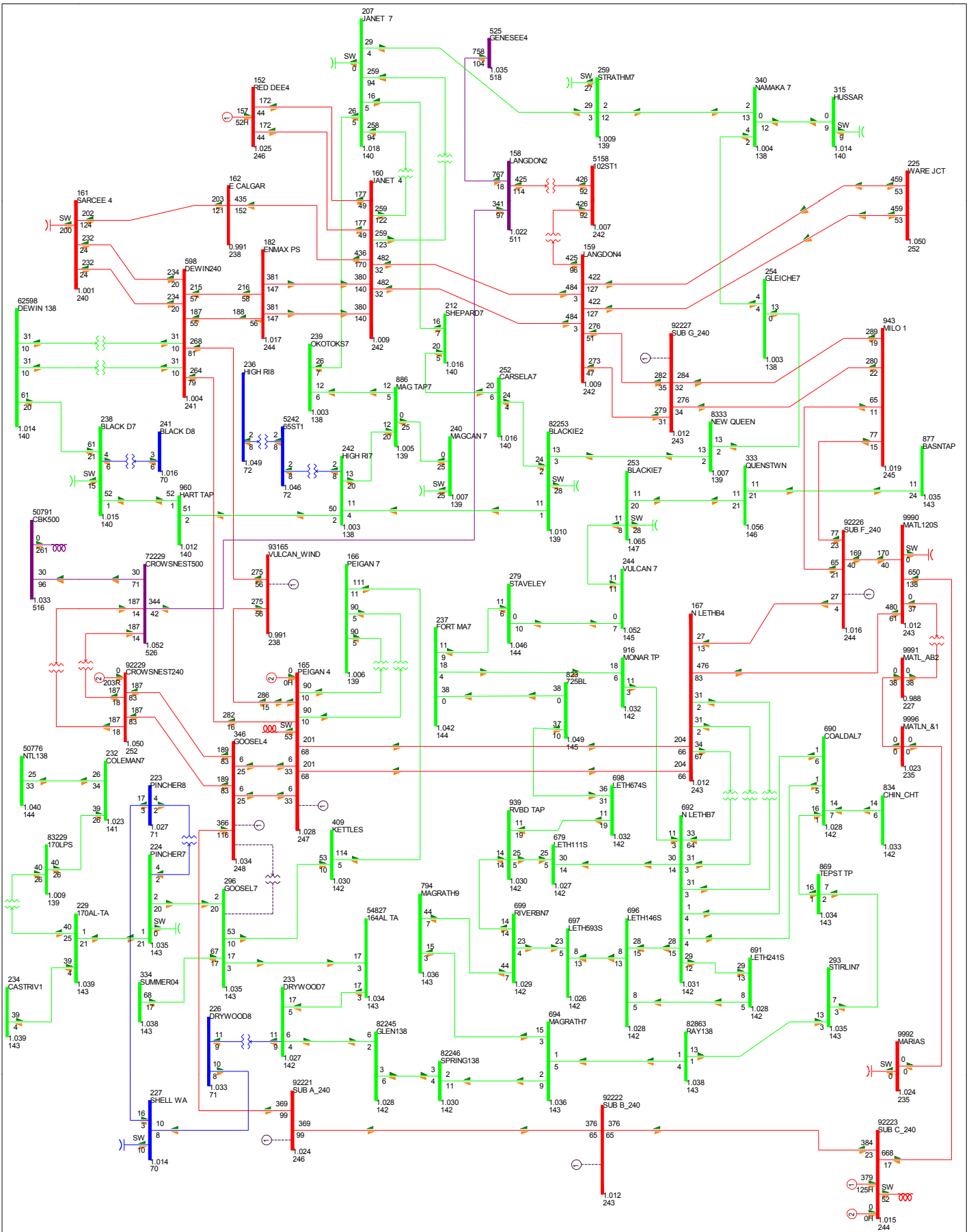


FIG 2017-1A-SP-E-22: GOOSELAKE 240/138 KV XMER
 EAST WIND SCENARIO
 2017 South West System TUE, DEC 02 2008 19:29

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 33 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3584.0 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

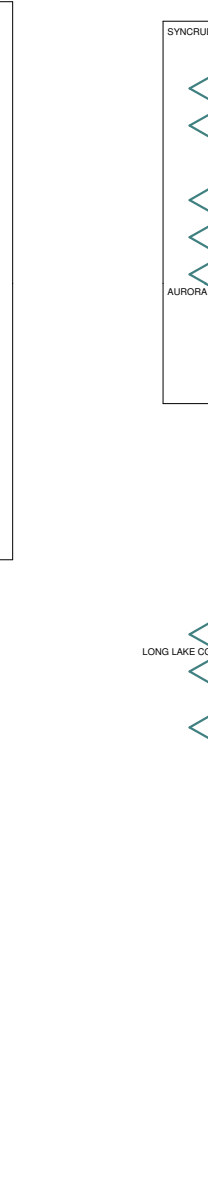
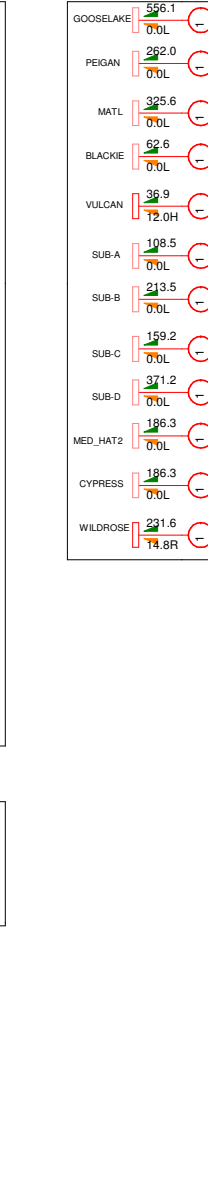
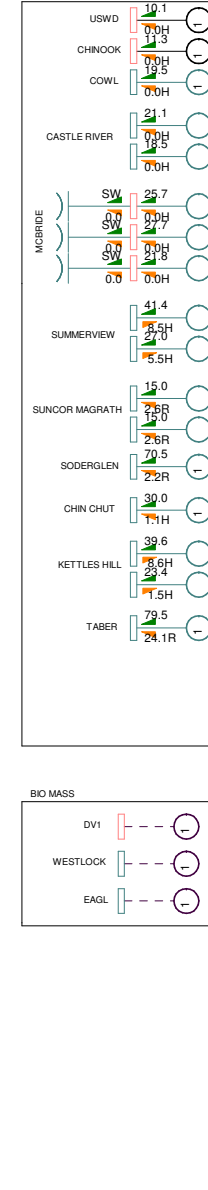
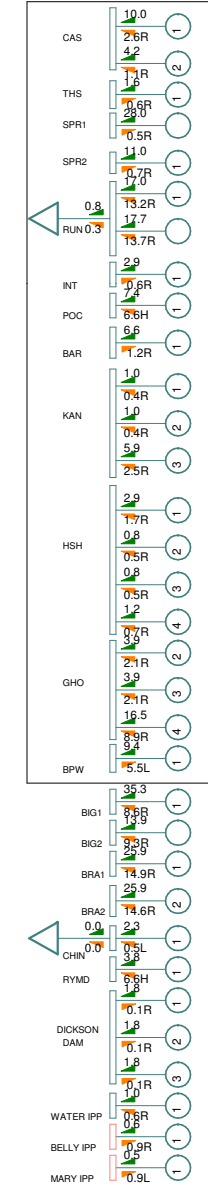
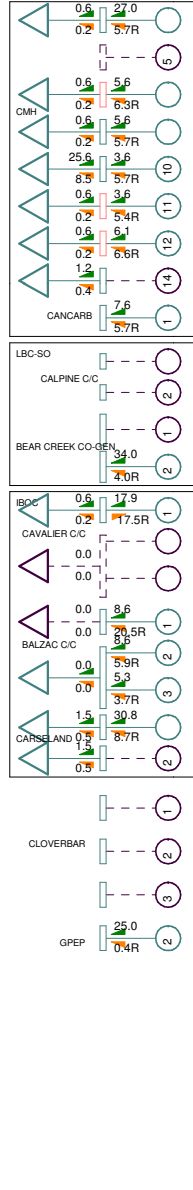
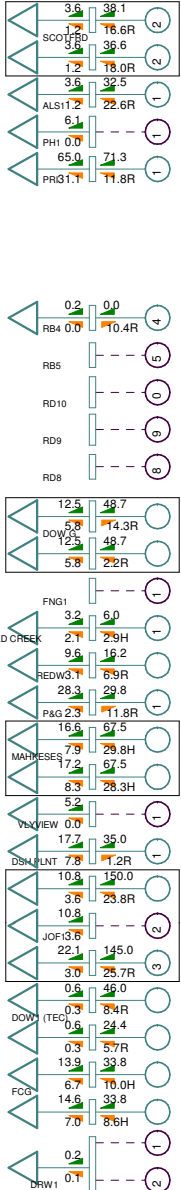
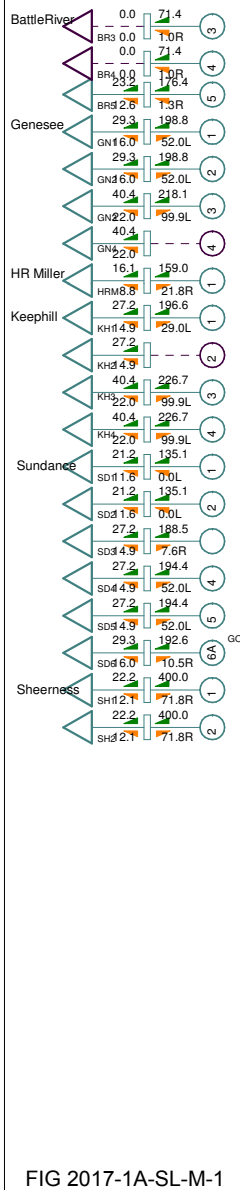


FIG 2017-1A-SL-M-1
GENERATION DISPATCH

2017 SUMMER LIGHT CASE
SUN, NOV 23 2008 11:28

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100% RATED
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

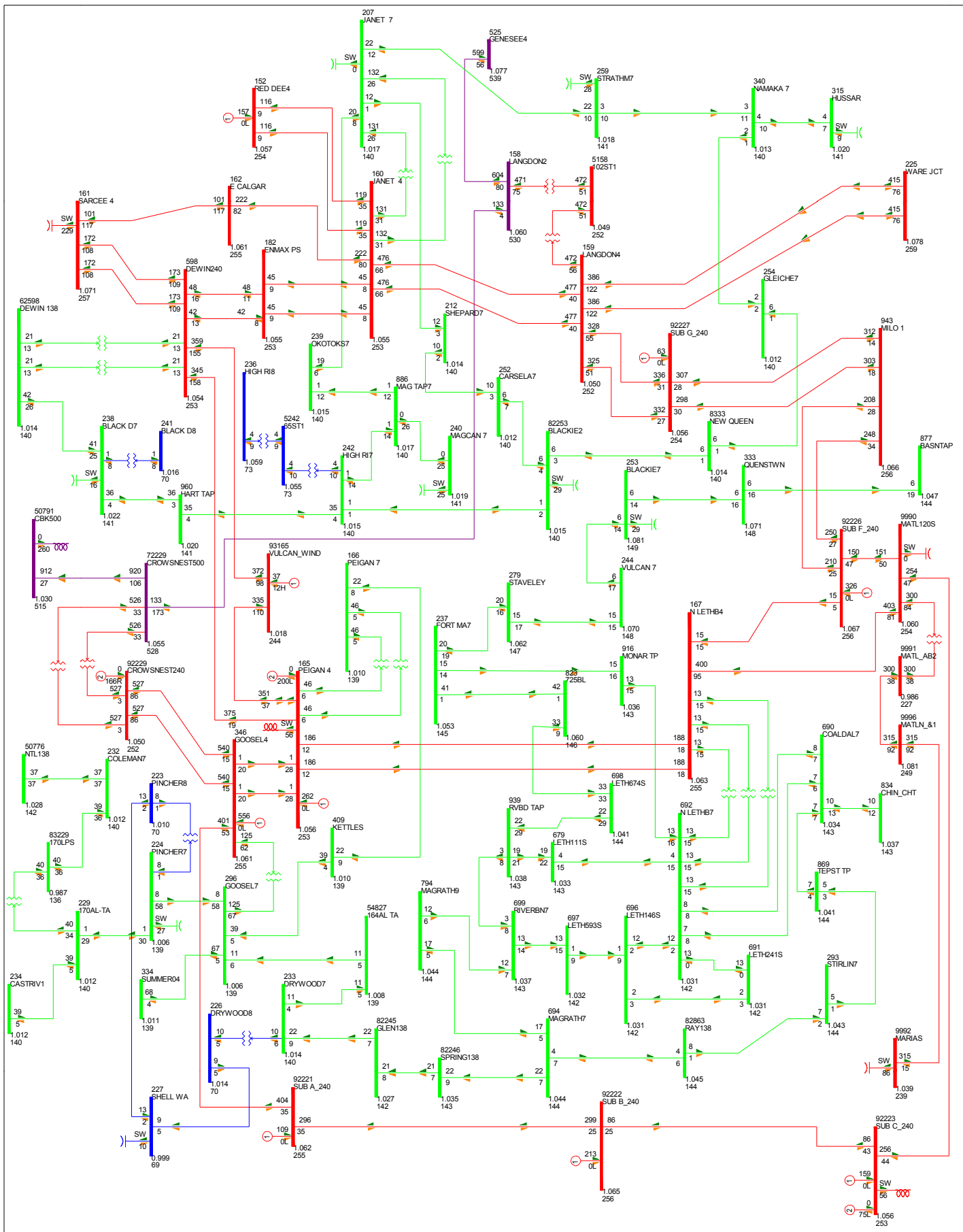


FIG 2017-1A-SL-M-2: N-0 CONDITION

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 975 MW

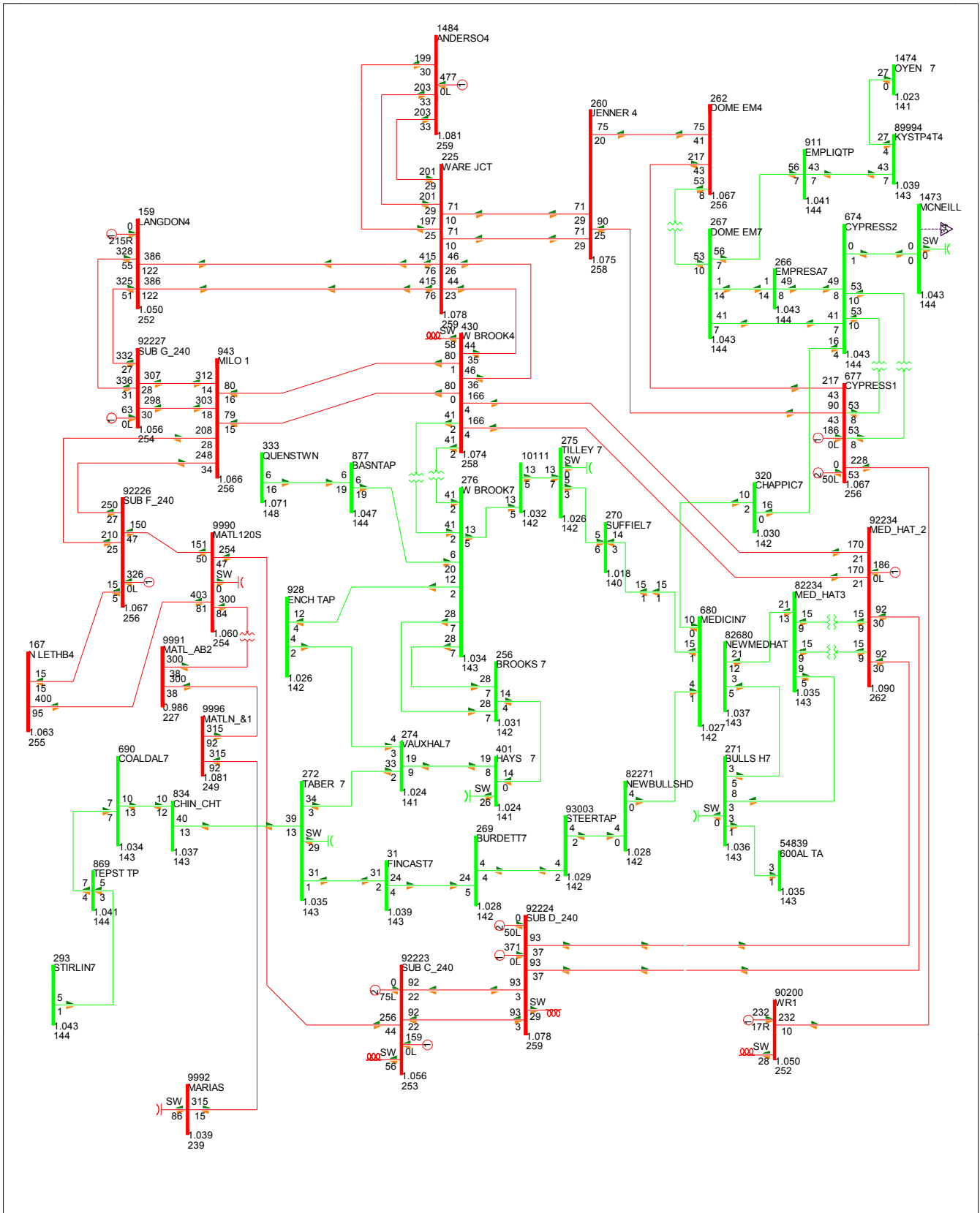


FIG 2017-1A-SL-M-3: N-0 CONDITION
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 975 MW

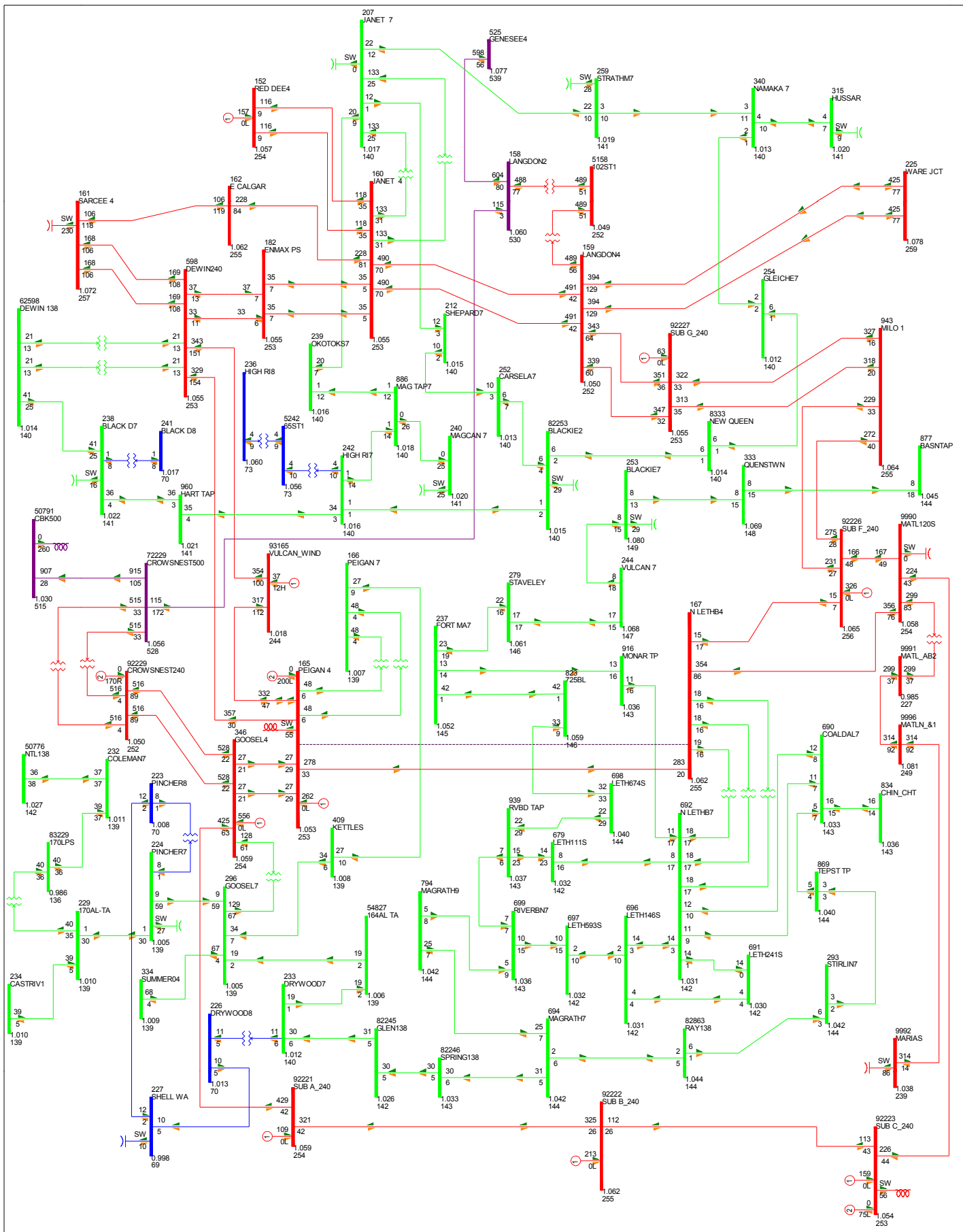


FIG 2017-1A-SL-M-4: PEIGAN TO N. LETHBRIDGE 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 970 MW

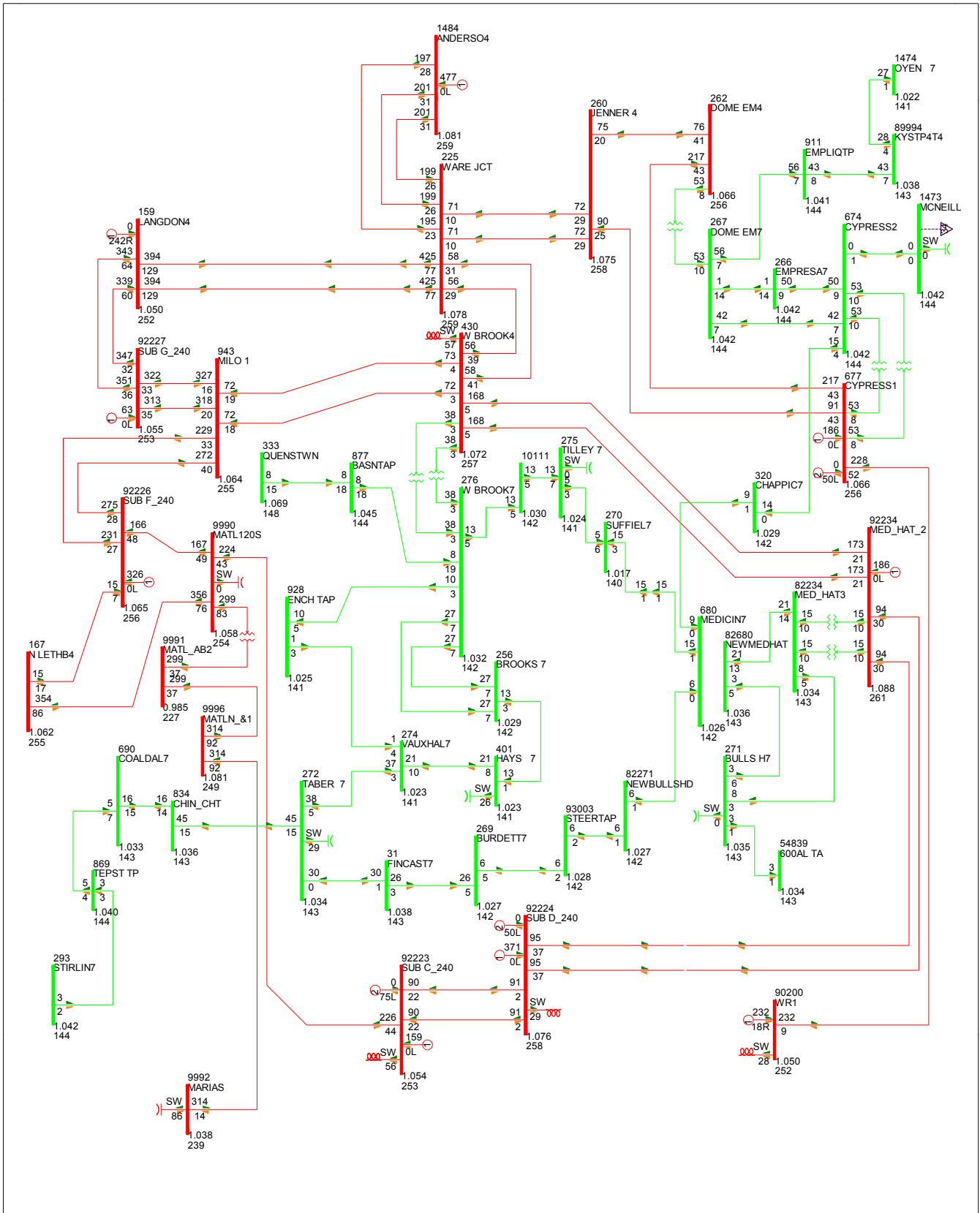


FIG 2017-1A-SL-M-5: PEIGAN TO N. LETHBRIDGE 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 970 MW

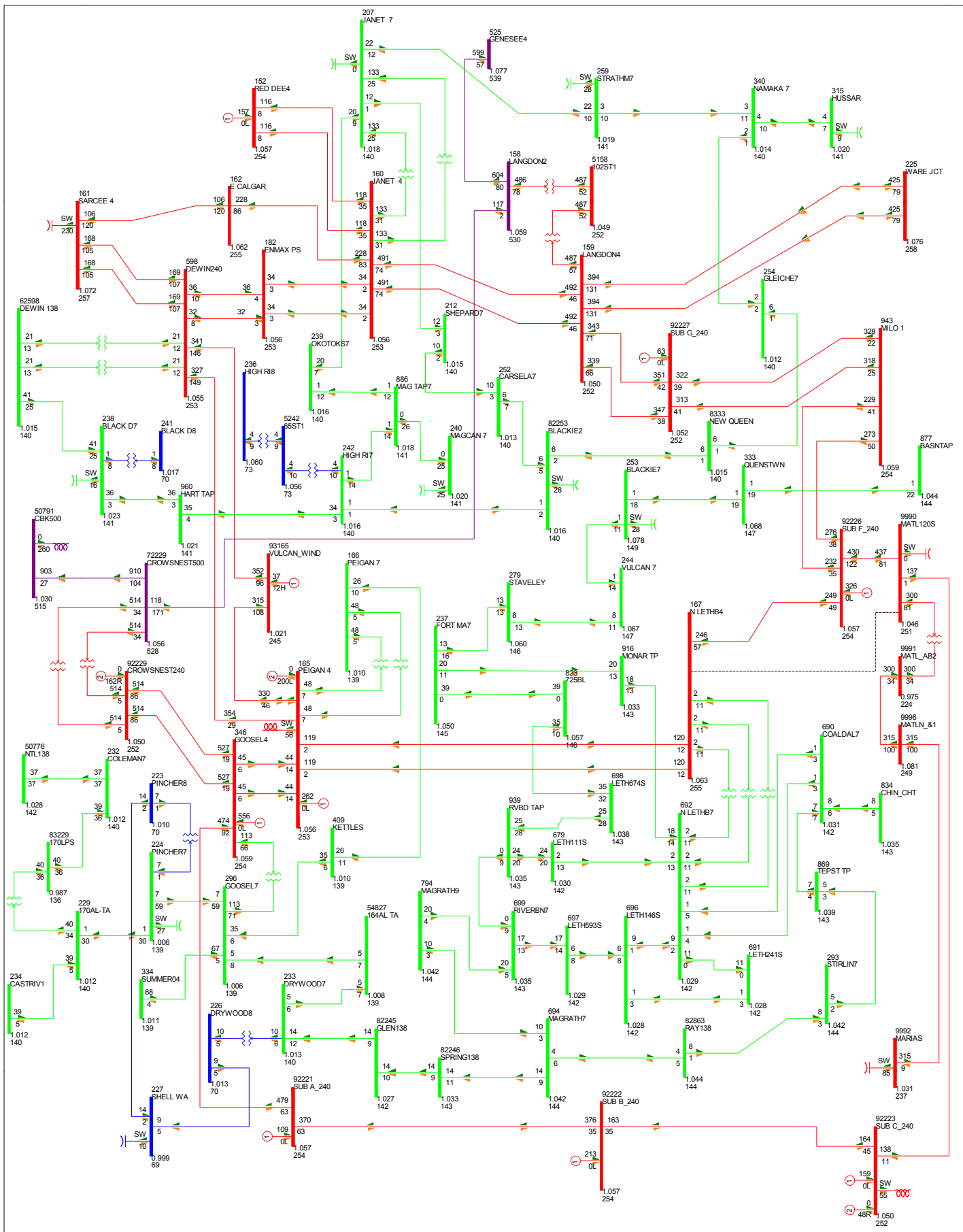


FIG 2017-1A-SL-M-6: N. LETHBRIDGE TO MATL 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 >500.000

BC Export: 965 MW

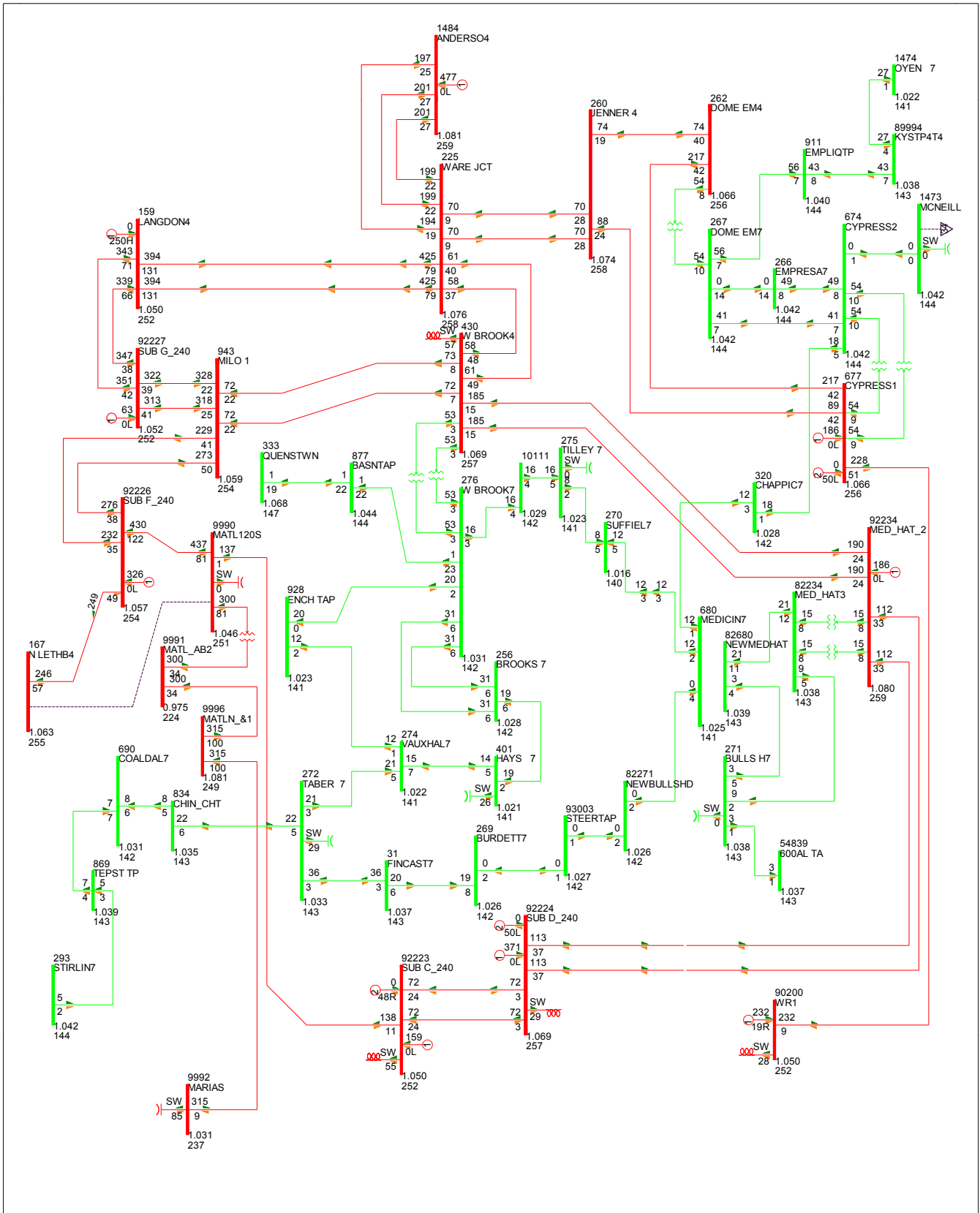


FIG 2017-1A-SL-M-7: N. LETHBRIDGE TO MATL 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 965 MW

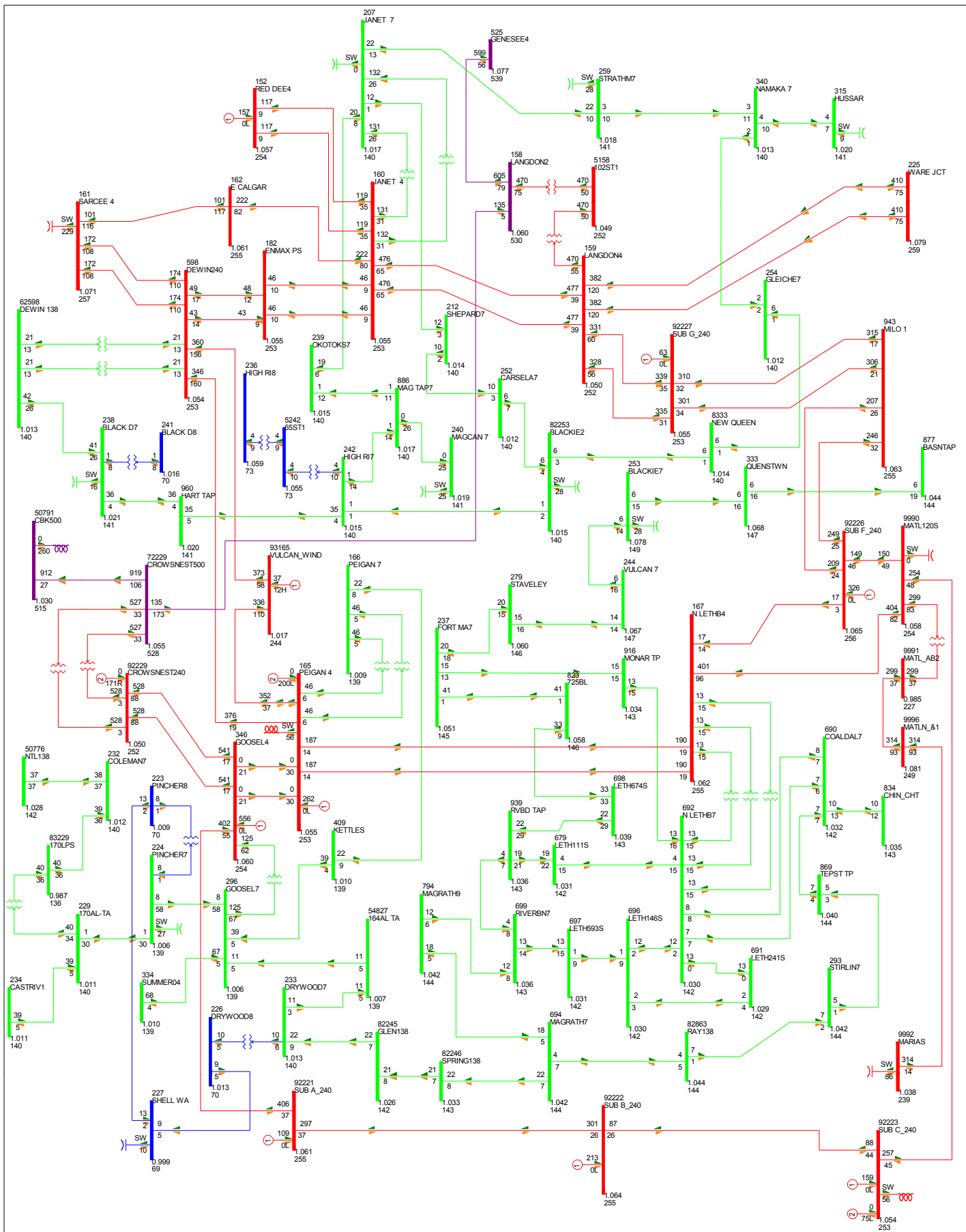


FIG 2017-1A-SL-M-8: WARE JUNCTION TO WESTBROOKS 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 974 MW

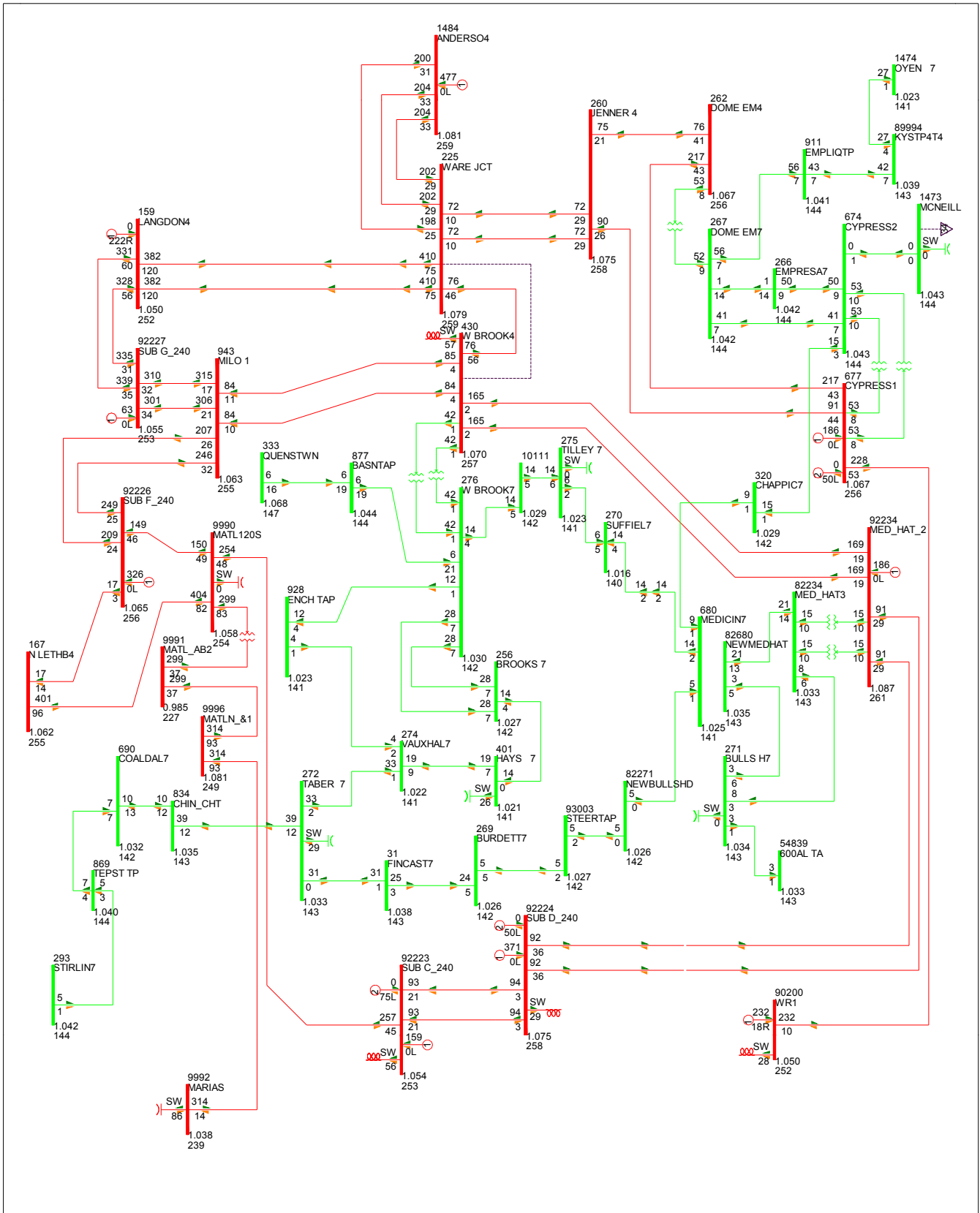


FIG 2017-1A-SL-M-9: WARE JUNCTION TO WESTBROOKS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 974 MW

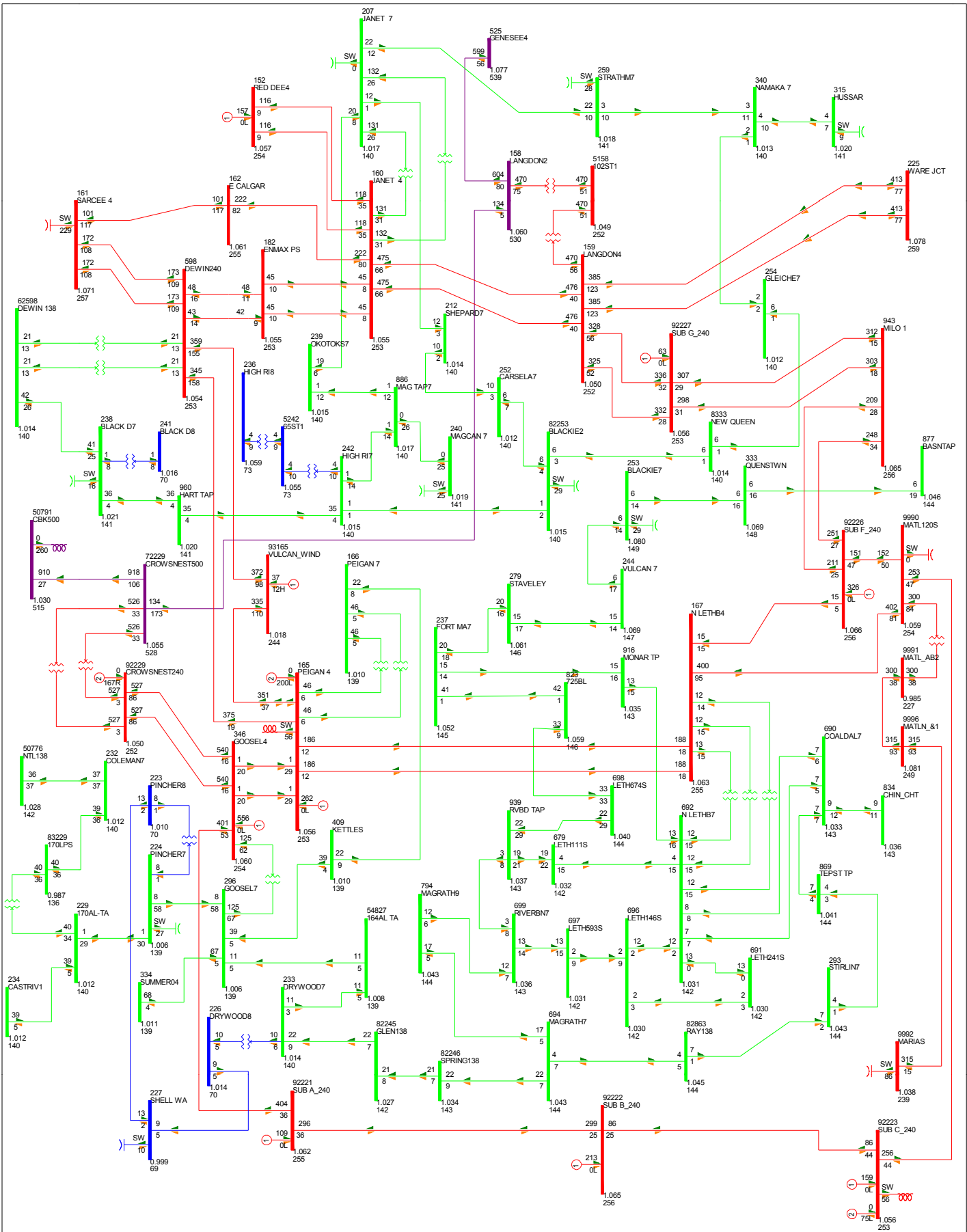


FIG 2017-1A-SL-M-10: JENNER TO CYPRESS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 973 MW

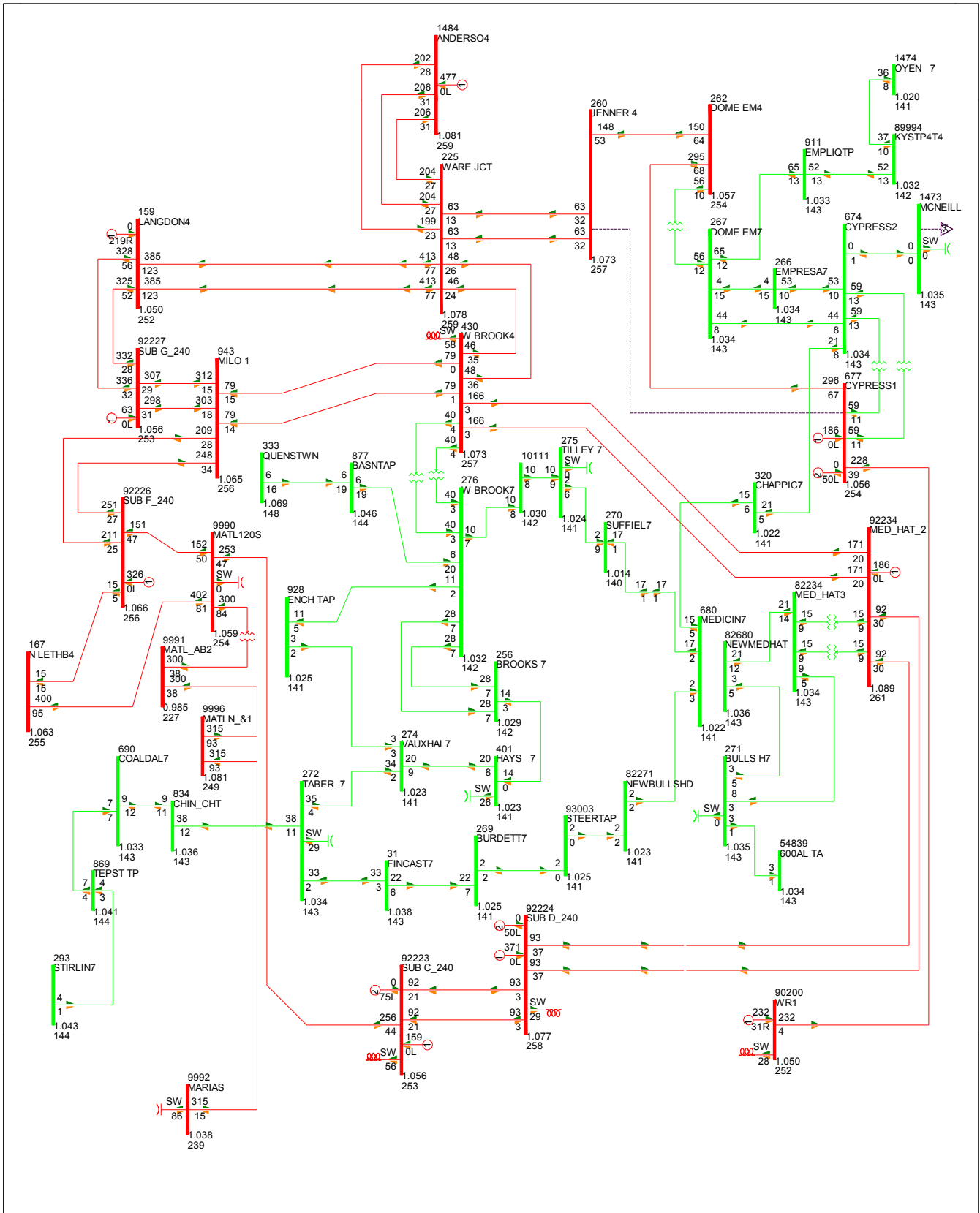


FIG 2017-1A-SL-M-11: JENNER TO CYPRESS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 973 MW

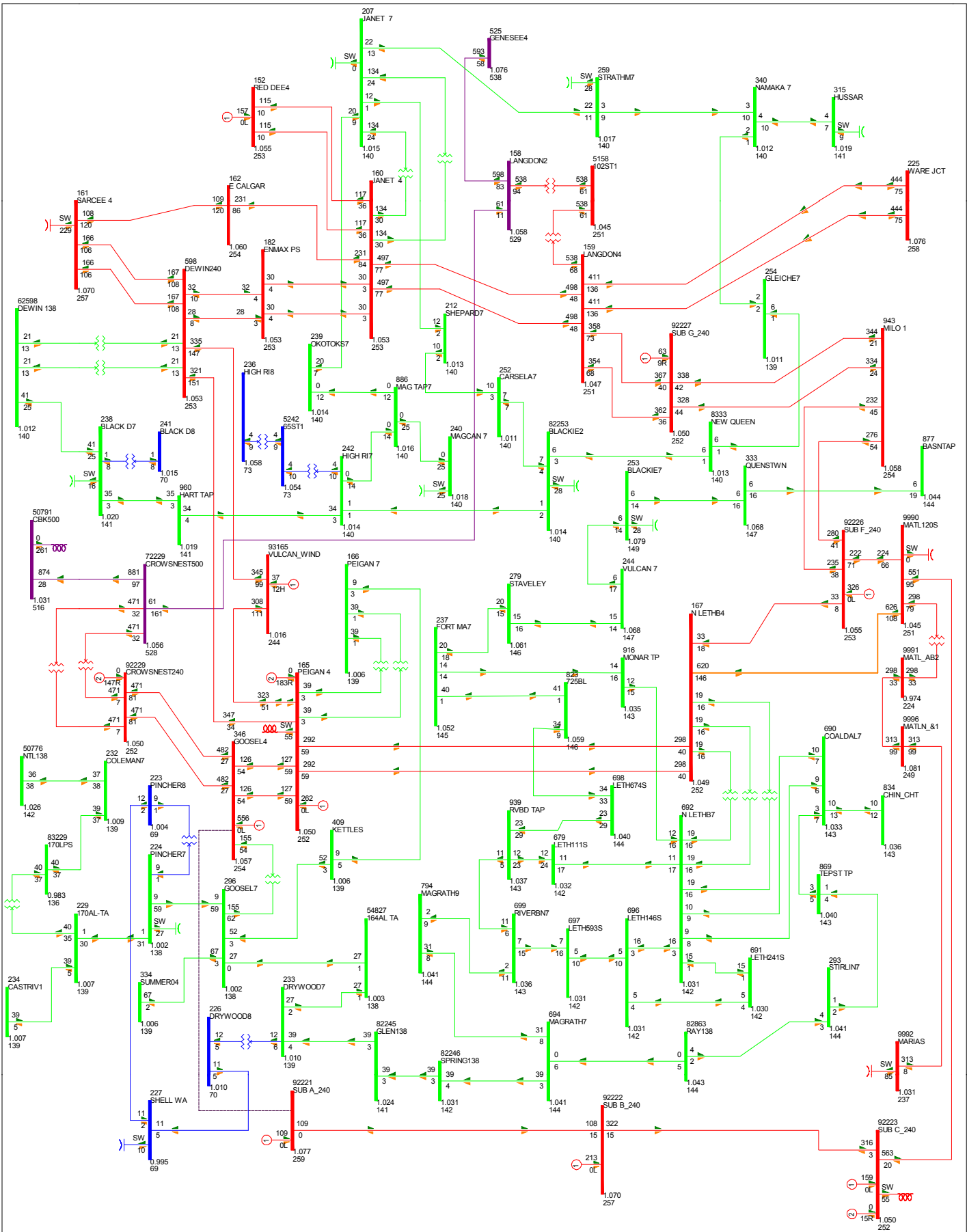


FIG 2017-1A-SL-M-12: GOOSELAKE TO SUB A 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 937 MW

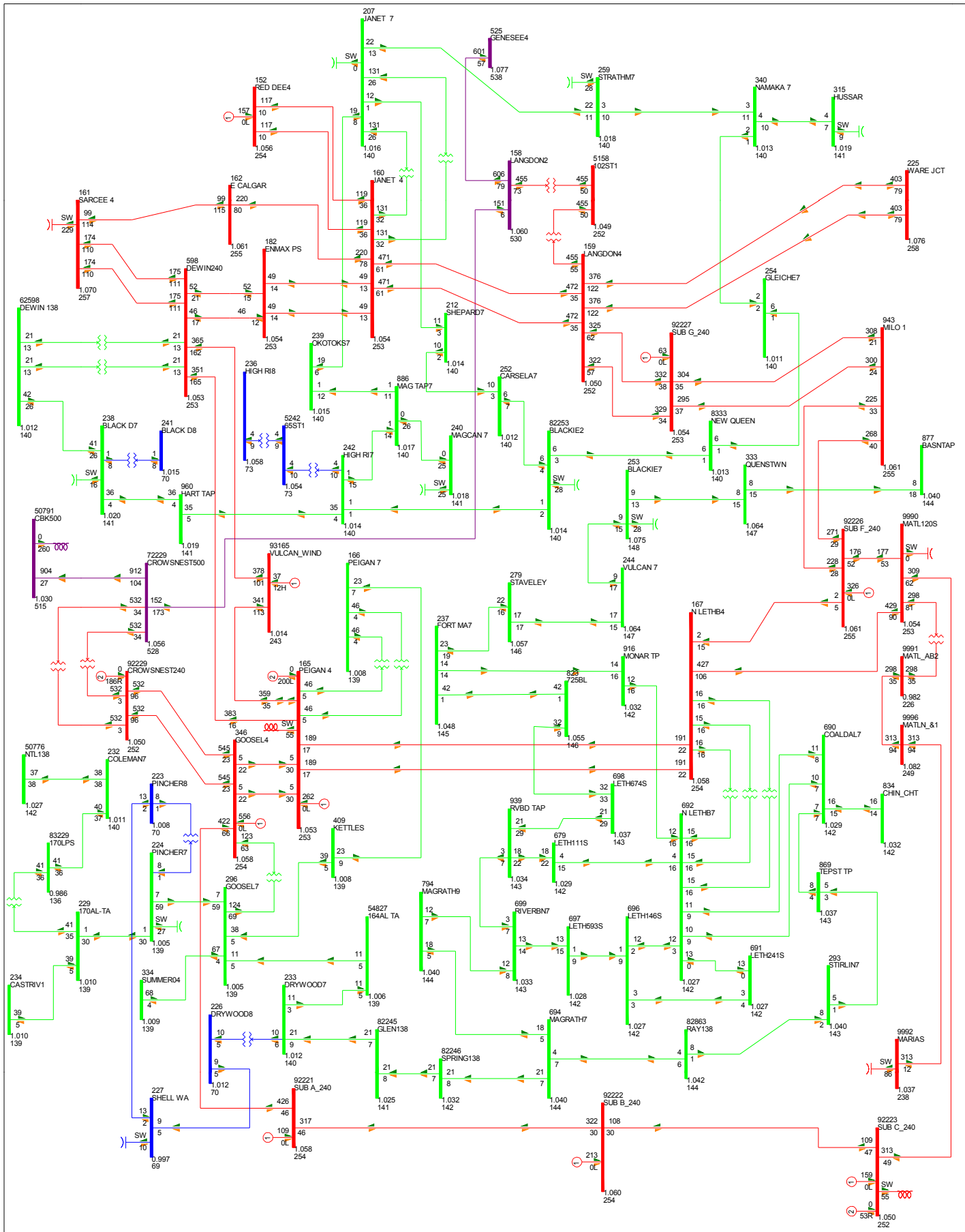


FIG 2017-1A-SL-M-14: WESTBROOKS TO MEDHAT 2 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 966 MW

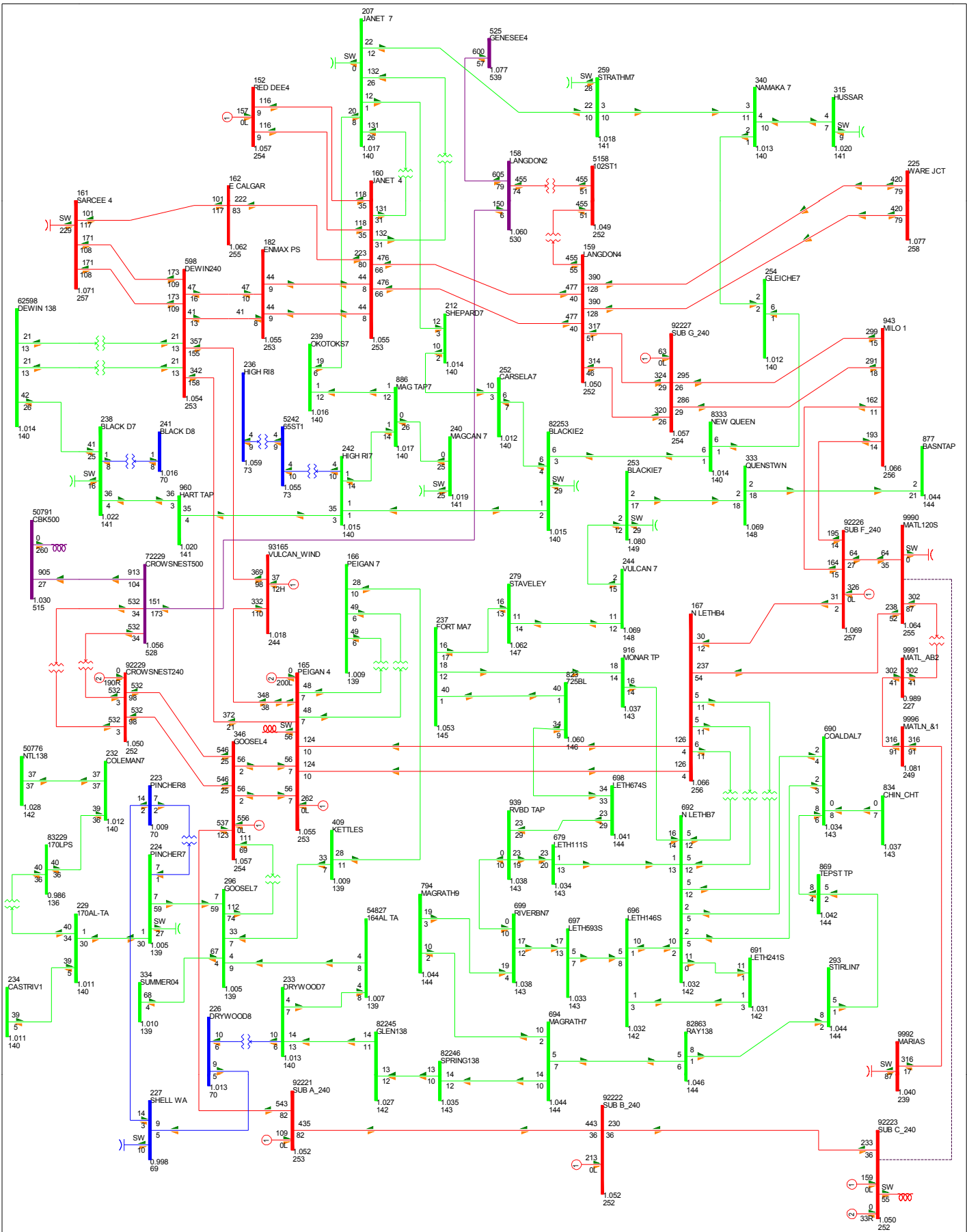


FIG 2017-1A-SL-M-16: SUB C TO MATL 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 967 MW

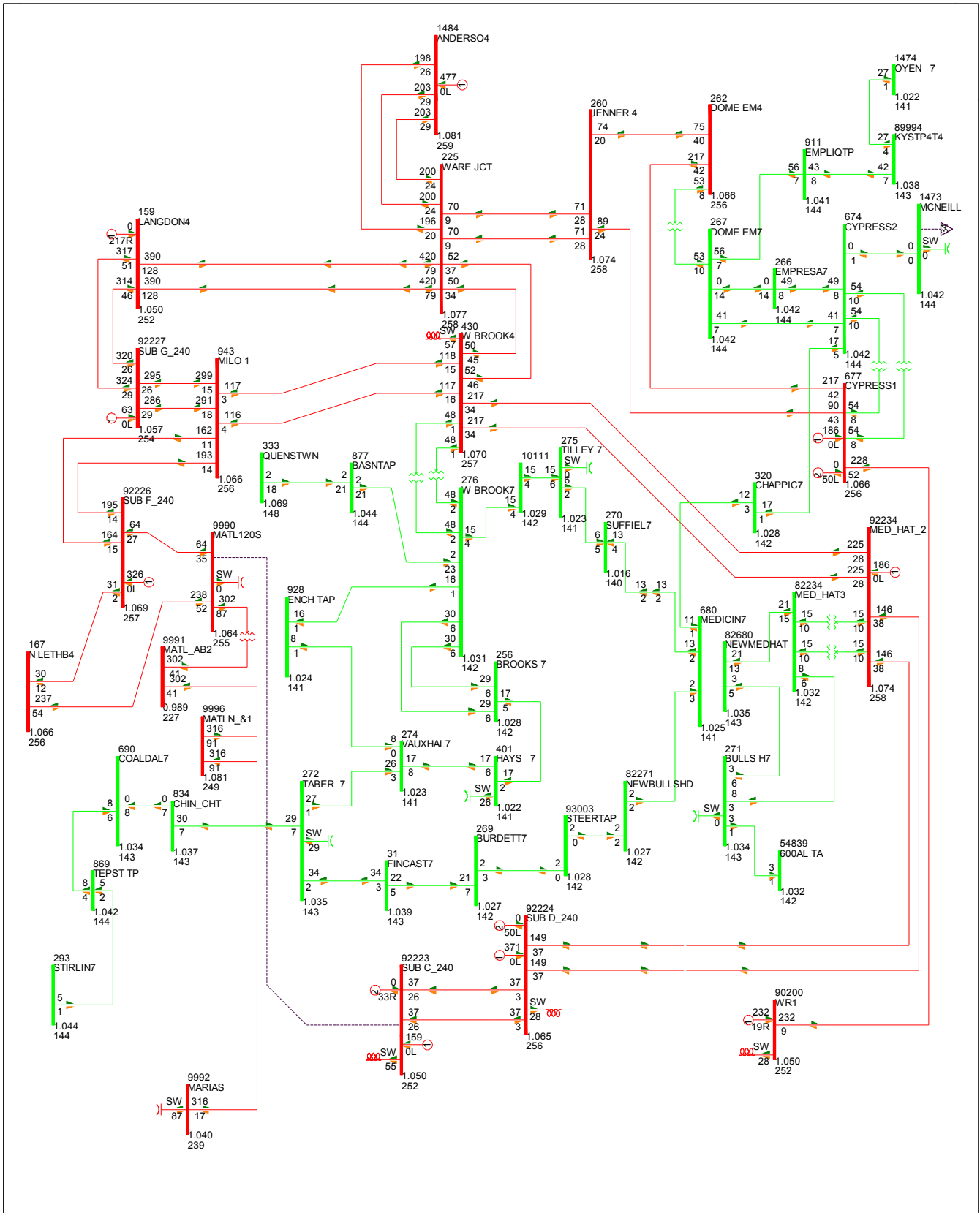


FIG 2017-1A-SL-M-17: SUB C TO MATL 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 967 MW

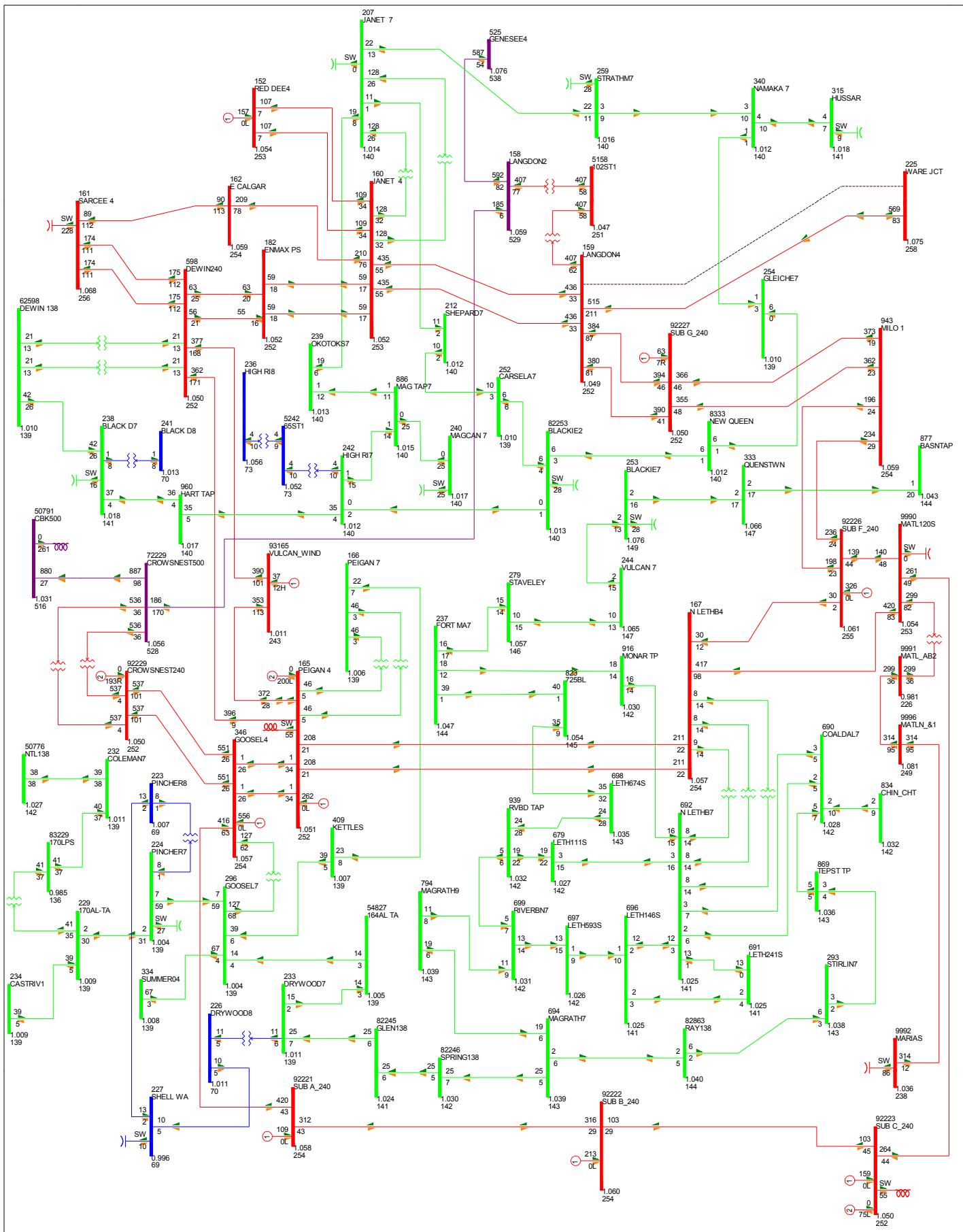


FIG 2017-1A-SL-M-18: WARE JUNCTION TO LANGDON 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 940 MW

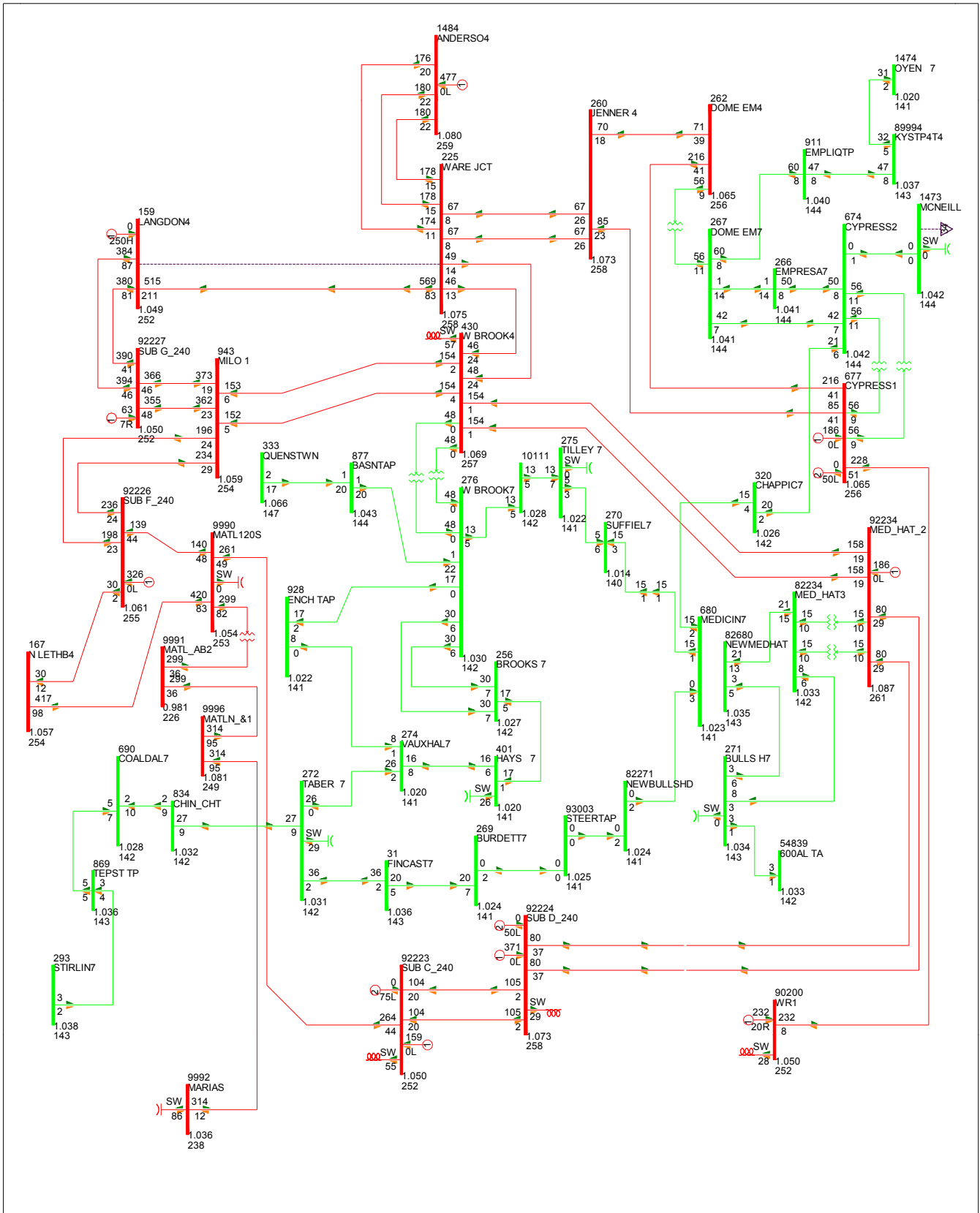


FIG 2017-1A-SL-M-19: WARE JUNCTION TO LANGDON 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 940 MW

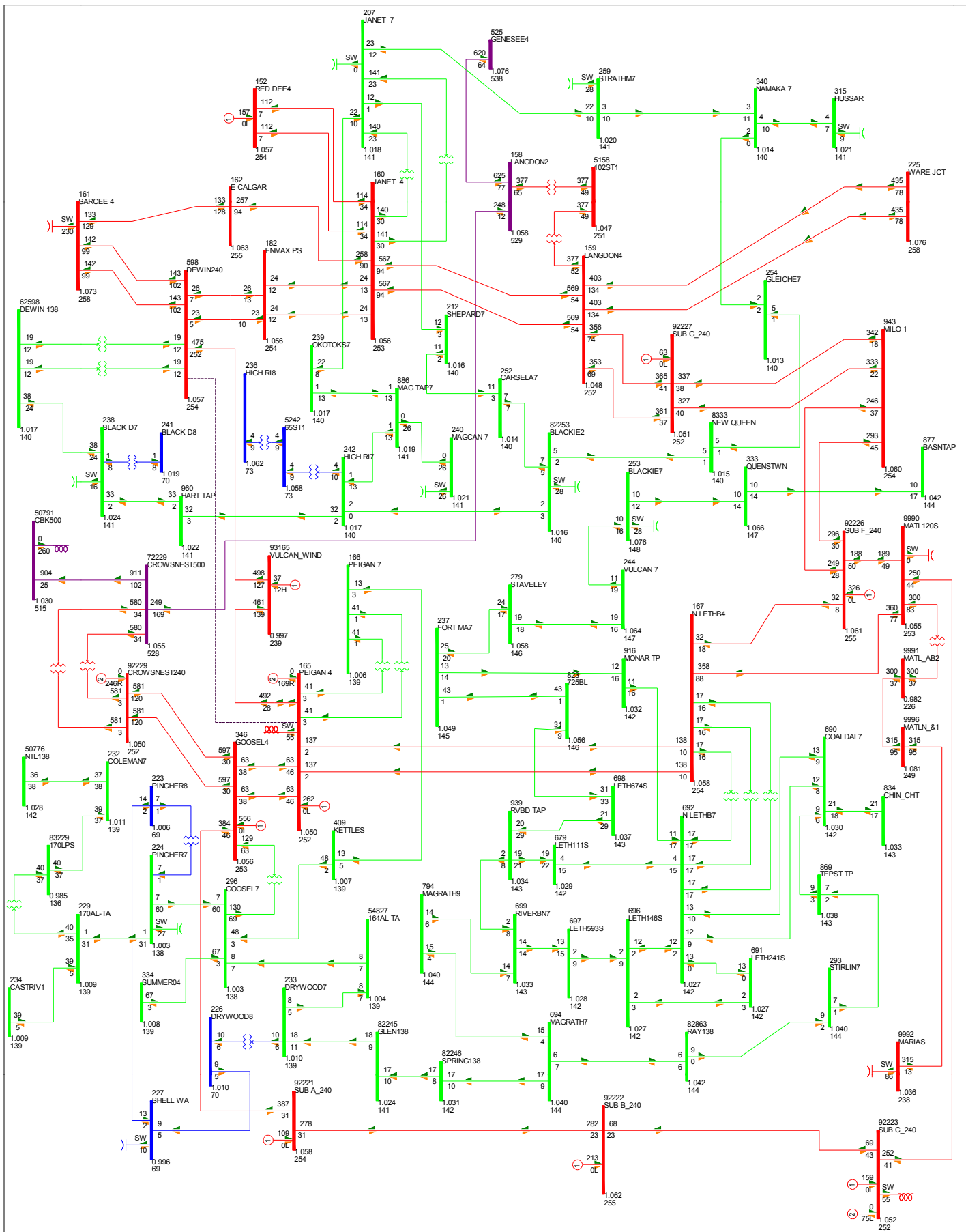


FIG 2017-1A-SL-M-20: PEIGAN TO DEWINTON 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 959 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3634.3 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 497.1 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

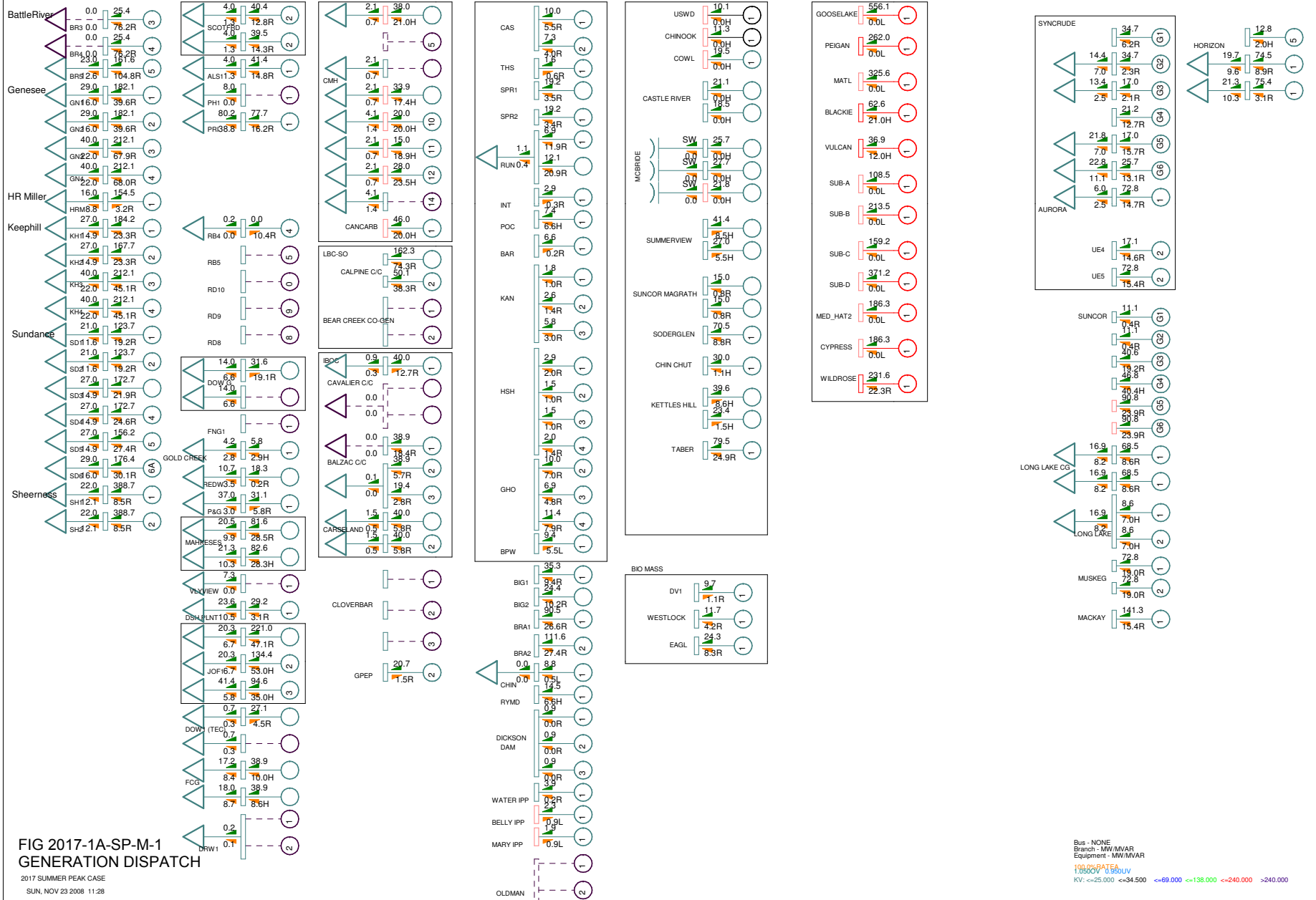


FIG 2017-1A-SP-M-1
GENERATION DISPATCH

2017 SUMMER PEAK CASE
SUN, NOV 23 2009 11:28

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
Tolerance - 0.5000
KV: <-25,000 <-34,500 <-69,000 <-138,000 <-240,000 >240,000

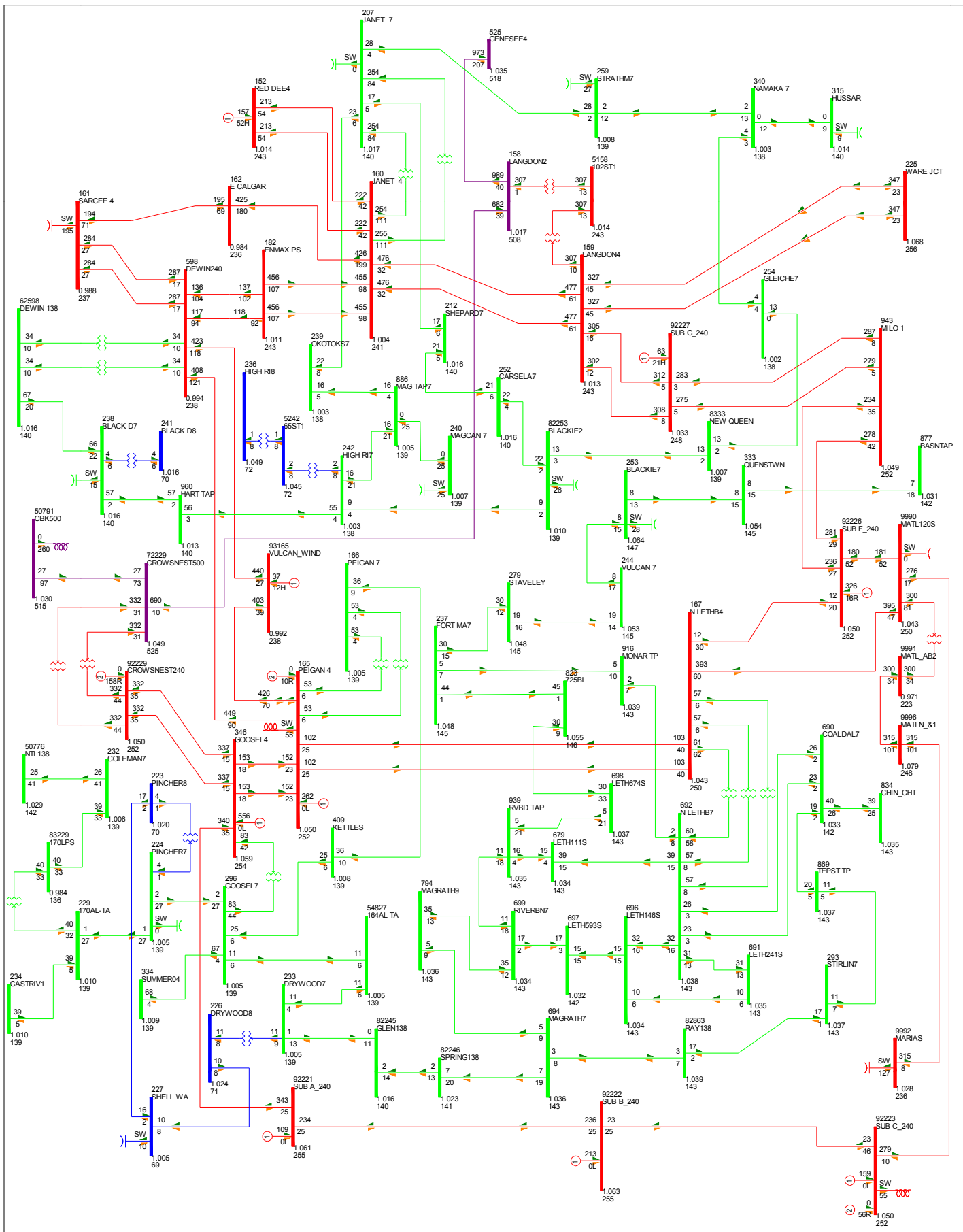


FIG 2017-1A-SP-M-2: N-0 CONDITION

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -37 MW

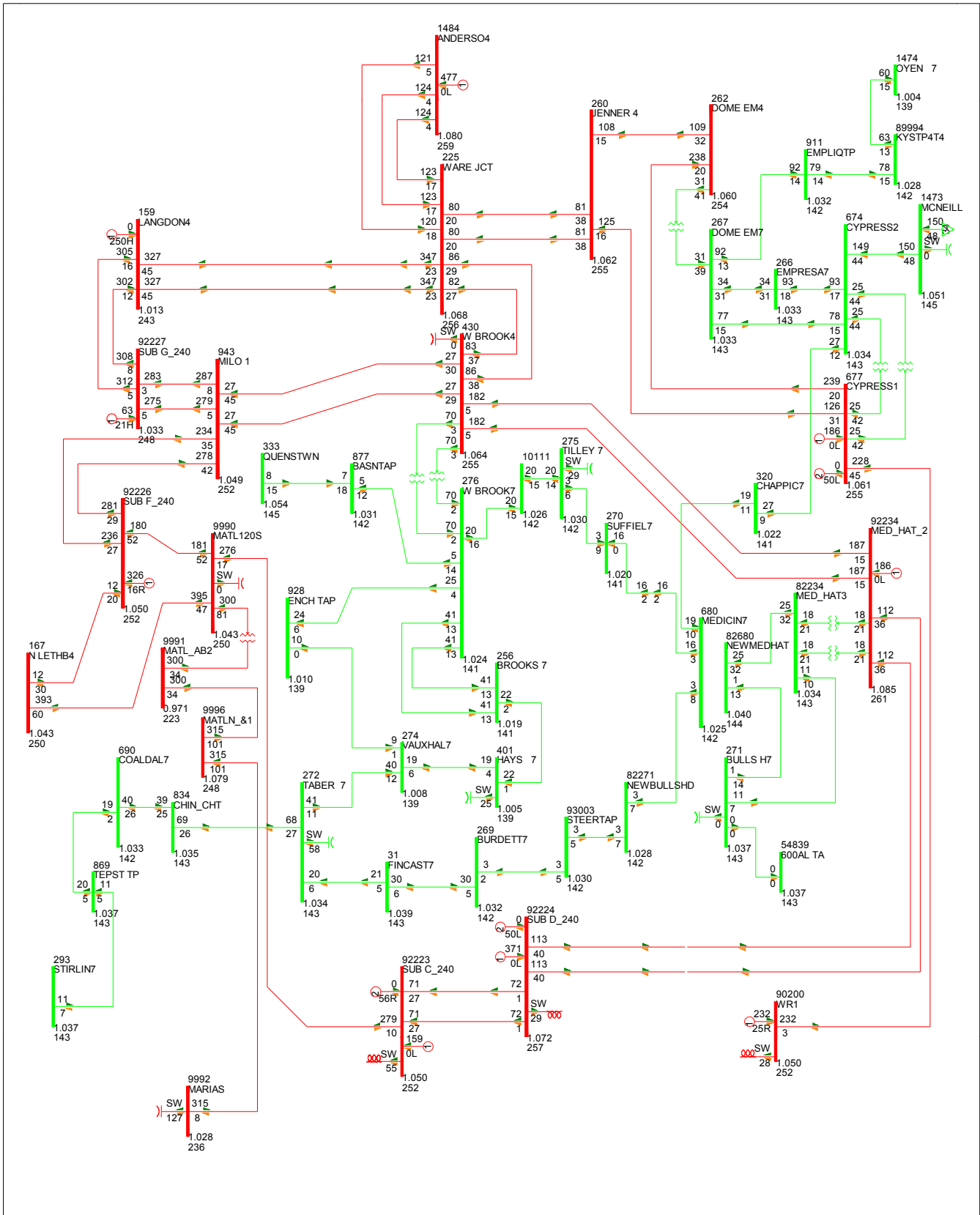


FIG 2017-1A-SP-M-3: N-0 CONDITION
 MATL 300 MW IMPORT SCENARIO

2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -37 MW

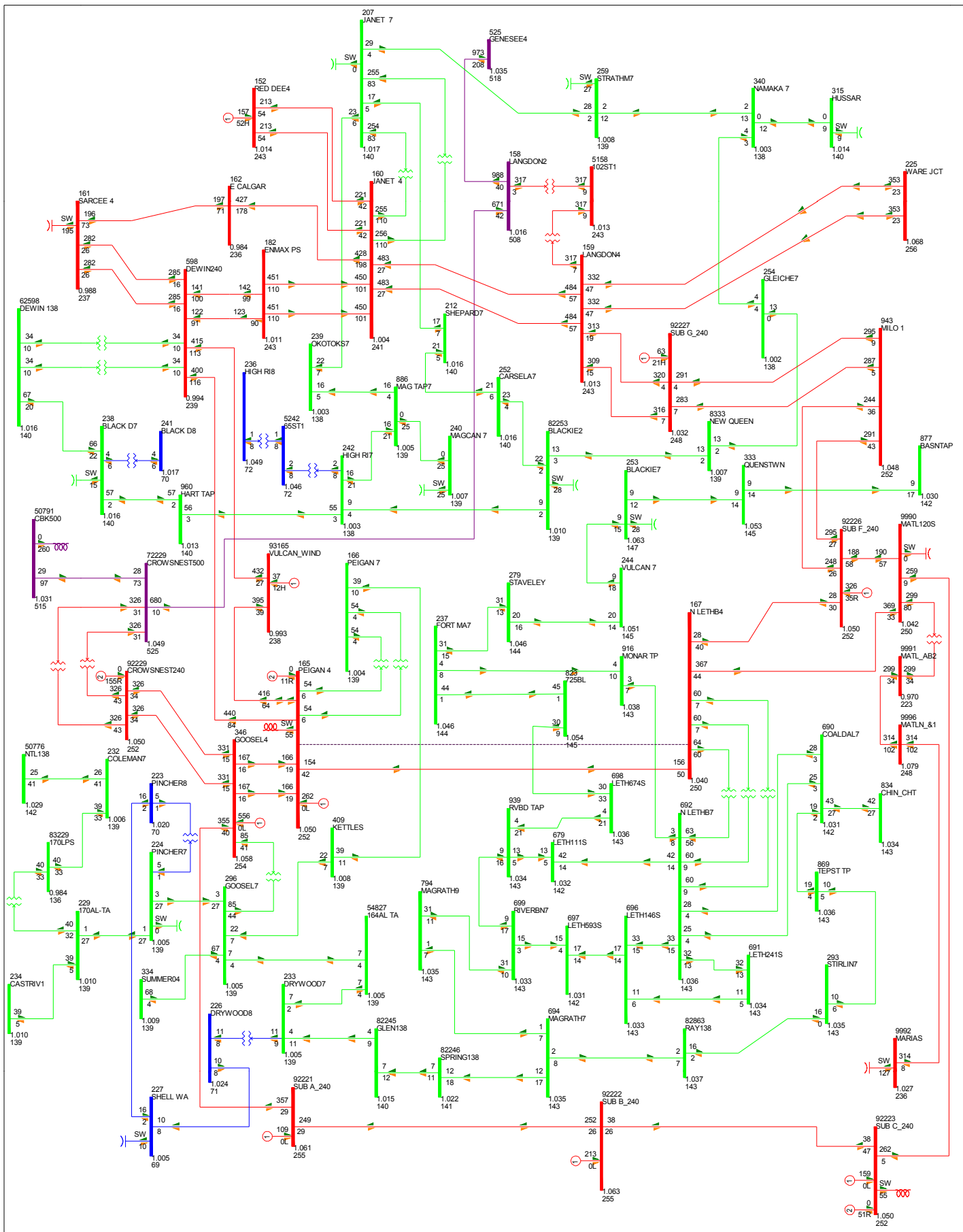


FIG 2017-1A-SP-M-4: PEIGAN TO N. LETHBRIDGE 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -38 MW

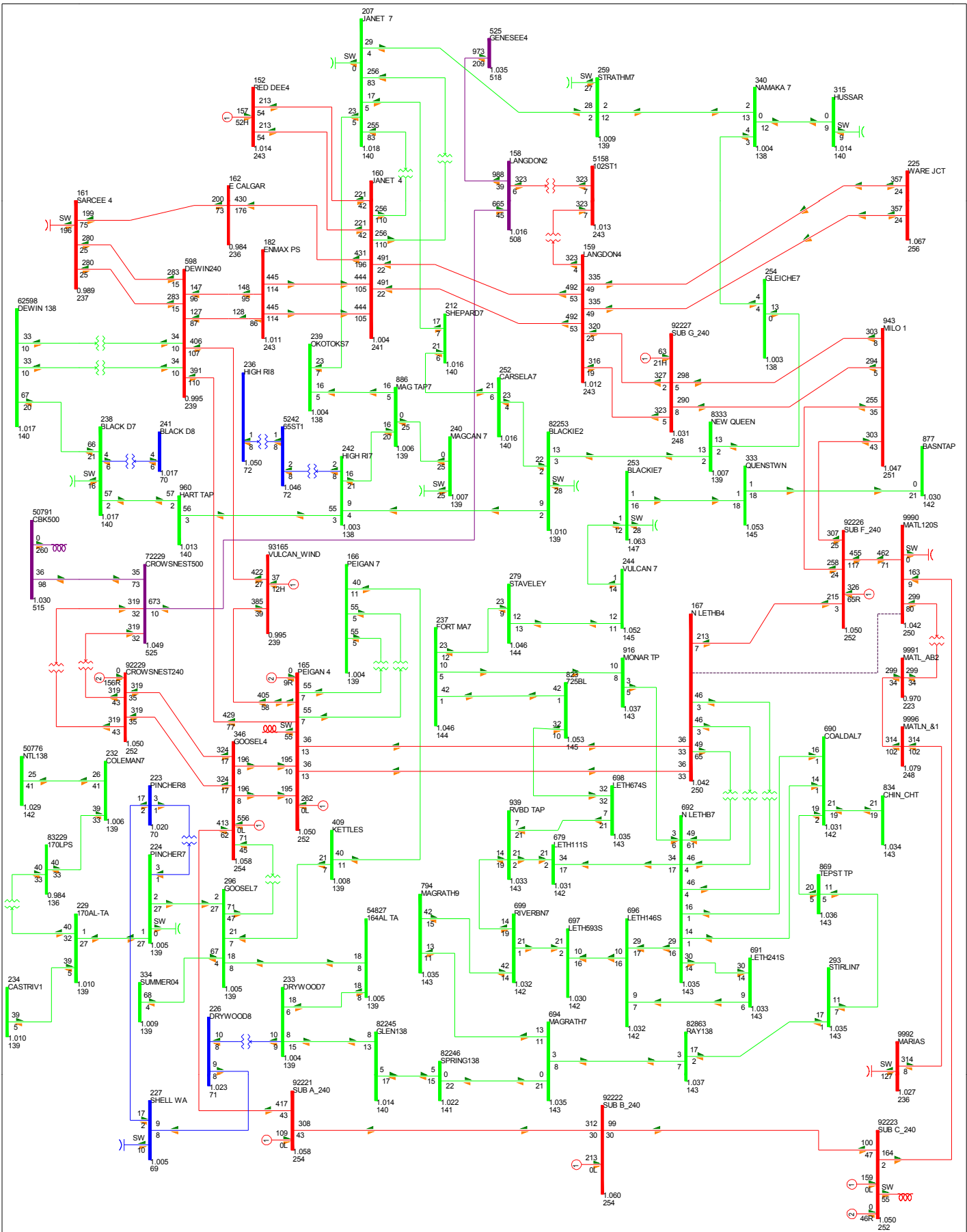


FIG 2017-1A-SP-M-6: N. LETHBRIDGE TO MATL 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000
 BC Export: -45 MW

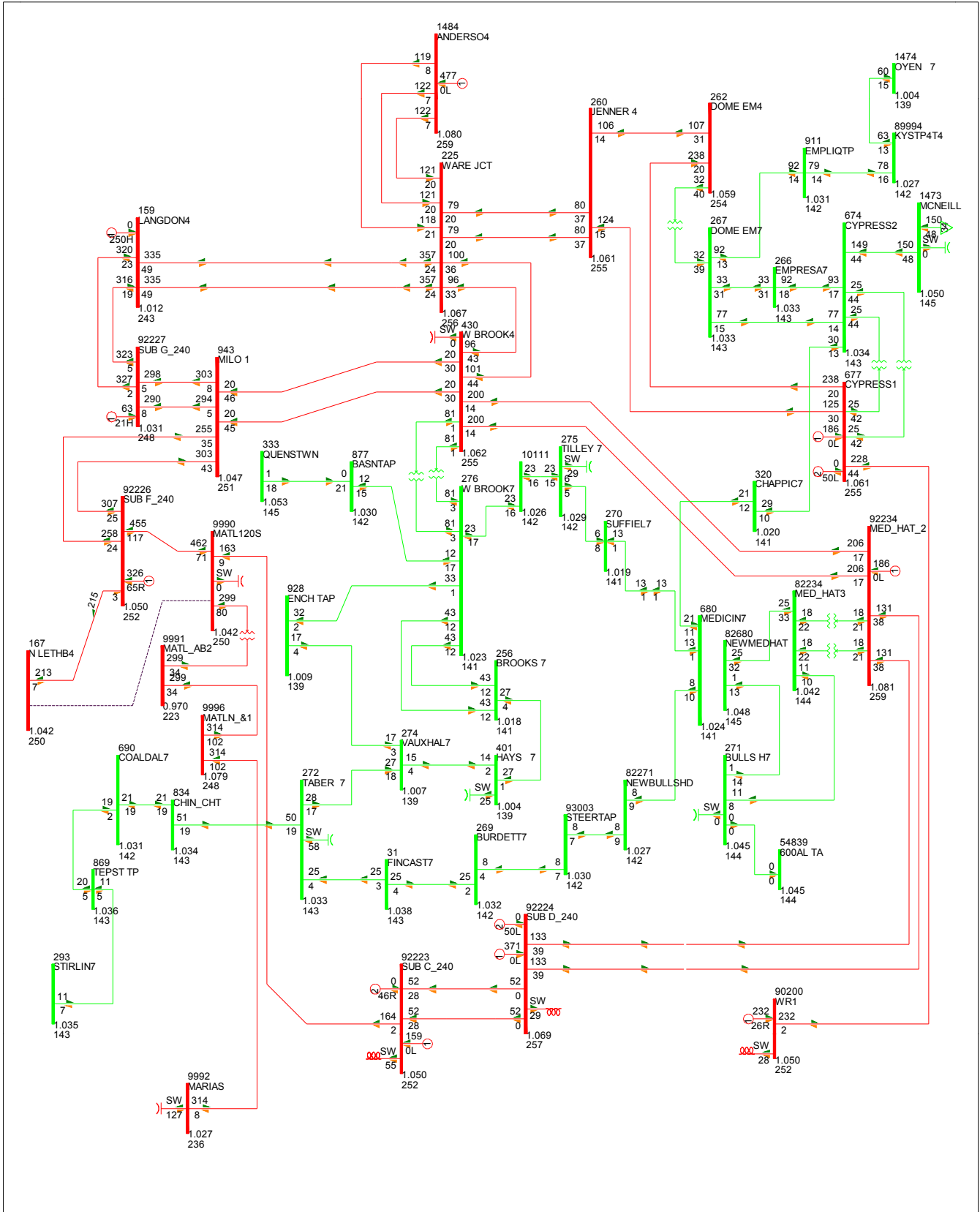


FIG 2017-1A-SP-M-7: N. LETHBRIDGE TO MATL 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -45 MW

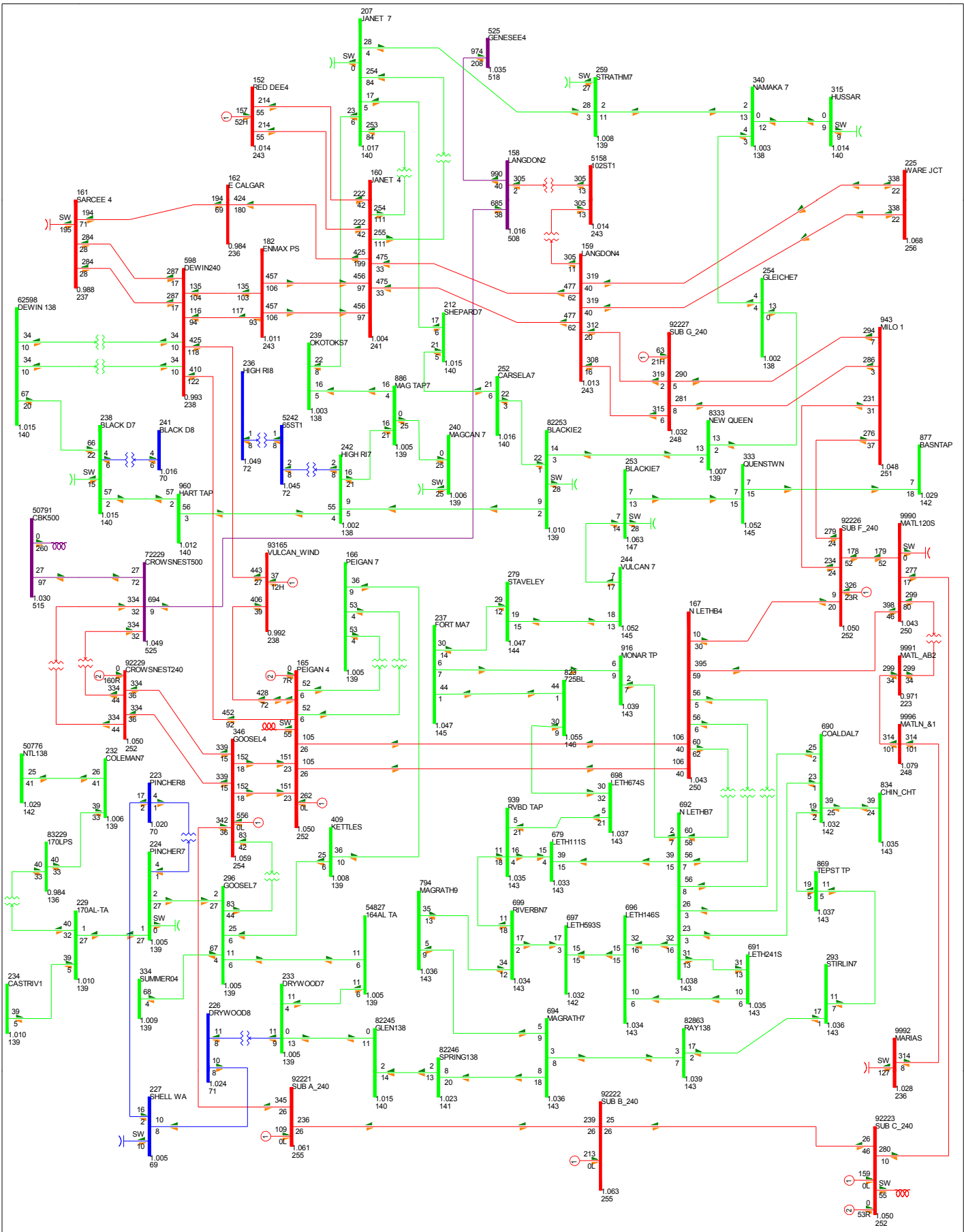


FIG 2017-1A-SP-M-8: WARE JUNCTION TO WESTBROOKS 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -37 MW

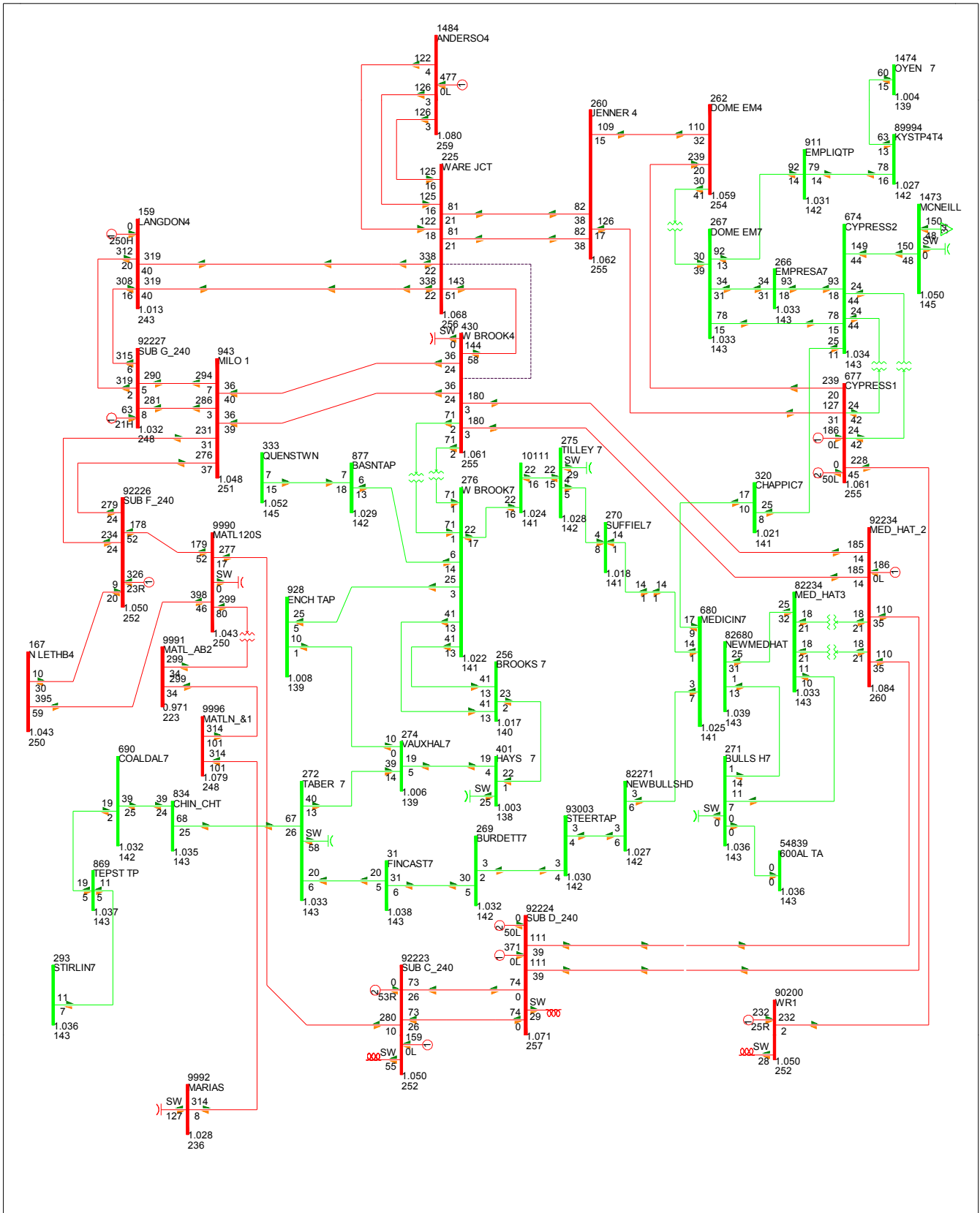


FIG 2017-1A-SP-M-9: WARE JUNCTION TO WESTBROOKS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -37 MW

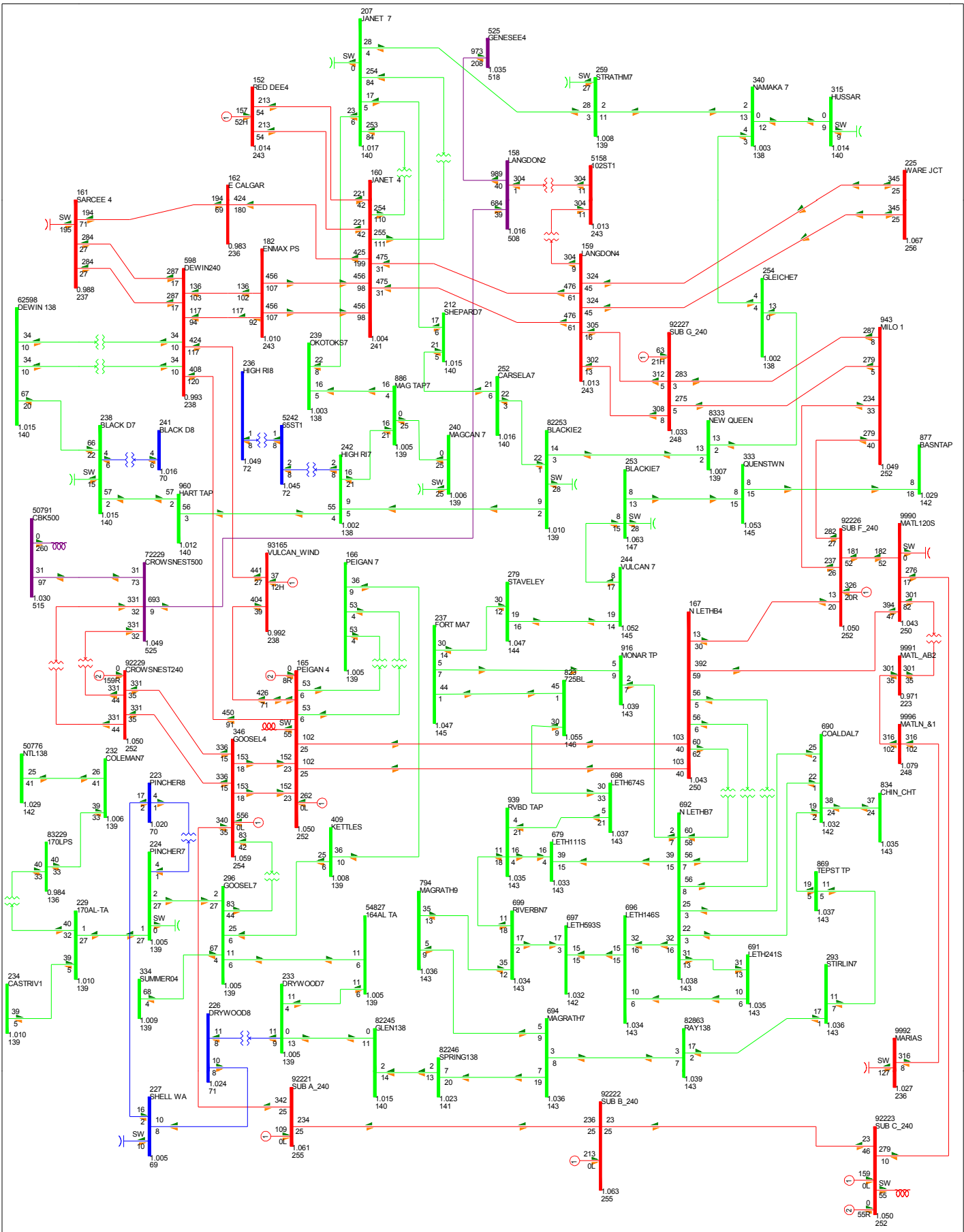


FIG 2017-1A-SP-M-10: JENNER TO CYPRESS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -41 MW

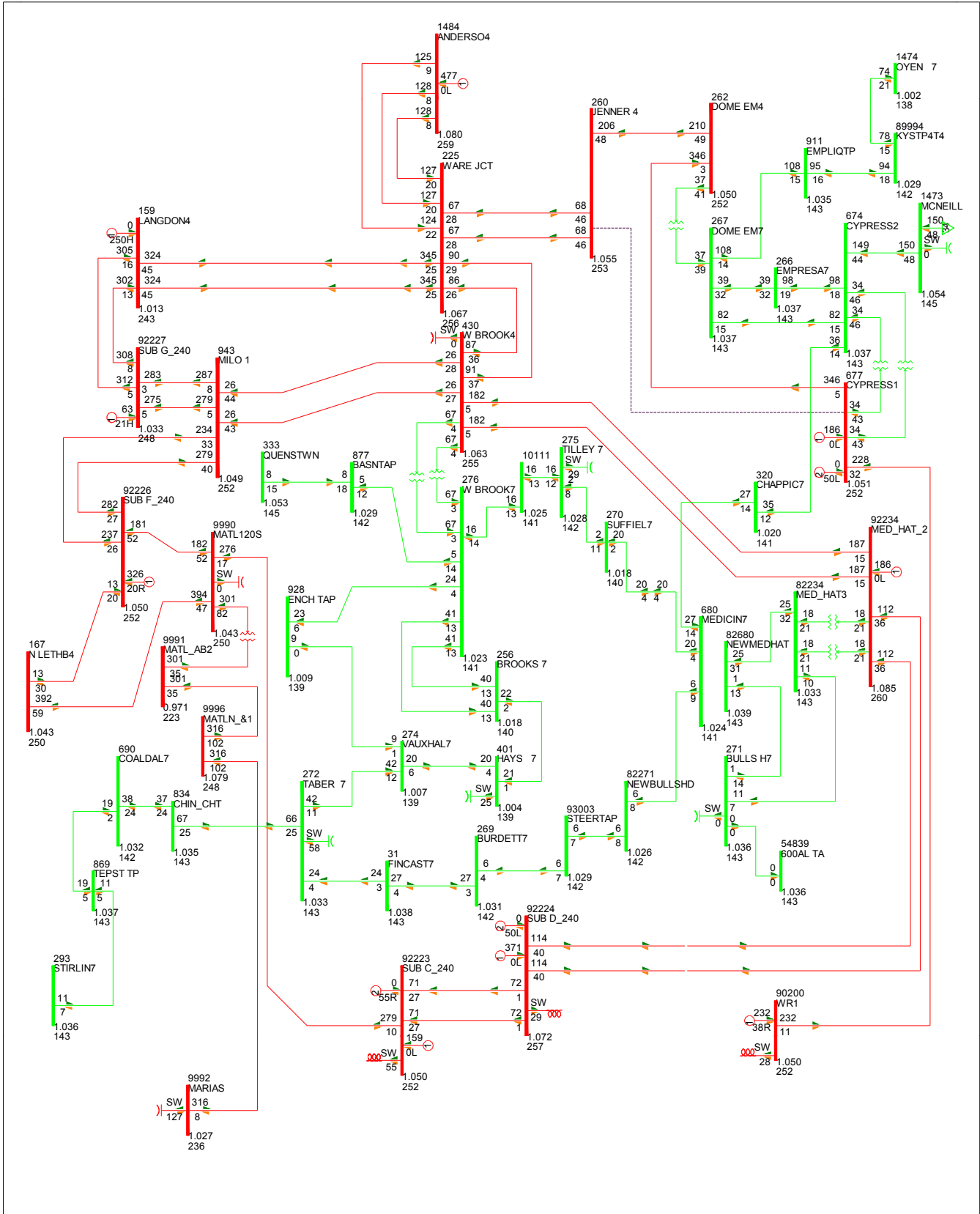


FIG 2017-1A-SP-M-11: JENNER TO CYPRESS 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -41 MW

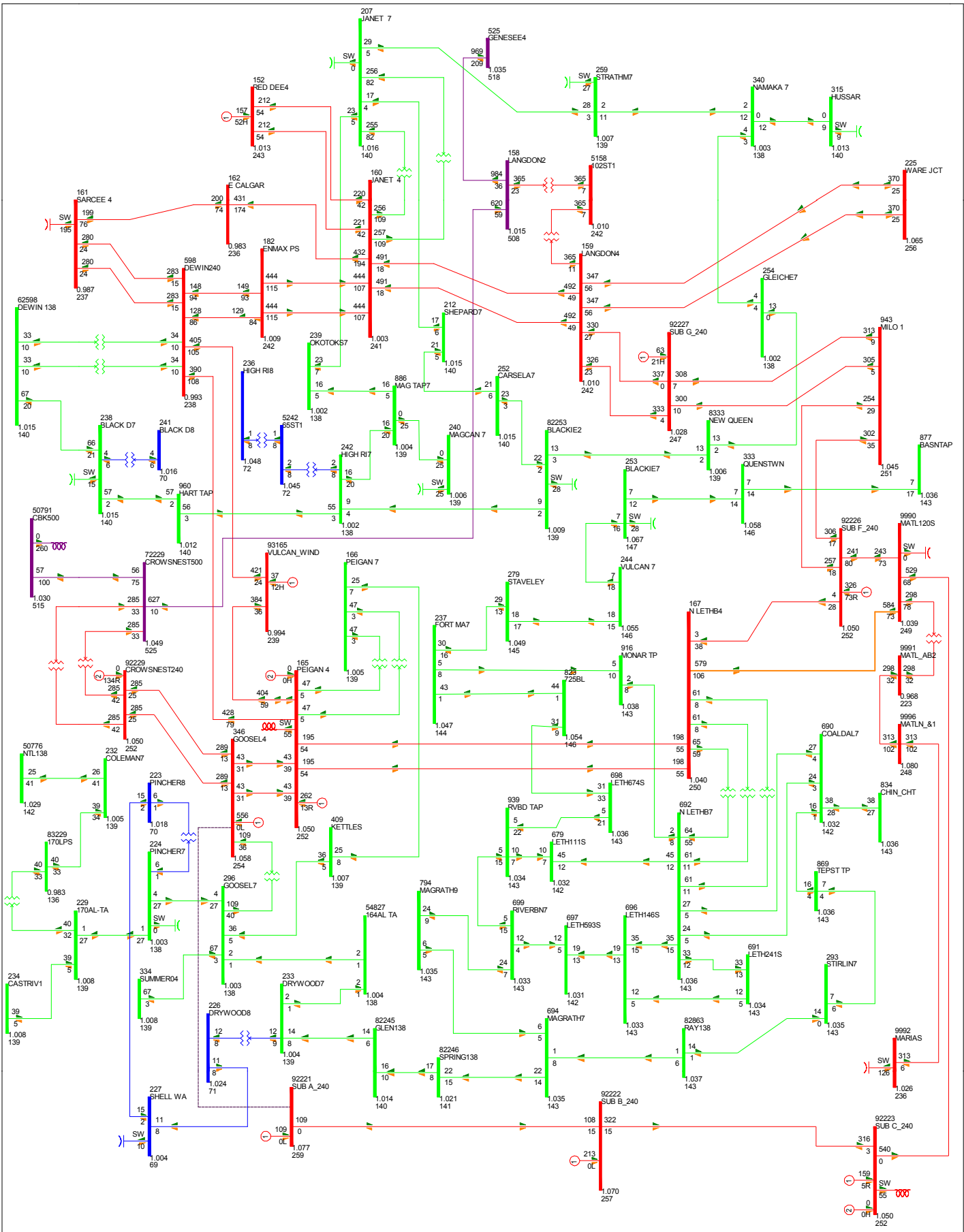


FIG 2017-1A-SP-M-12: GOOSELAKE TO SUB A 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -65 MW

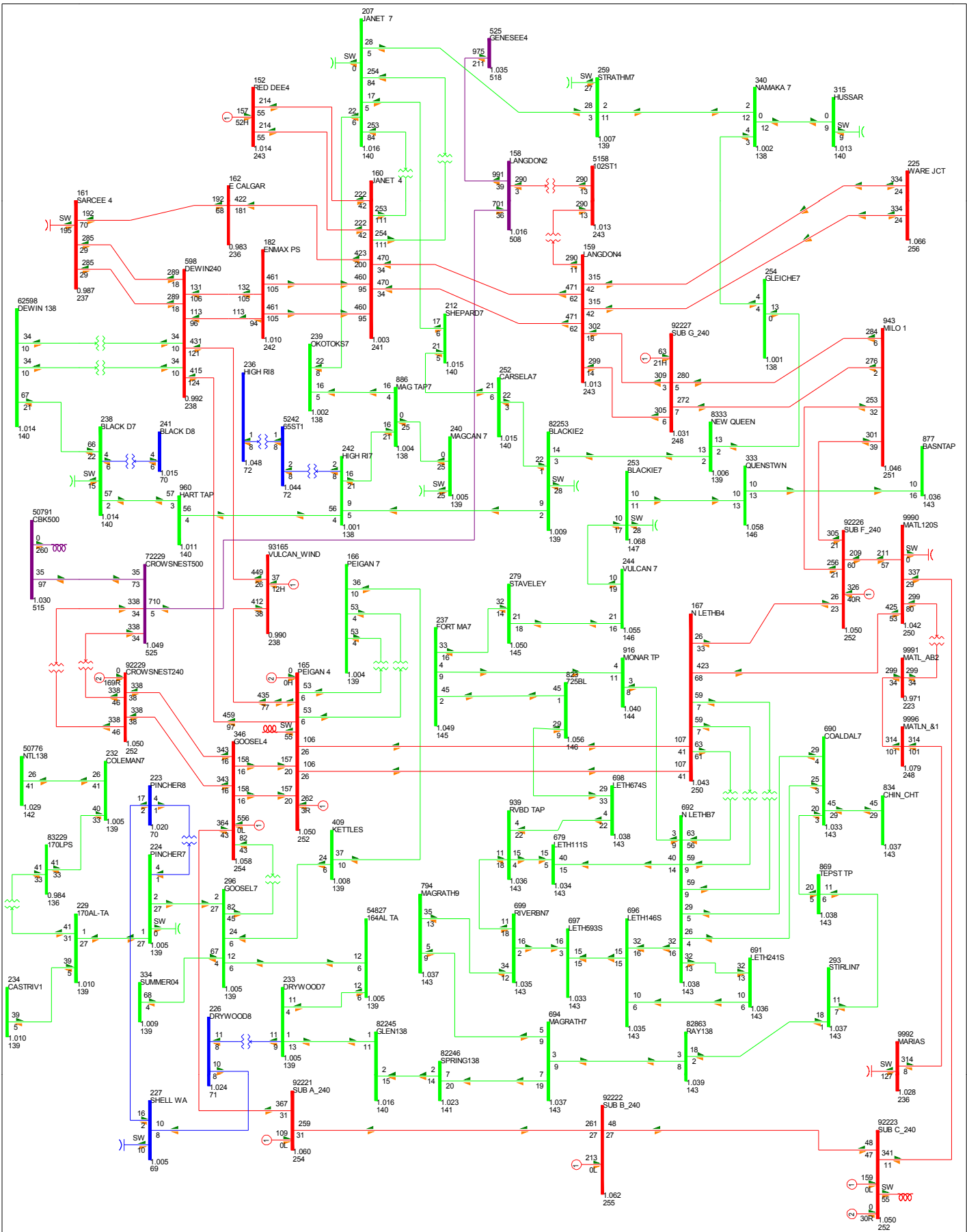


FIG 2017-1A-SP-M-14: WESTBROOKS TO MEDHAT 2 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -45 MW

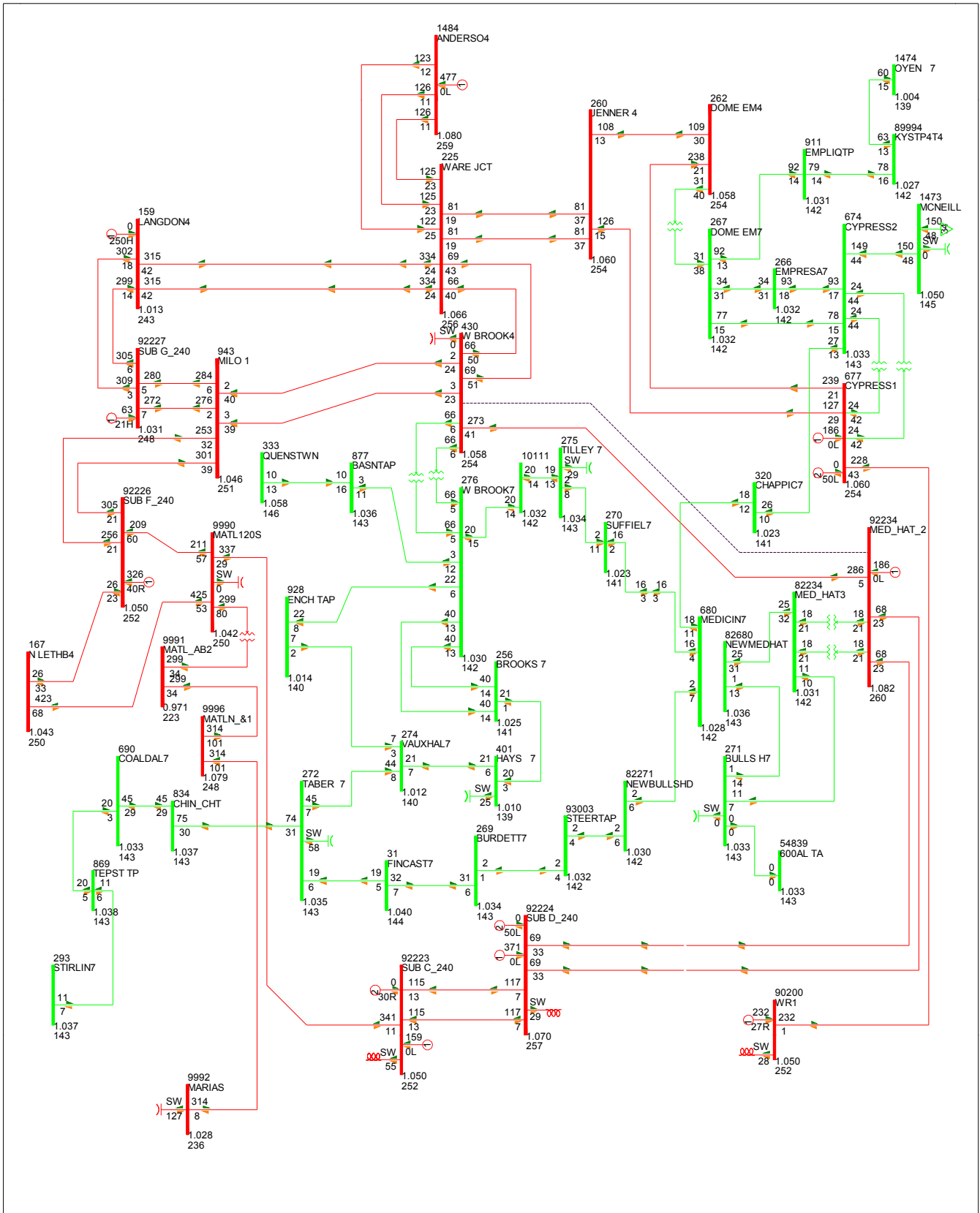


FIG 2017-1A-SP-M-15: WESTBROOKS TO MEDHAT 2 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -45 MW

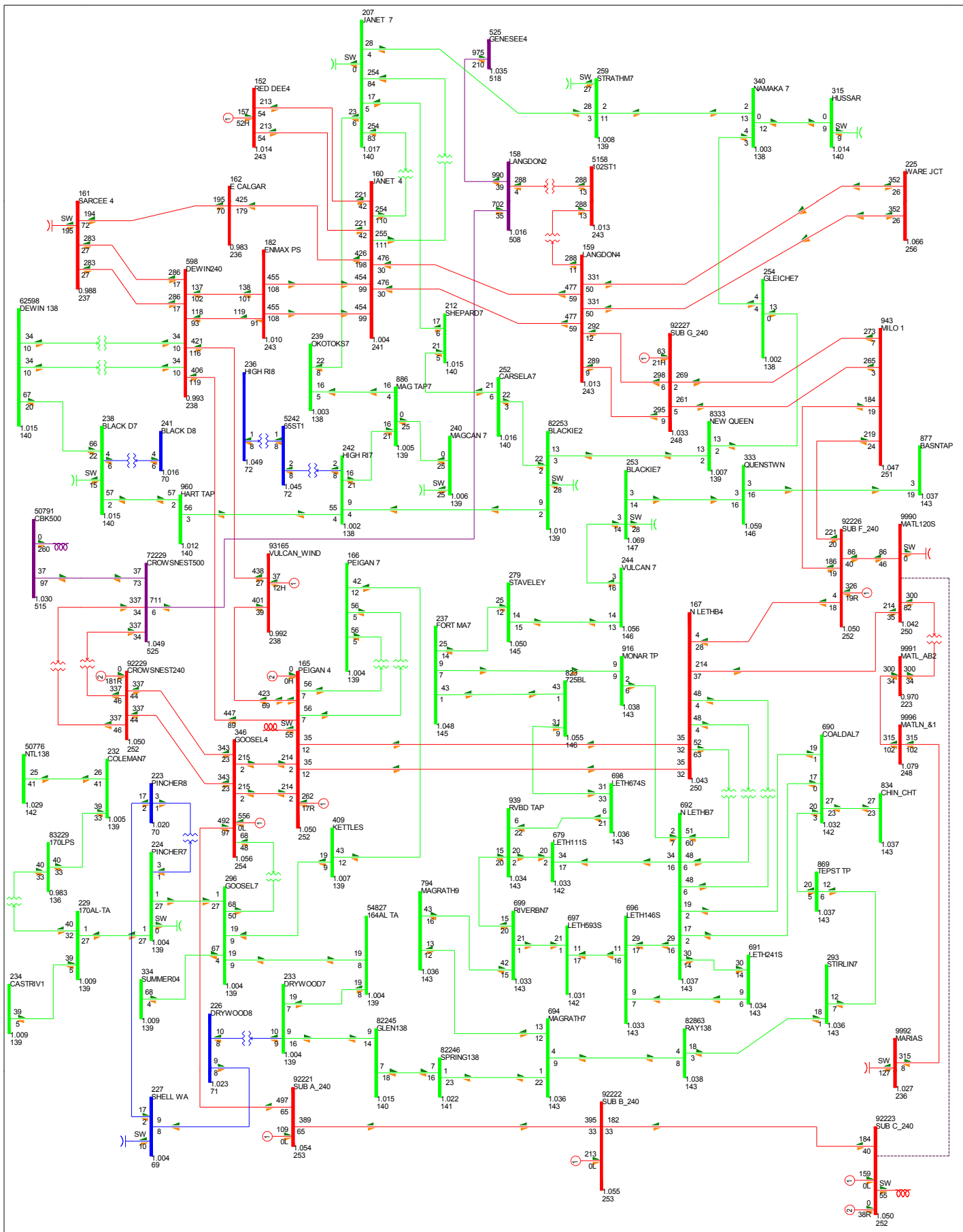


FIG 2017-1A-SP-M-16: SUB C TO MATL 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -48 MW

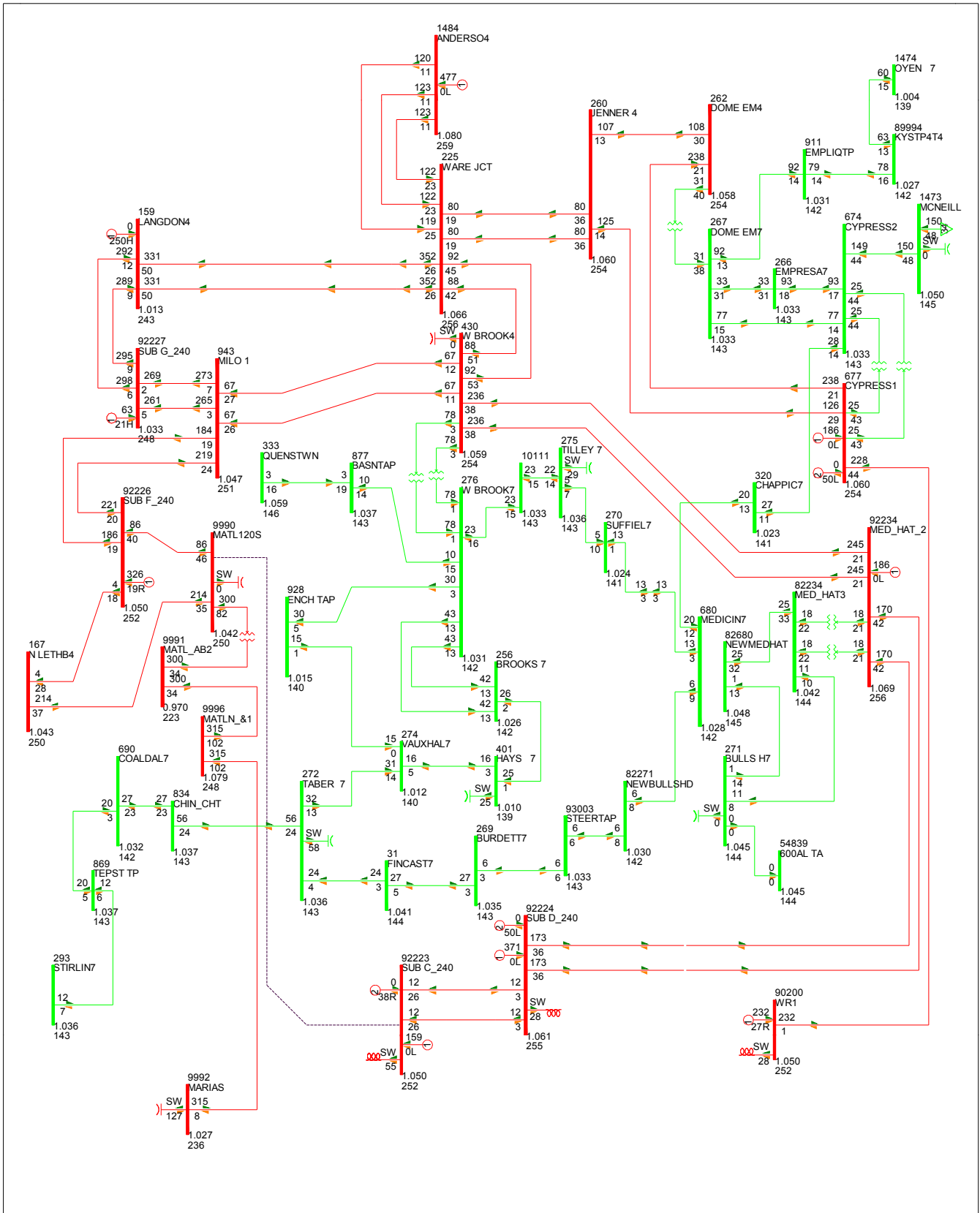


FIG 2017-1A-SP-M-17: SUB C TO MATL 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -48 MW

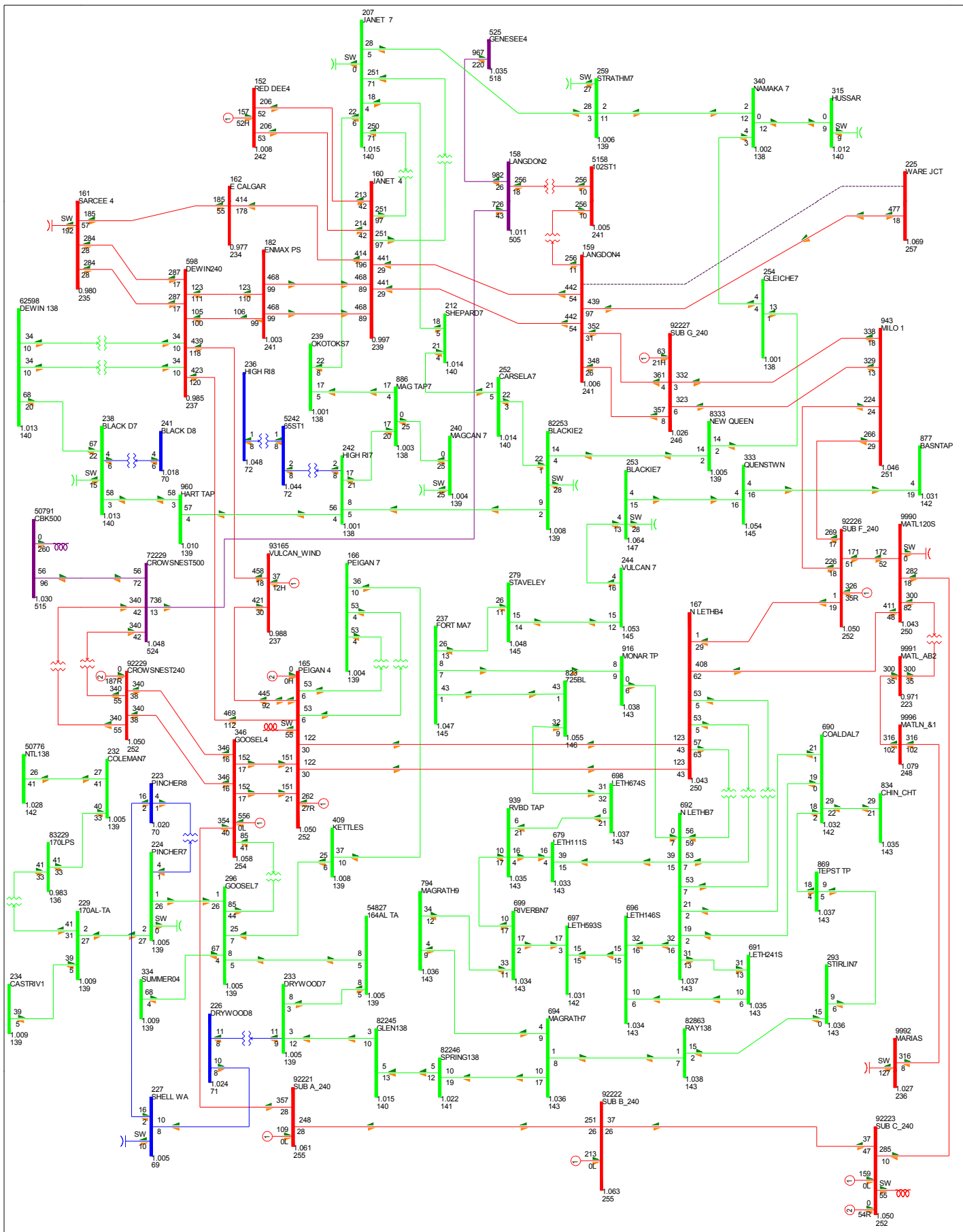


FIG 2017-1A-SP-M-18: WARE JUNCTION TO LANGDON 240 KV

MATL 300 MW IMPORT SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -67 MW

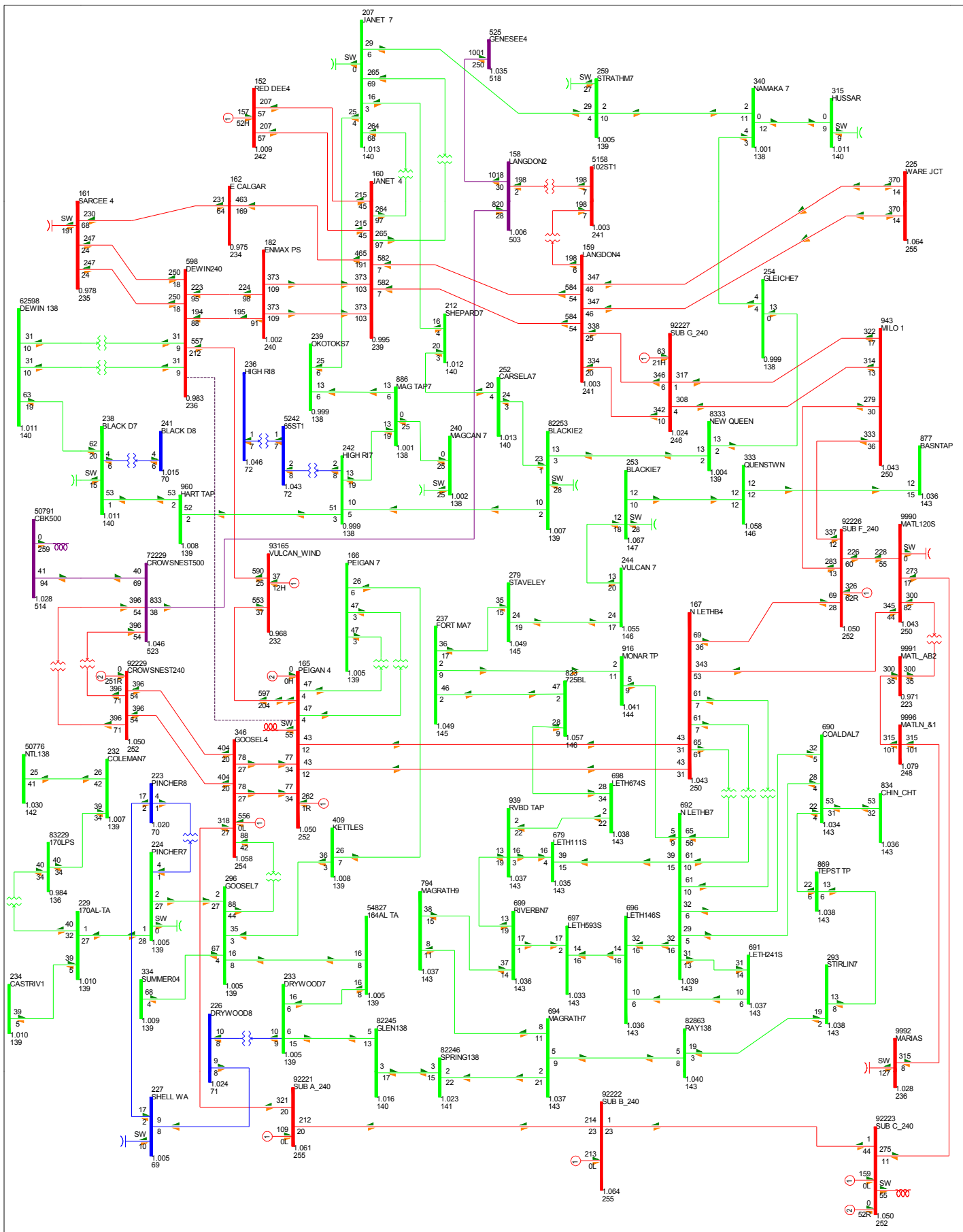


FIG 2017-1A-SP-M-20: PEIGAN TO DEWINTON 240 KV
 MATL 300 MW IMPORT SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -60 MW

GENERATION DISPATCH REPORT

GROSS COAL GEN. 3241.5 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.

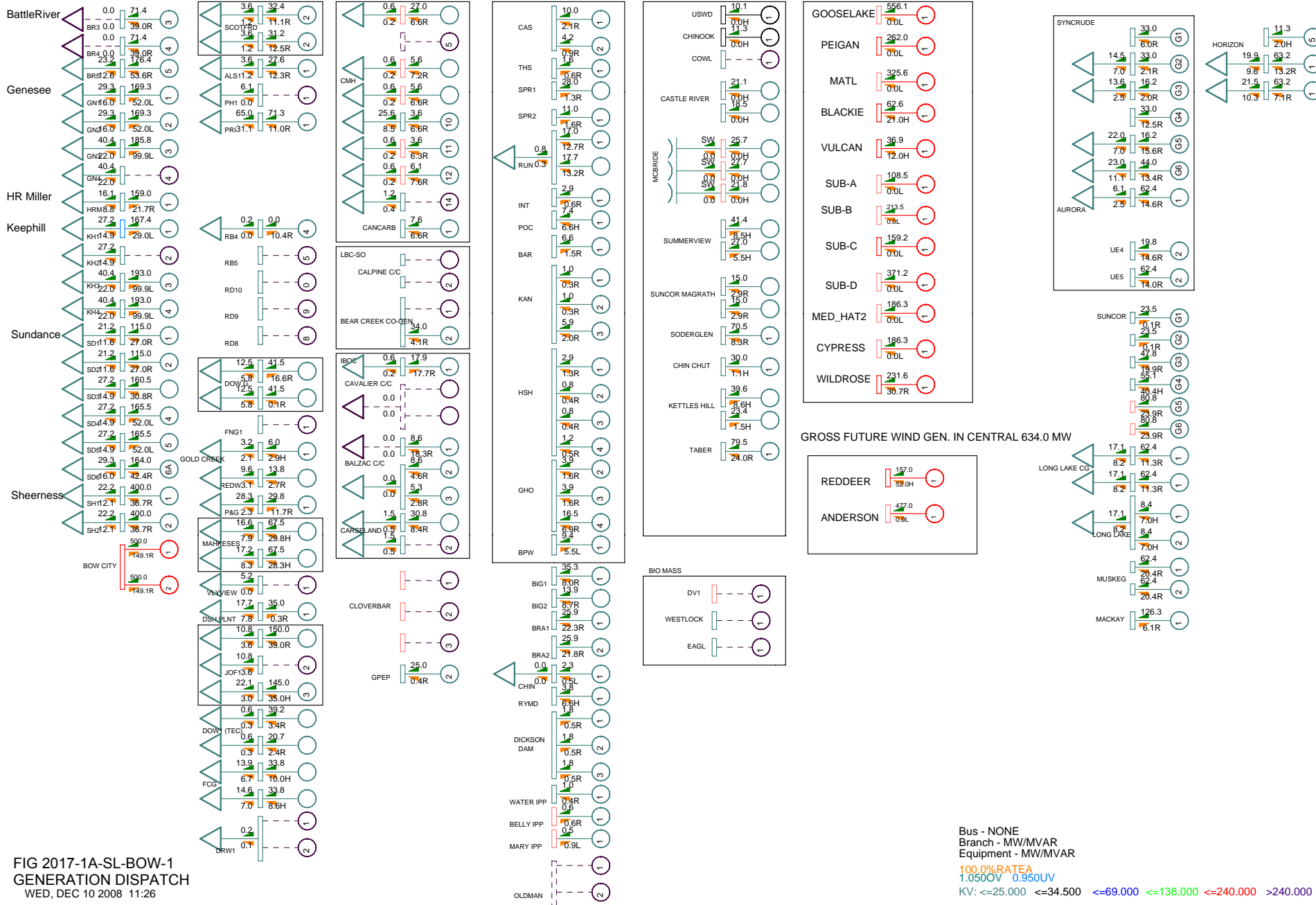


FIG 2017-1A-SL-BOW-1
GENERATION DISPATCH
WED, DEC 10 2008 11:26

Bus - NONE
Branch - MW/MVAR
Equipment - MW/MVAR
100.0% RATE A
1.0500V 0.950LV
KV: <=25.000 <=34.500 <=69.000 <=138.000 <=240.000 >240.000

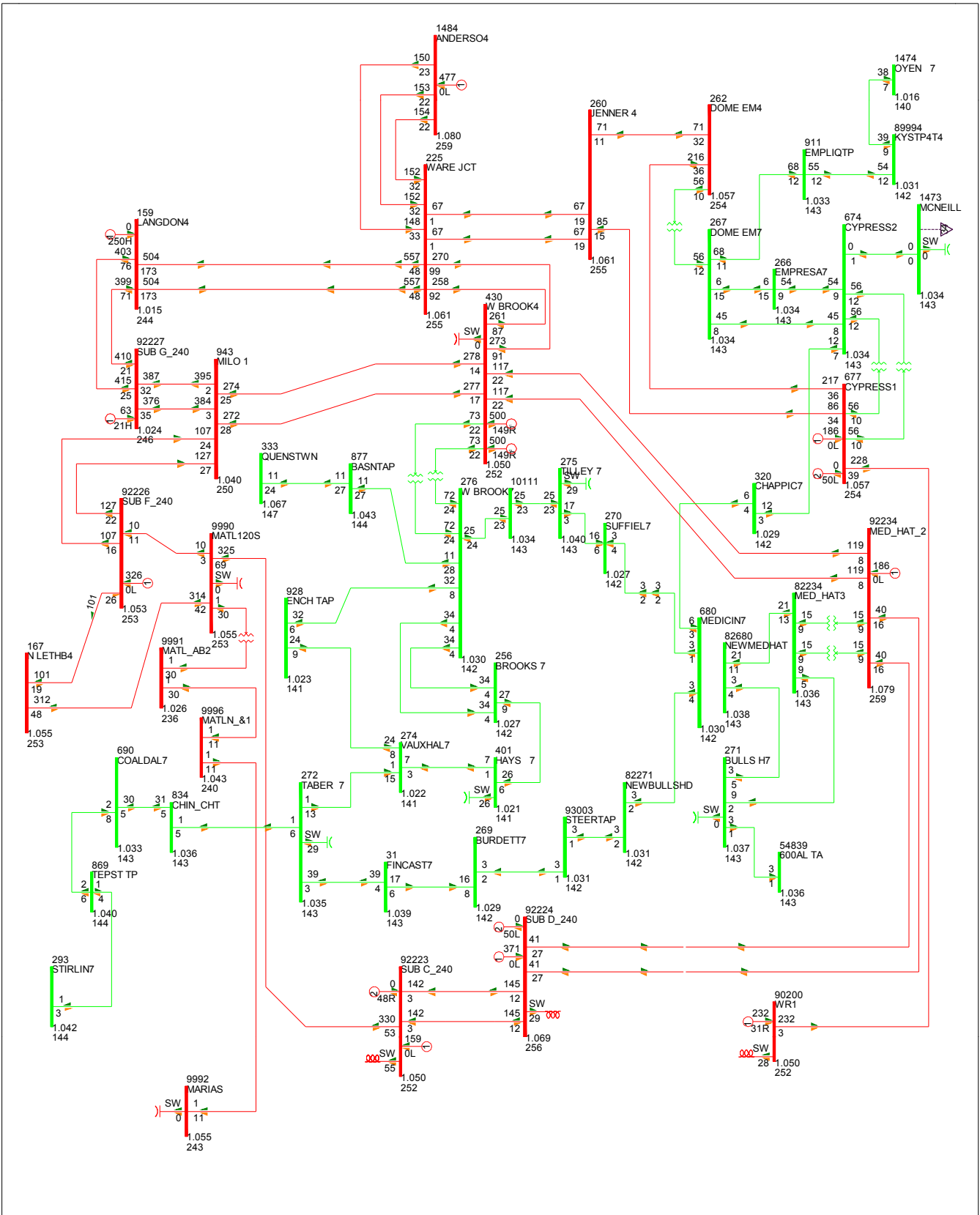


FIG 2017-1A-SL-BOW-3: N-0 CONDITION
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1001 MW

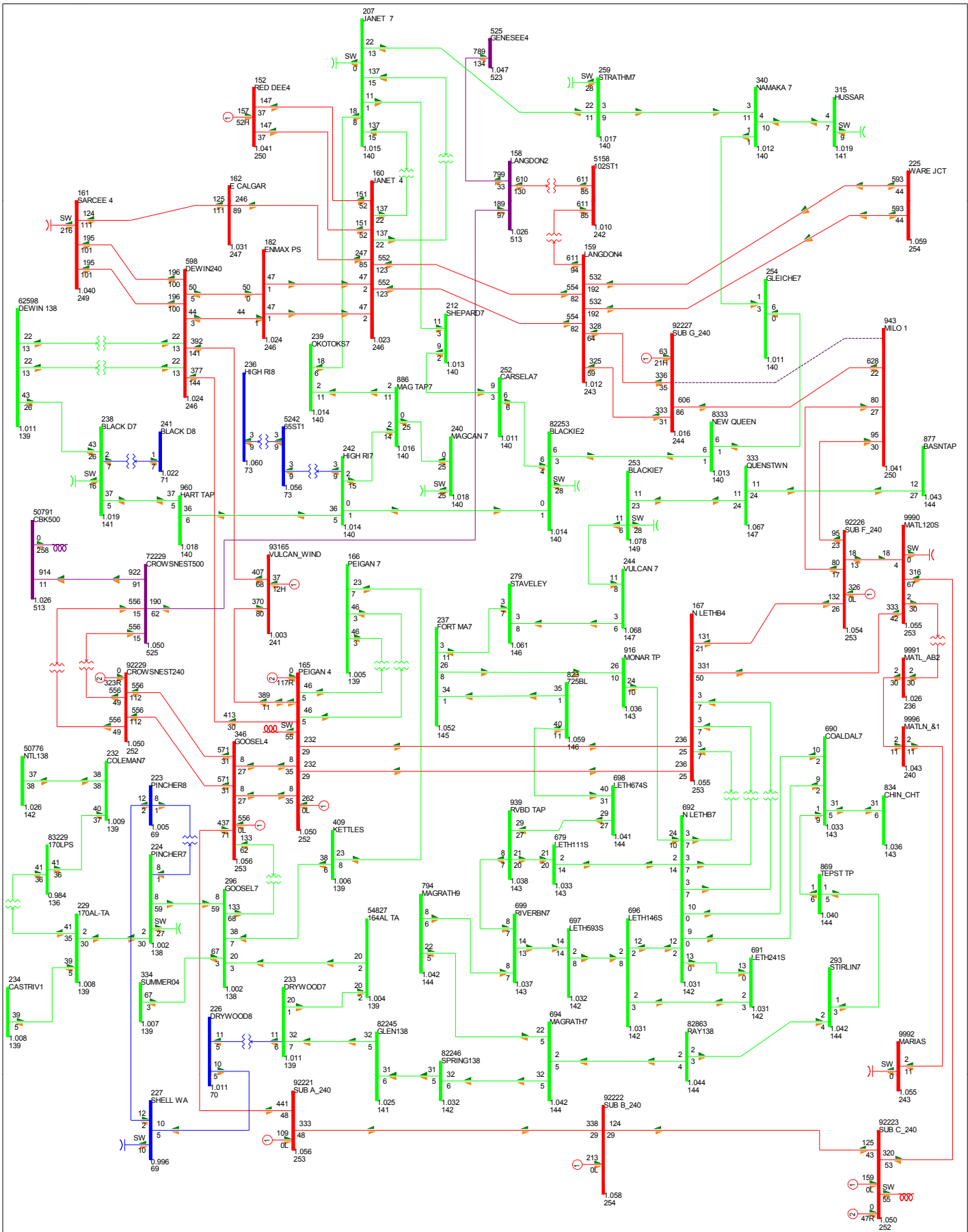


FIG 2017-1A-SL-BOW-4: MILO TO SUB G 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 974 MW

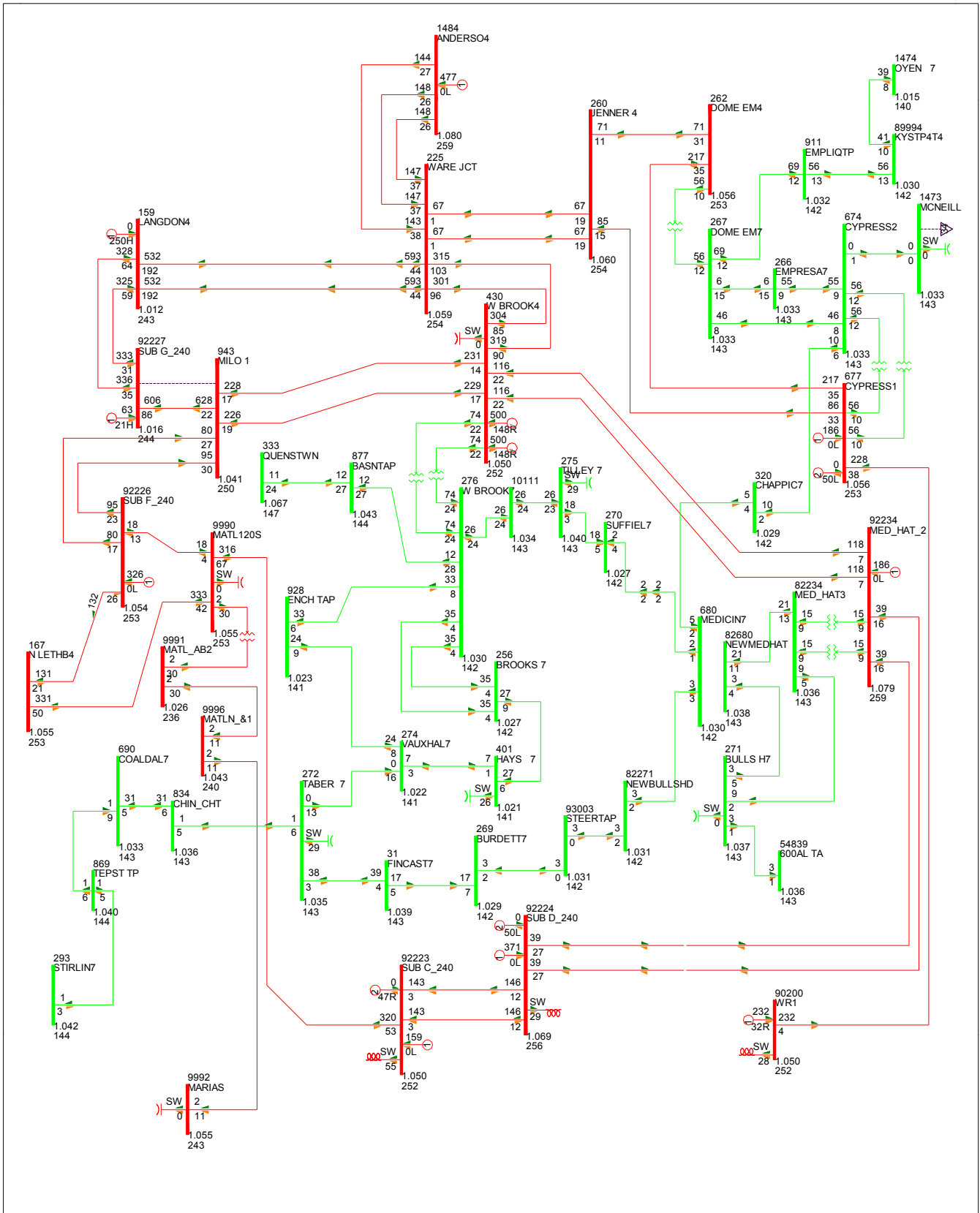


FIG 2017-1A-SL-BOW-5: MILO TO SUB G 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 974 MW

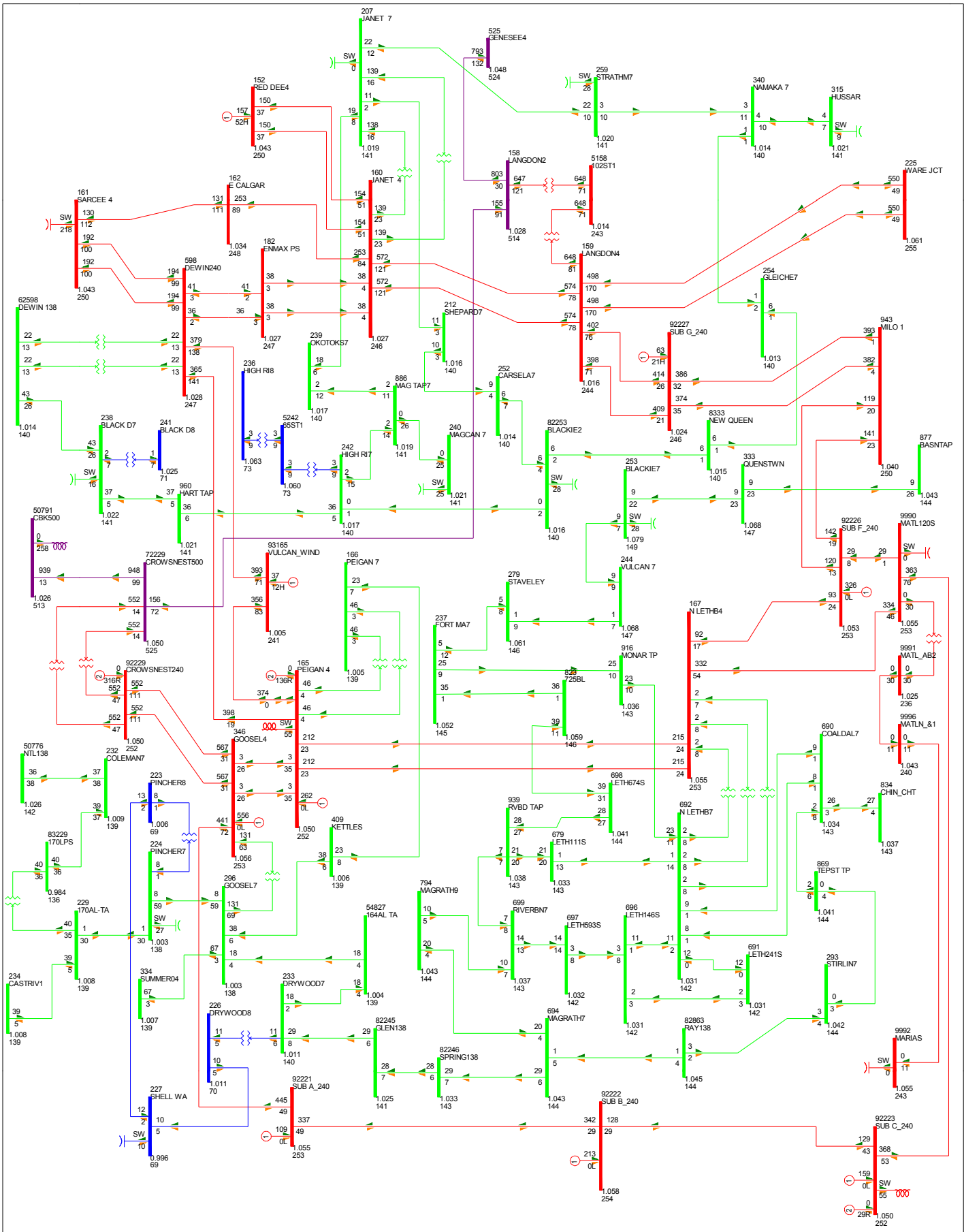


FIG 2017-1A-SL-BOW-6: WESTBROOKS TO MEDHAT2 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 1001 MW

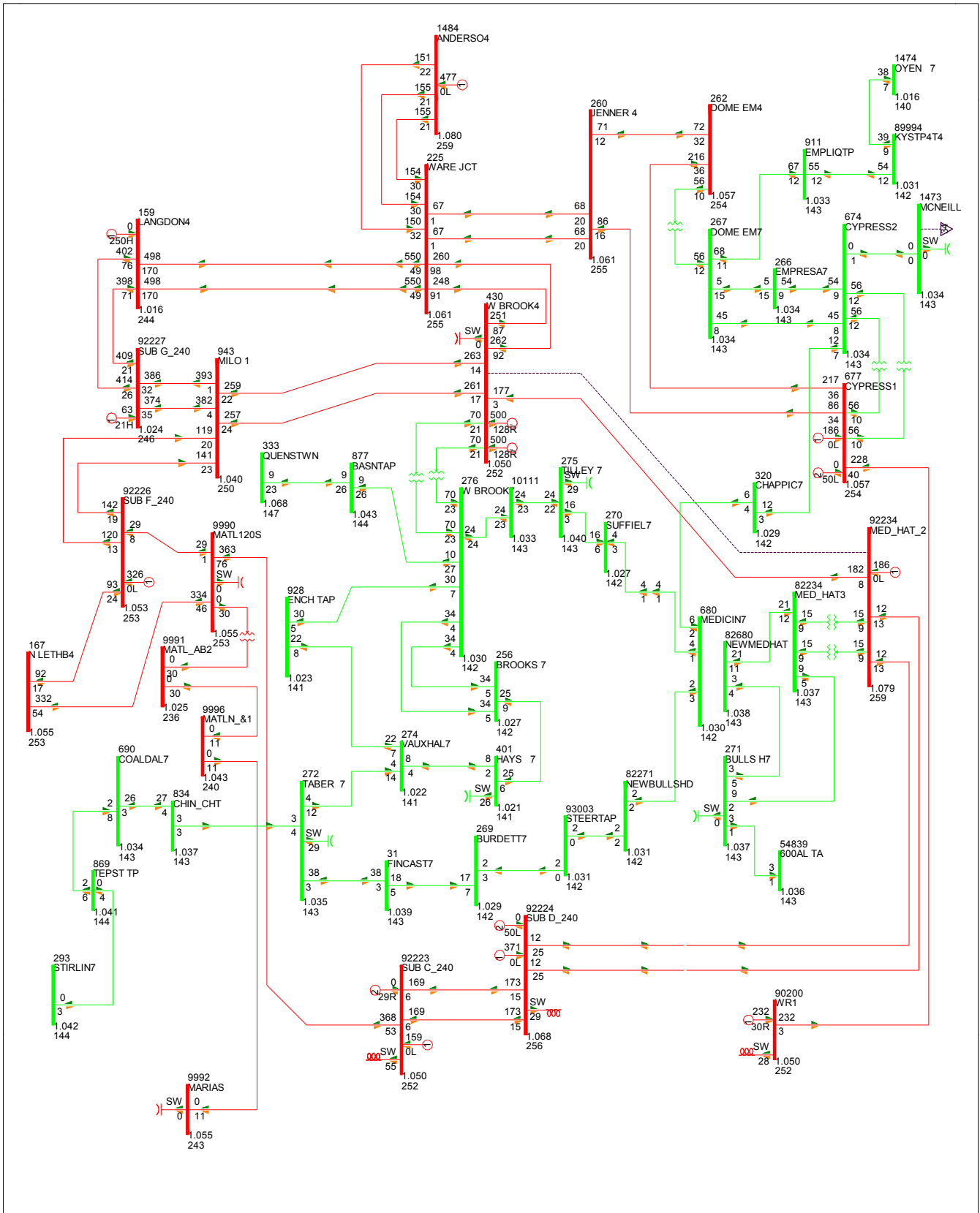


FIG 2017-1A-SL-BOW-7: WESTBROOKS TO MEDHAT2 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:33

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1001 MW

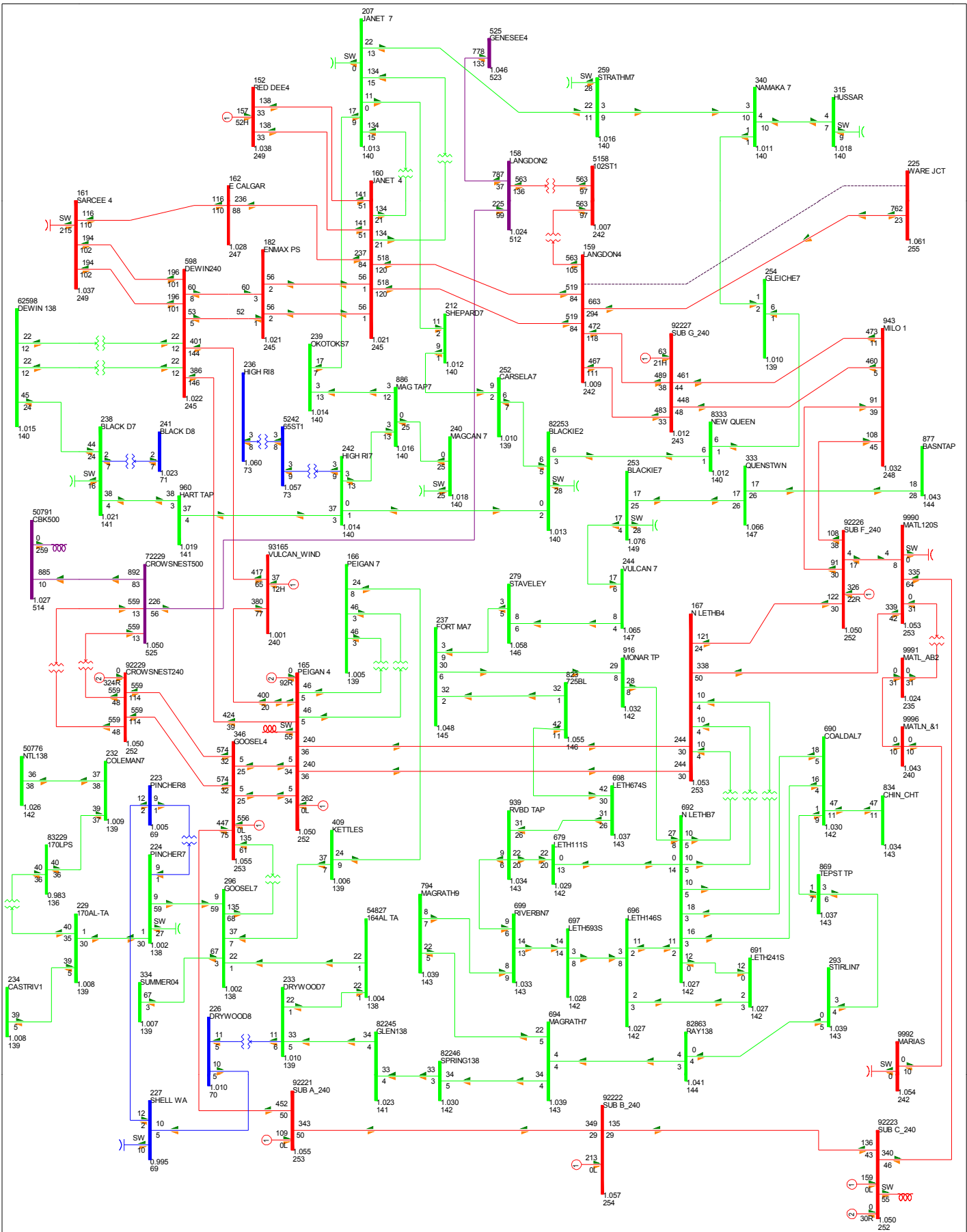


FIG 2017-1A-SL-BOW-8: WARE JUNCTION TO LANGDON 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 942 MW

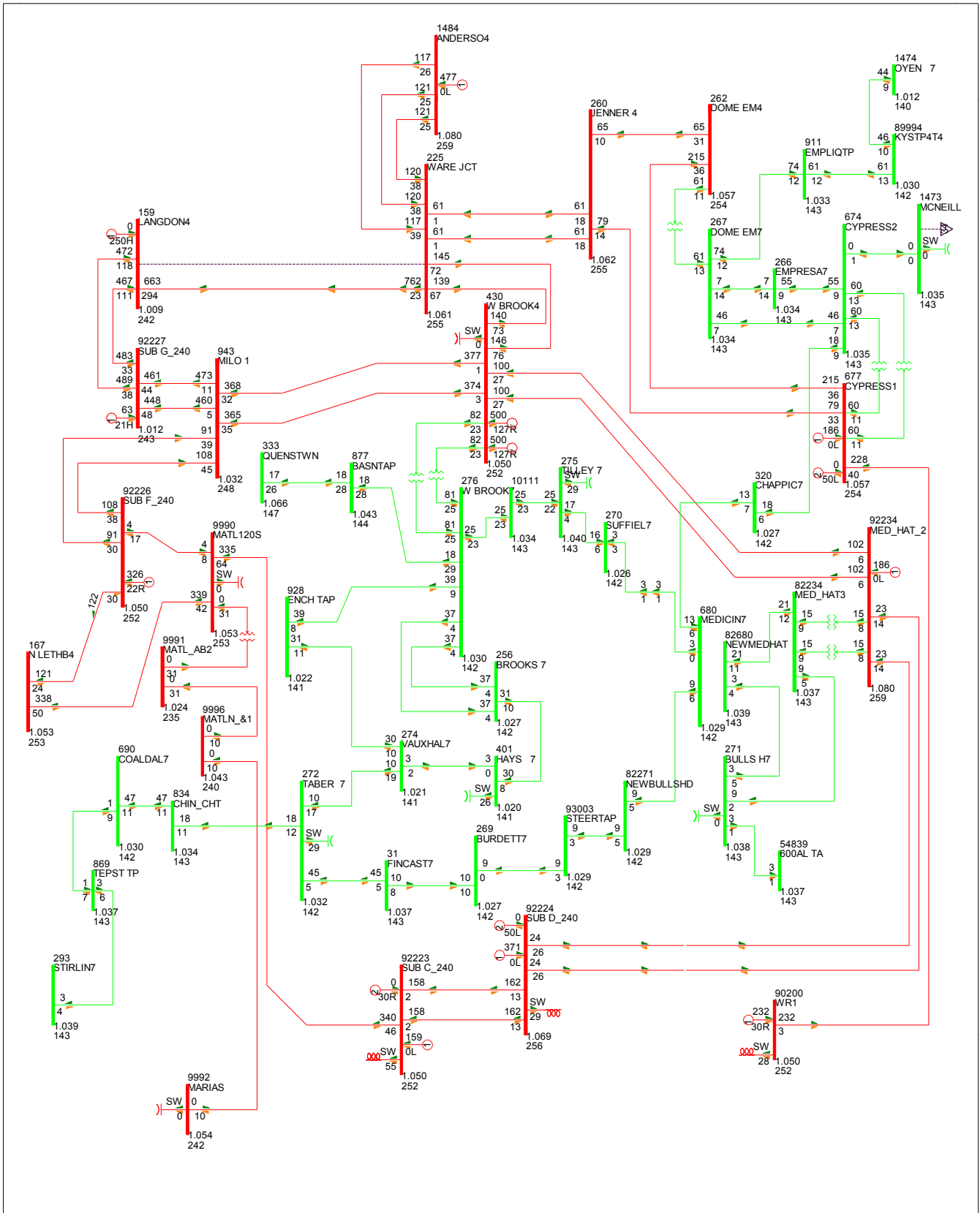


FIG 2017-1A-SL-BOW-9: WARE JUNCTION TO LANGDON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 942 MW

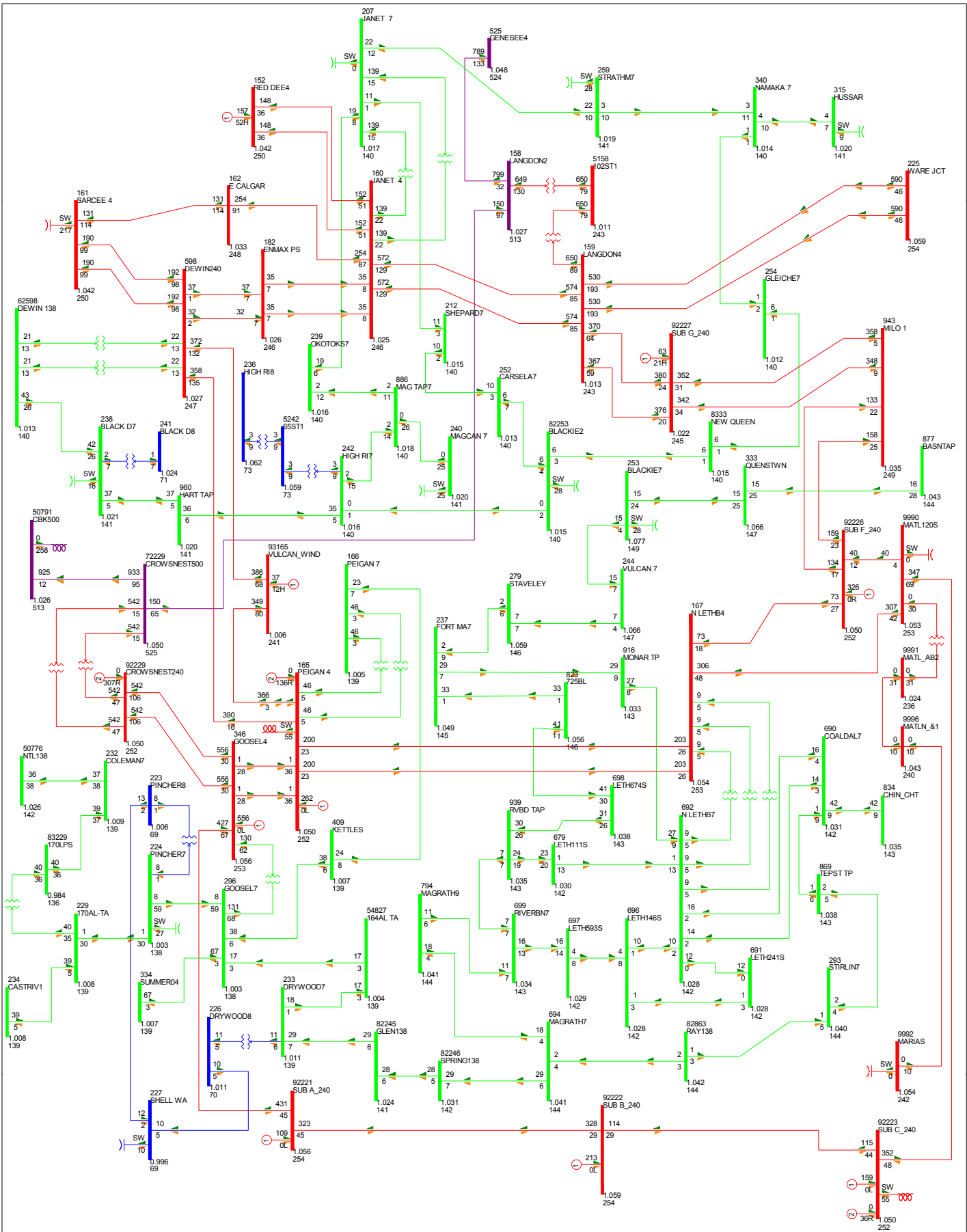


FIG 2017-1A-SL-BOW-10: WESTBROOKS TO MILO 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 987 MW

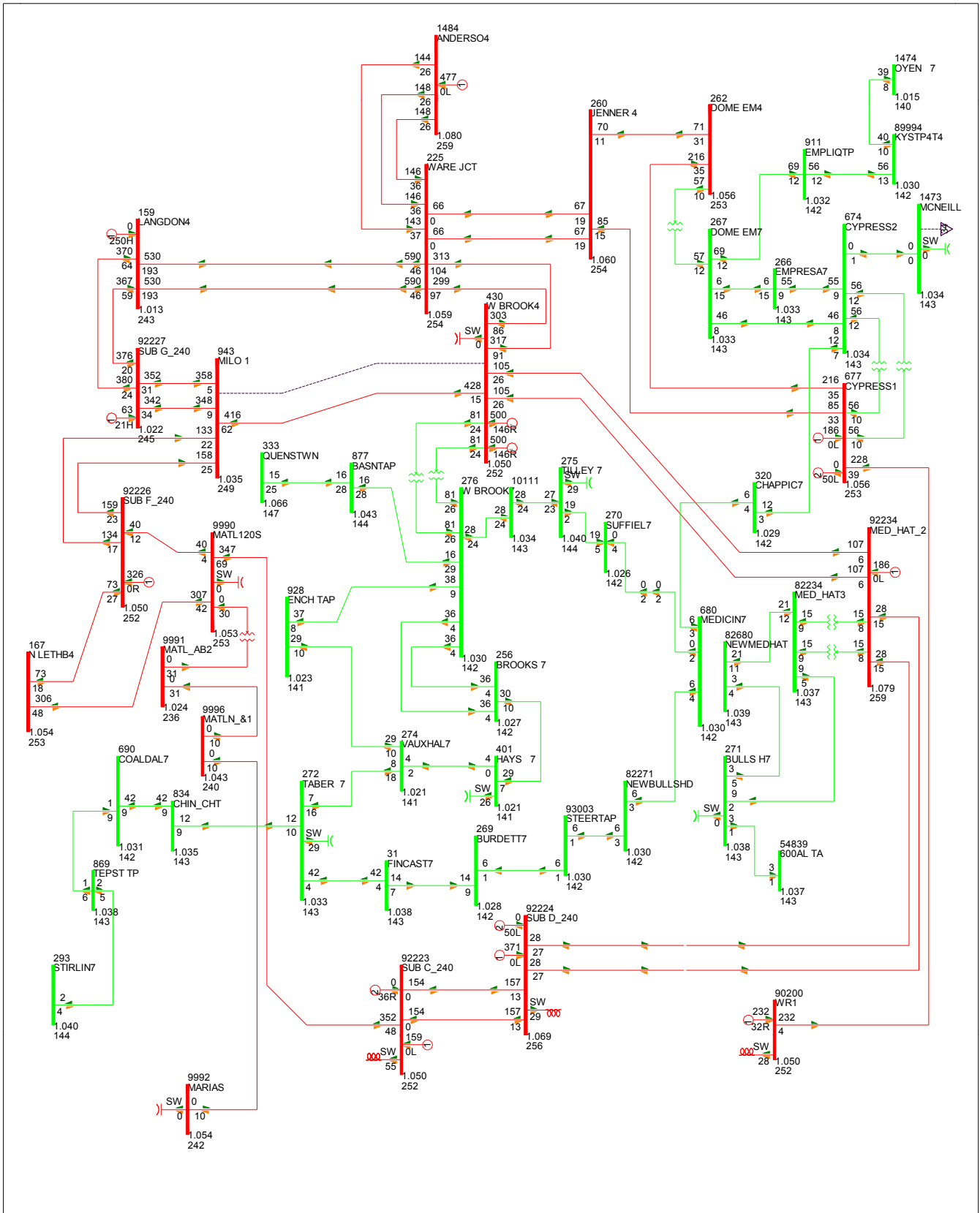


FIG 2017-1A-SL-BOW-11: WESTBROOKS TO MILO 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 987 MW

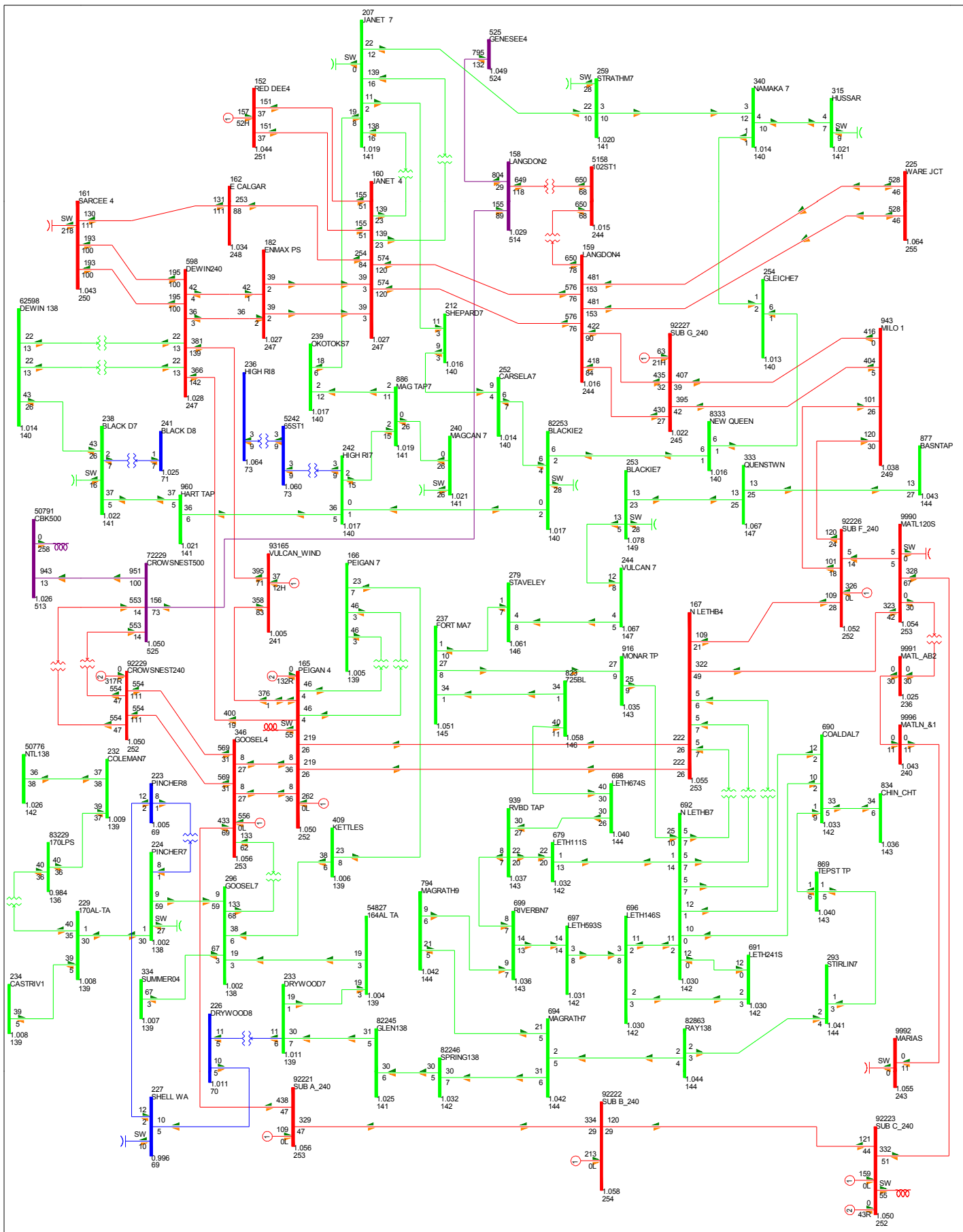


FIG 2017-1A-SL-BOW-12: WEST BROOKS TO WARE JUNC 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1005 MW

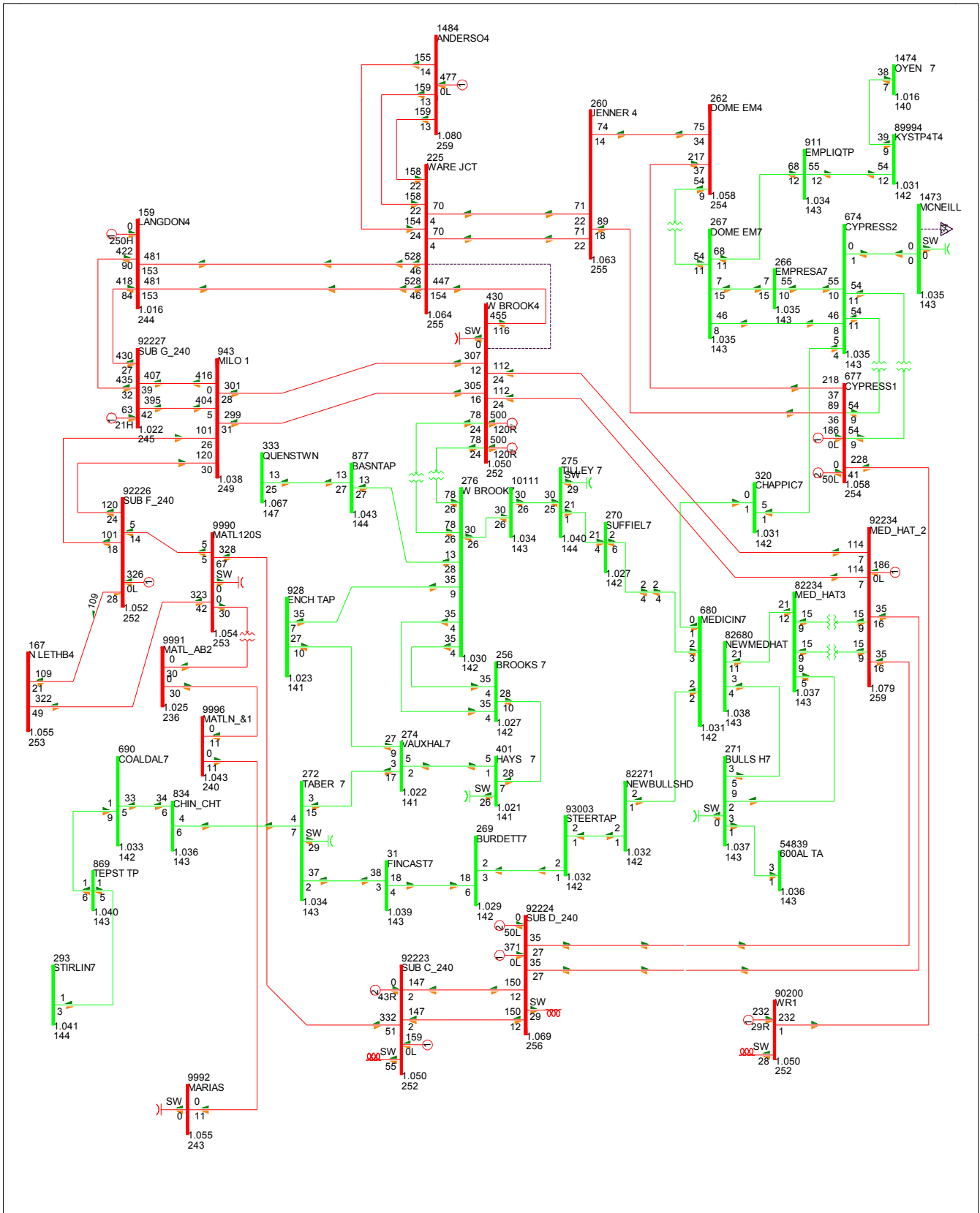


FIG 2017-1A-SL-BOW-13: WEST BROOKS TO WARE JUNC 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1005 MW

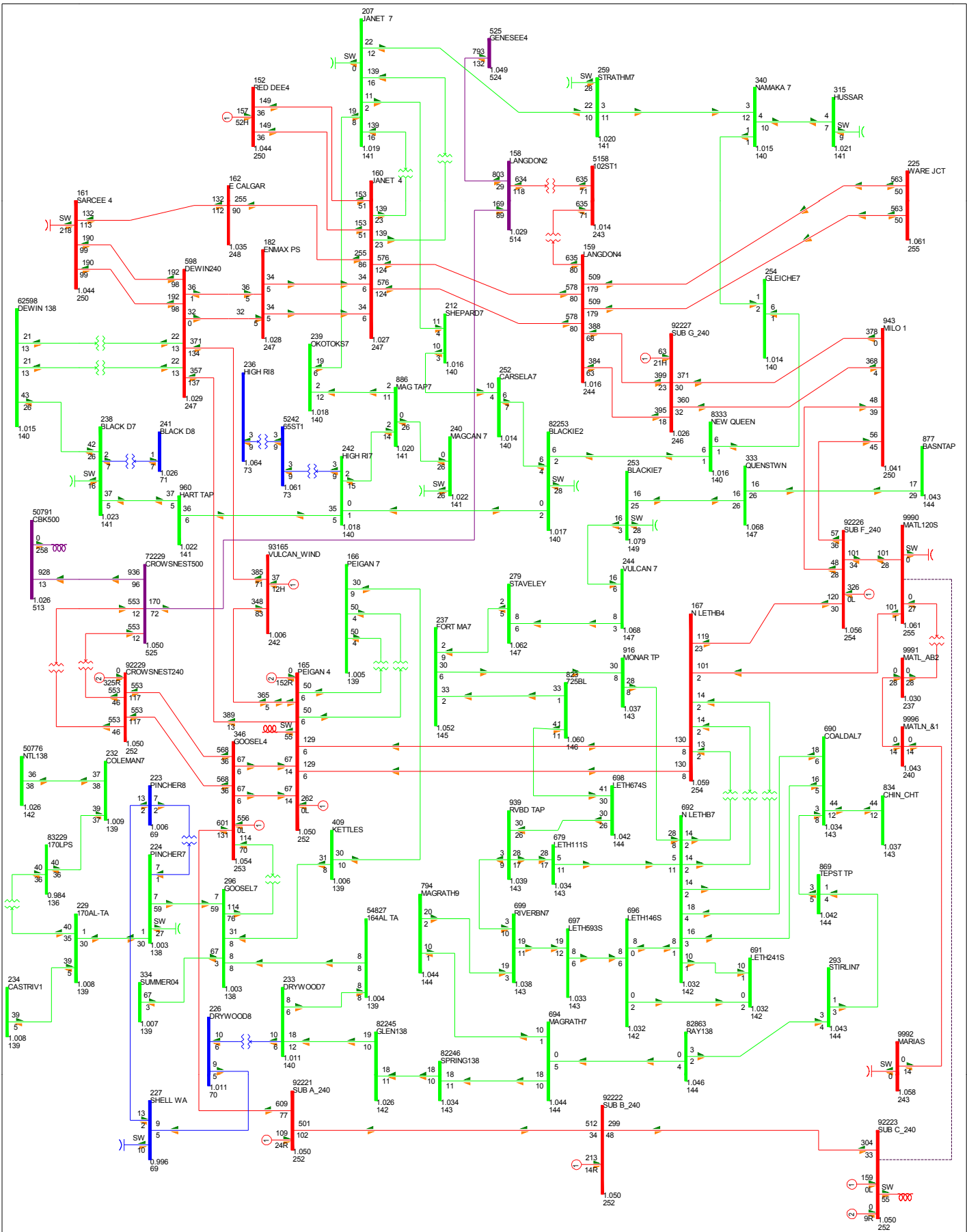


FIG 2017-1A-SL-BOW-14: SUB C TO MATL 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: 989 MW

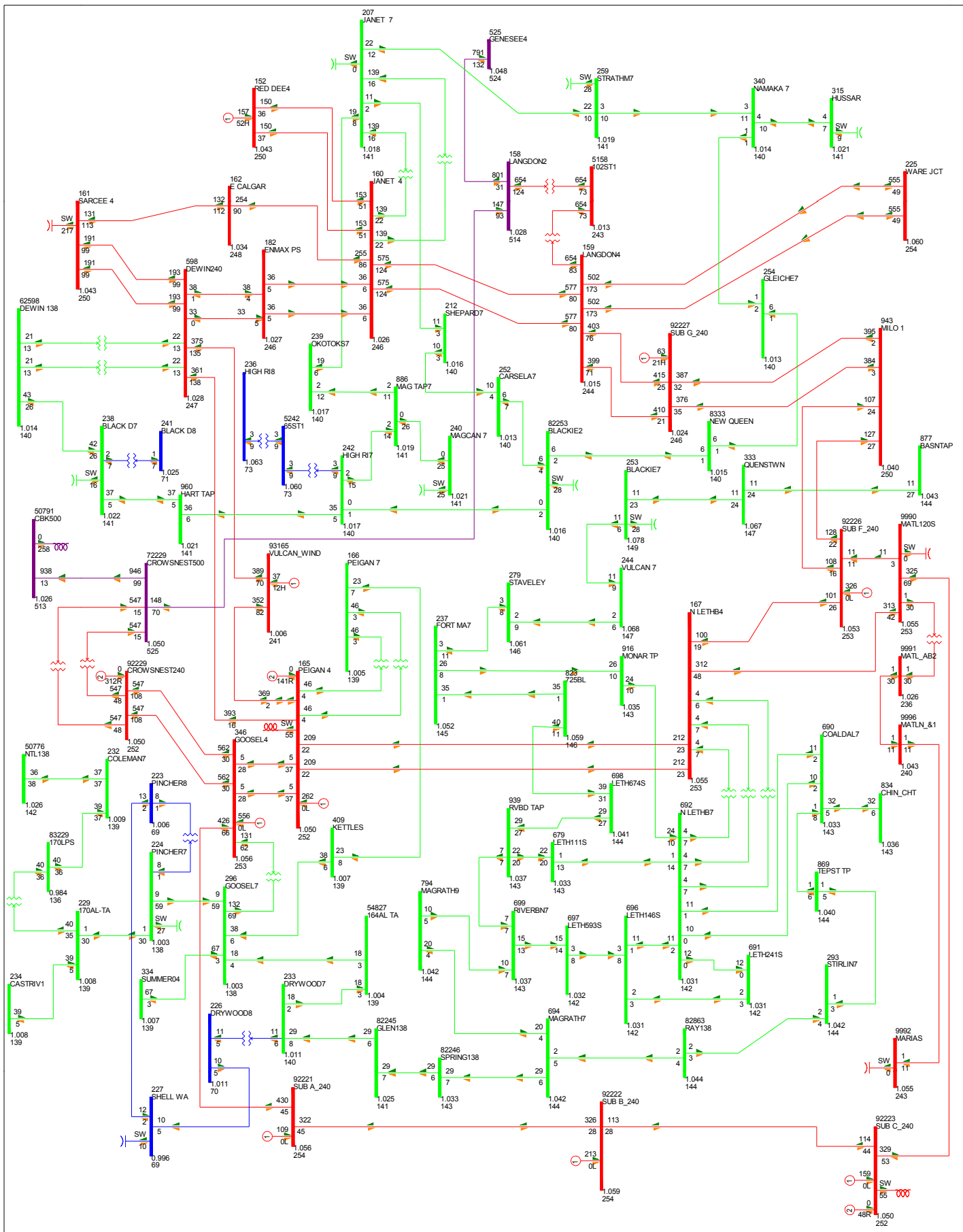


FIG 2017-1A-SL-BOW-16: JENNER TO CYPRESS 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

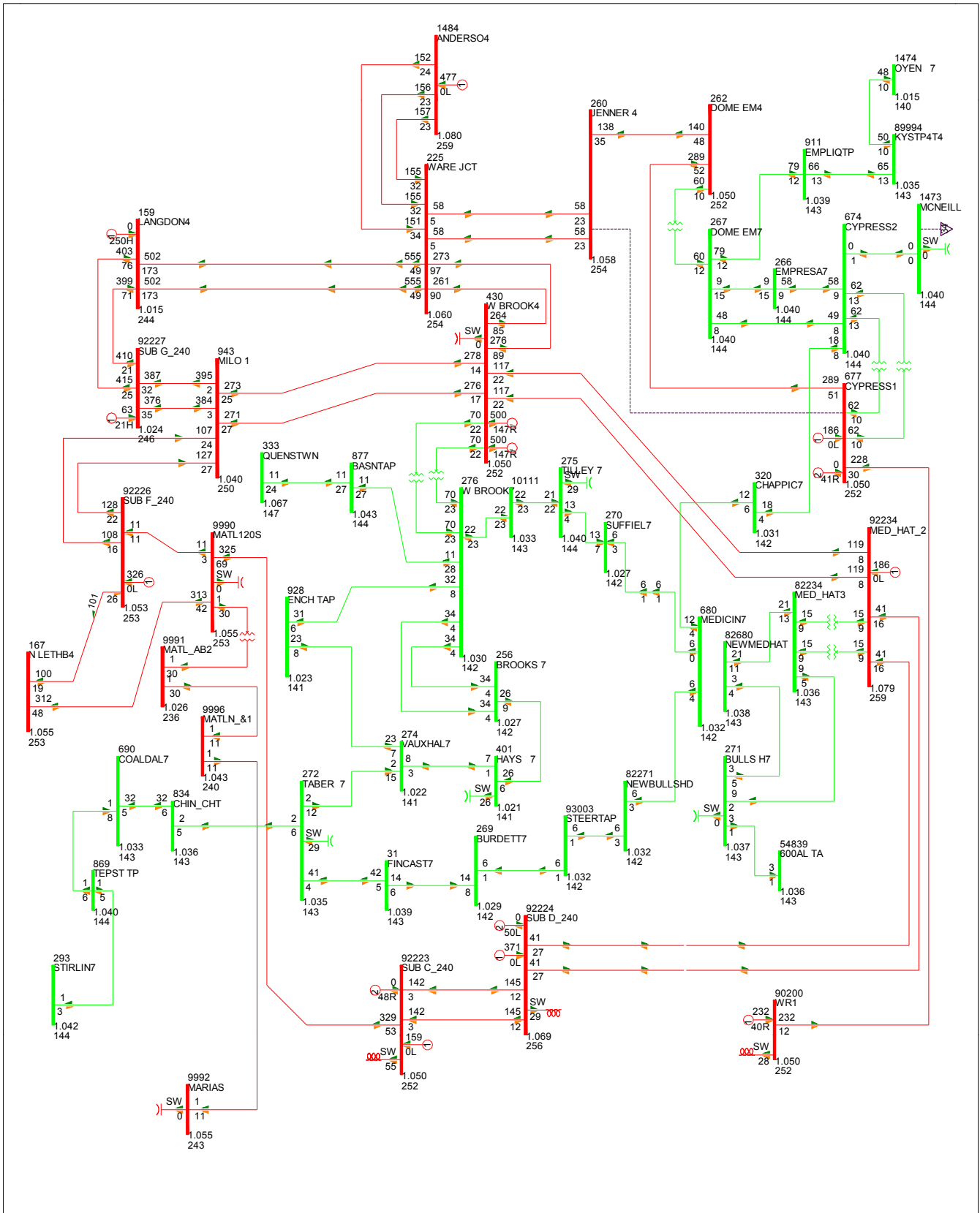


FIG 2017-1A-SL-BOW-17: JENNER TO CYPRESS 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 1000 MW

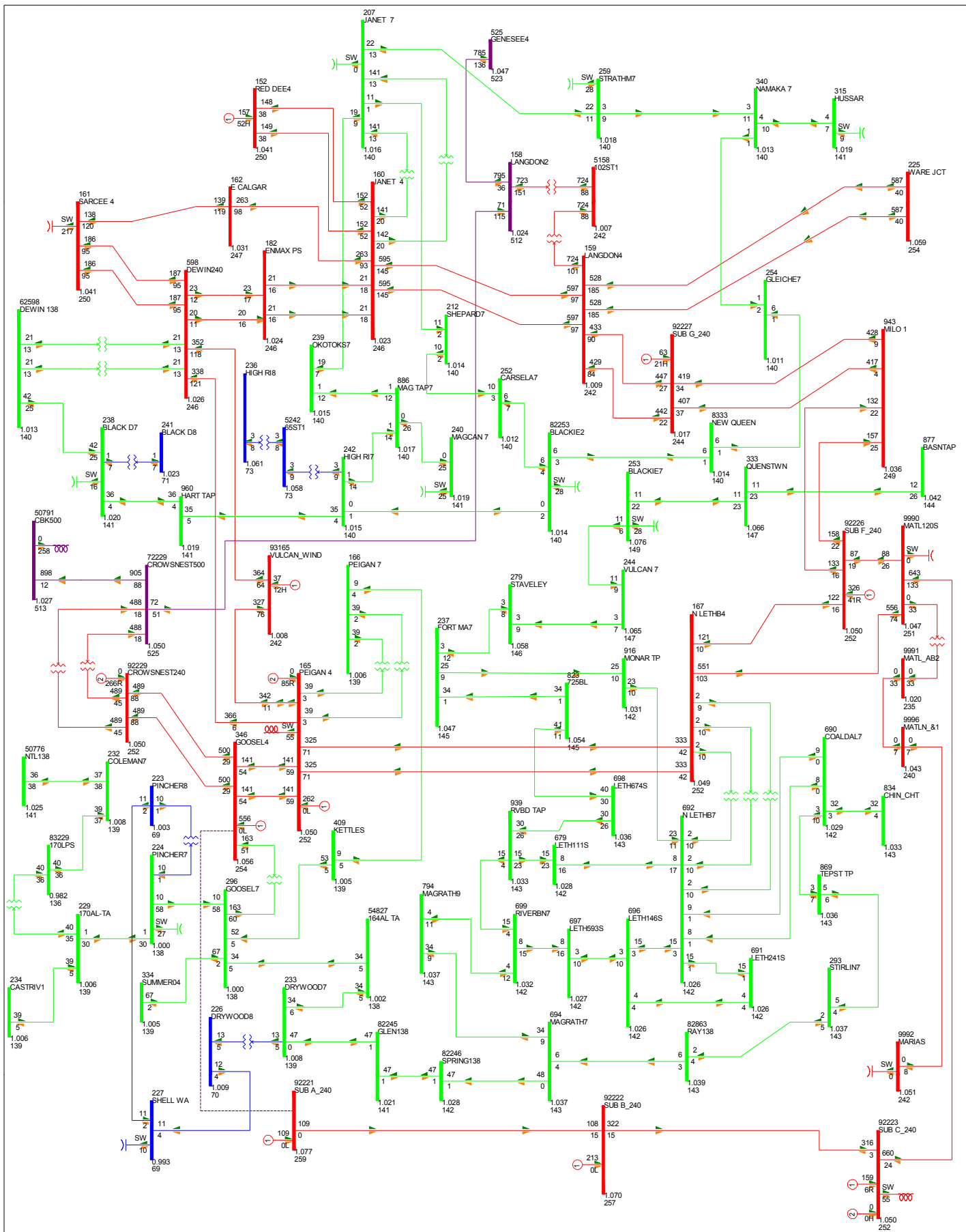


FIG 2017-1A-SL-BOW-18: GOOSELAKE TO SUB A 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: ≤ 34.500 ≤ 69.000 ≤ 138.000 ≤ 240.000 ≤ 500.000 >500.000
 BC Export: 961 MW

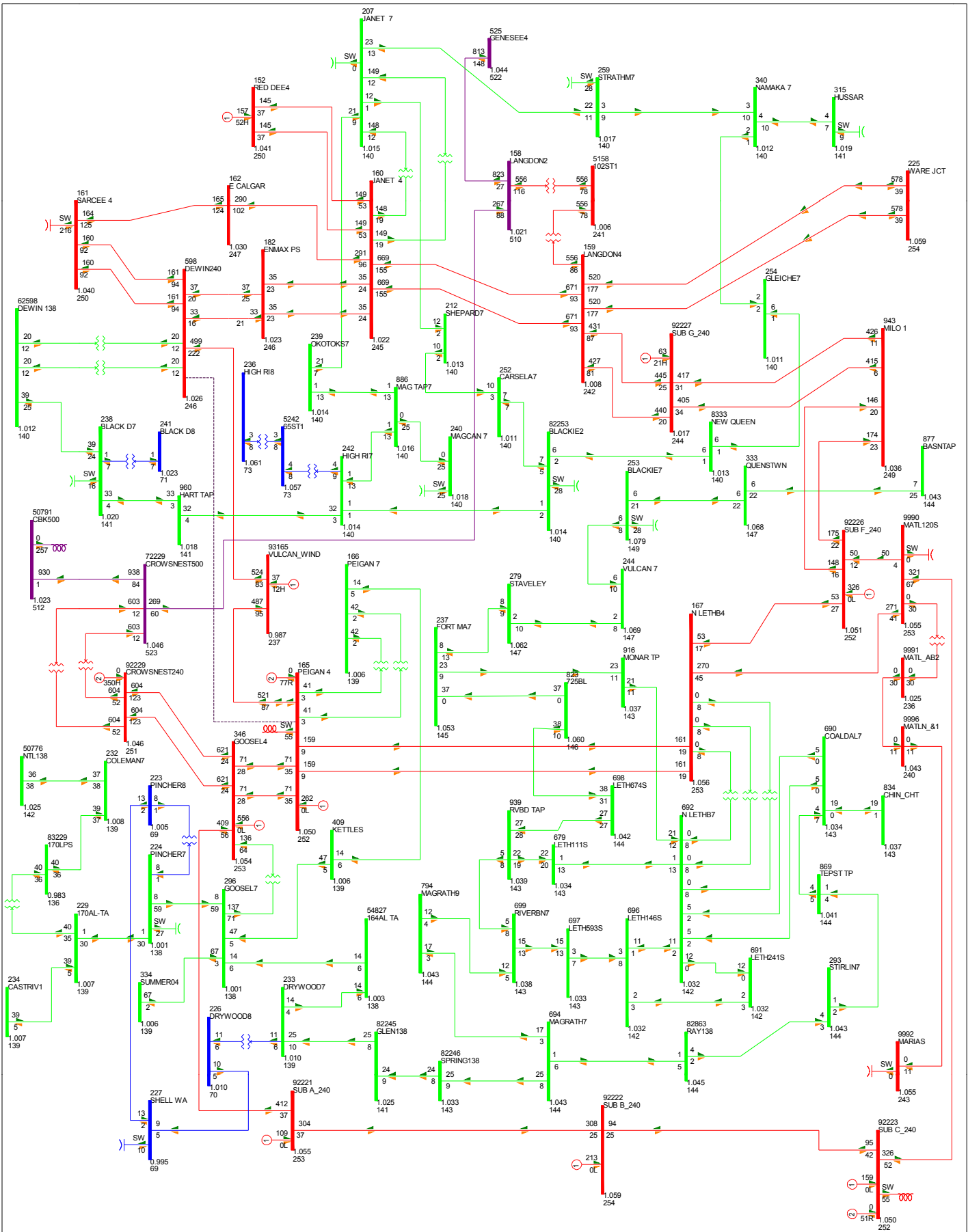


FIG 2017-1A-SL-BOW-20: PEIGAN TO DEWINTON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 983 MW

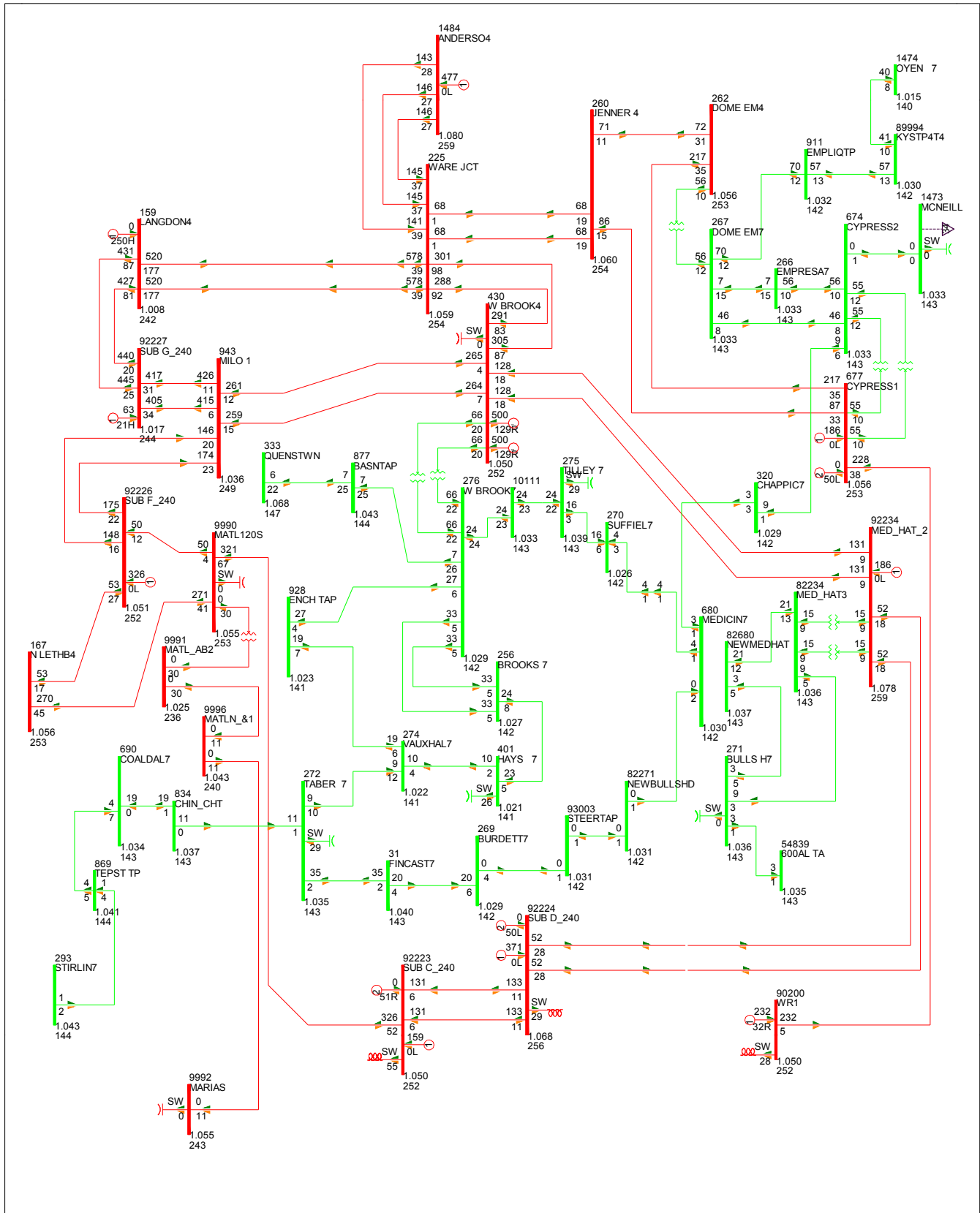


FIG 2017-1A-SL-BOW-21: PEIGAN TO DEWINTON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: 983 MW

GENERATION DISPATCH REPORT

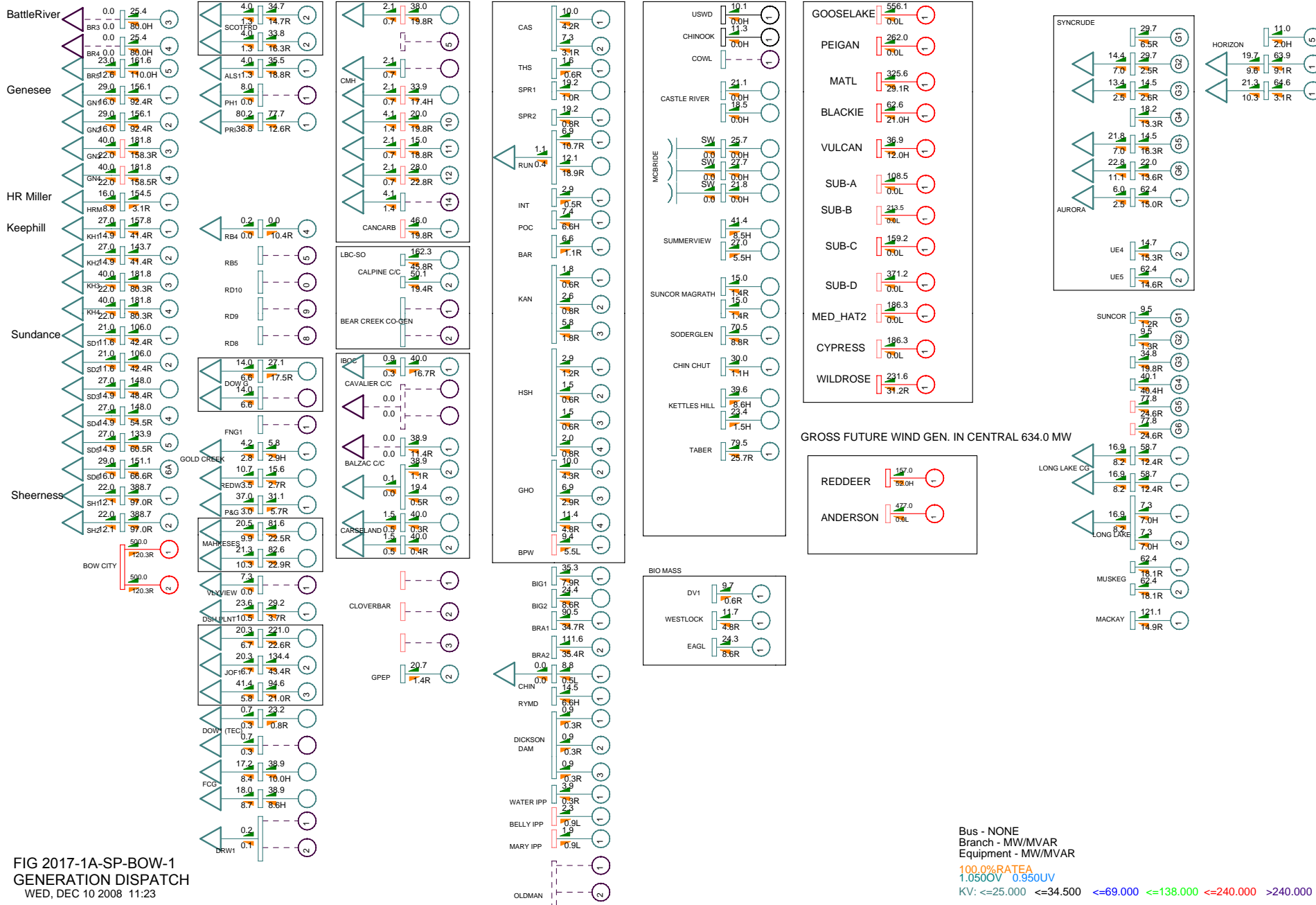
GROSS COAL GEN. 3278.3 MW

GAS GENERATION

HYDRO GENERATION GROSS EXISTING WIND GEN. 477.6 MW

GROSS FUTURE WIND GEN. IN SOUTH 2700.0 MW

FORT MCMURRAY GEN.



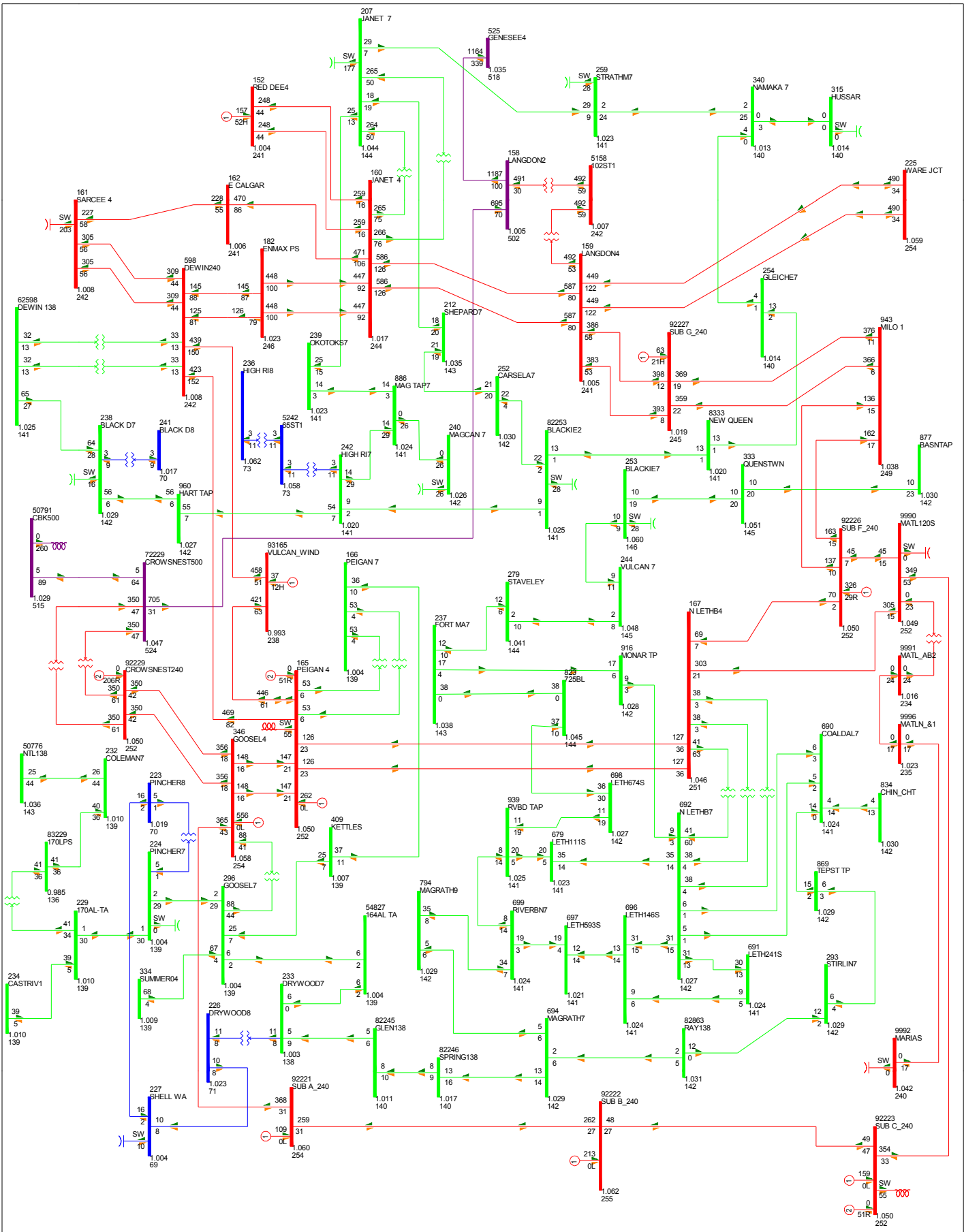


FIG 2017-1A-SP-BOW-2: N-0 CONDITION

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -15 MW

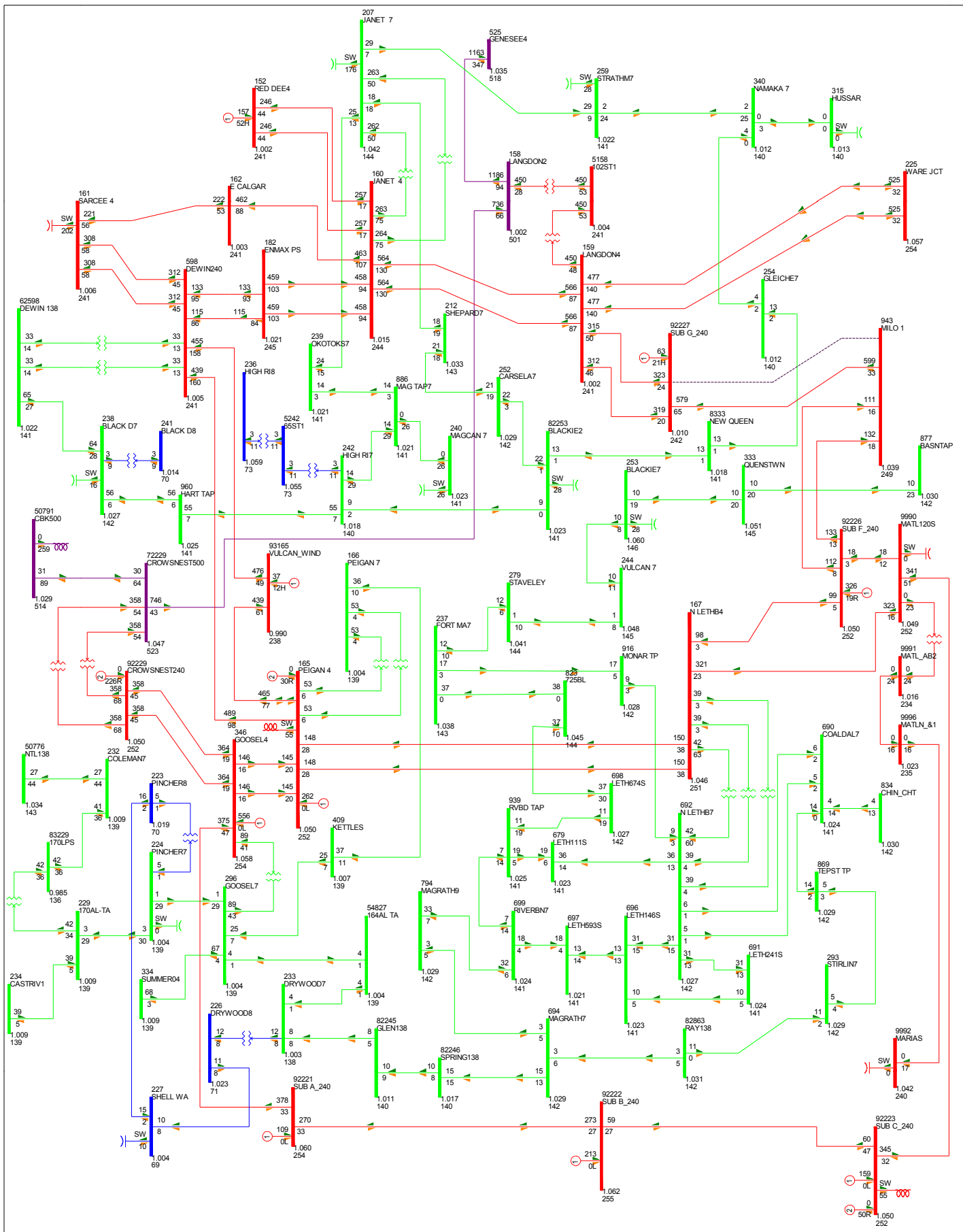


FIG 2017-1A-SP-BOW-4: MILO TO SUB G 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -42 MW

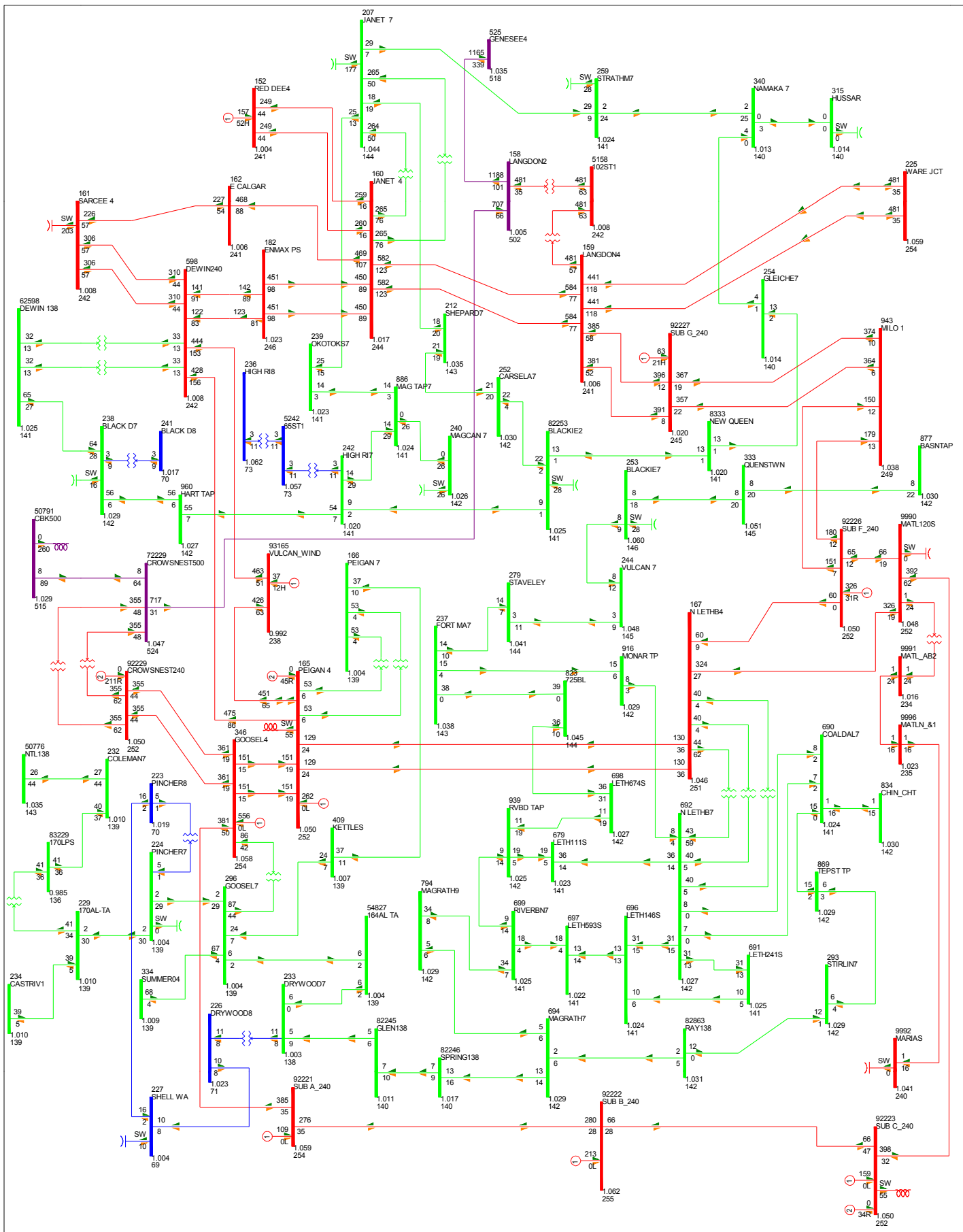


FIG 2017-1A-SP-BOW-6: WESTBROOKS TO MEDHAT2 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -18 MW

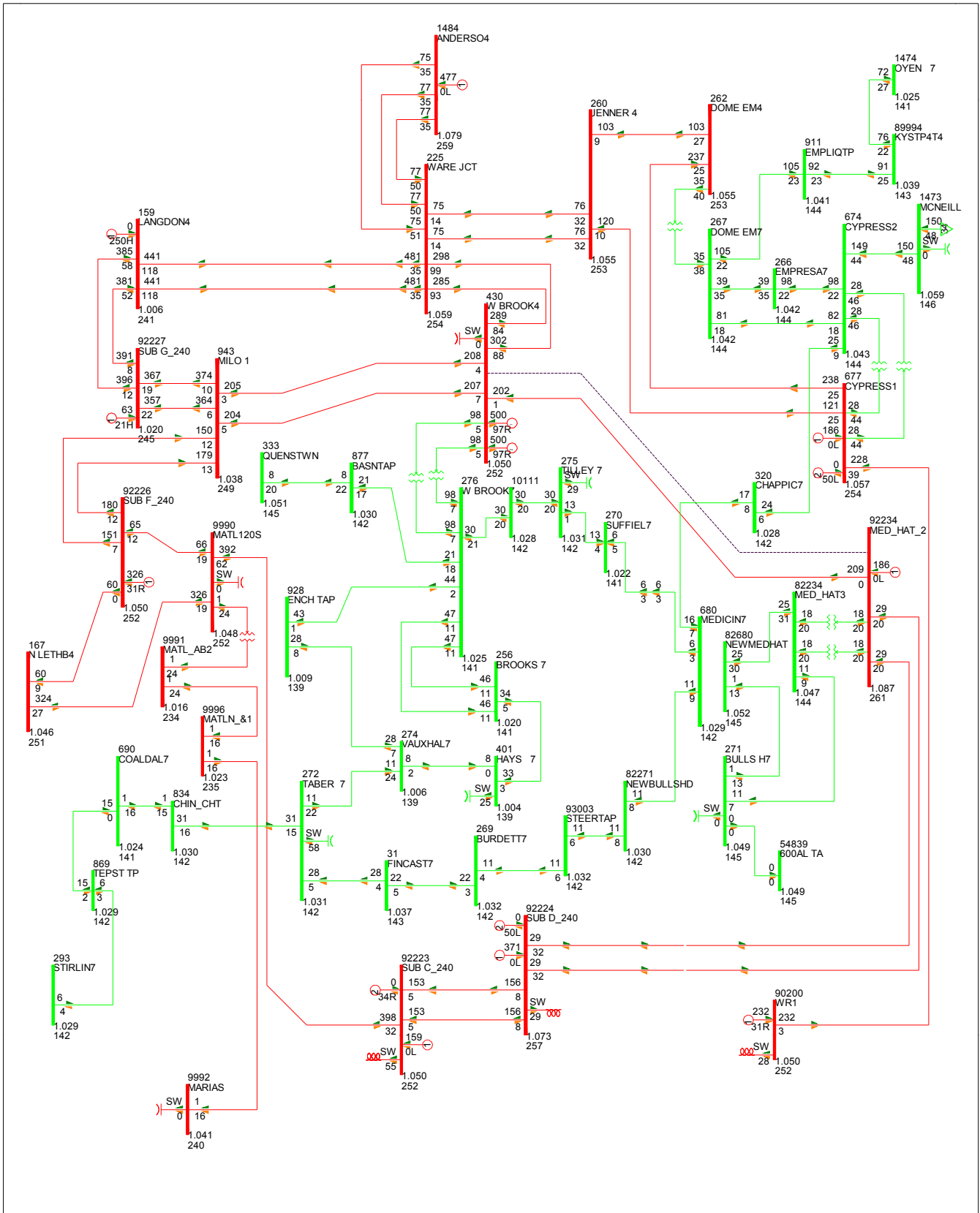


FIG 2017-1A-SP-BOW-7: WESTBROOKS TO MEDHAT2 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -18 MW

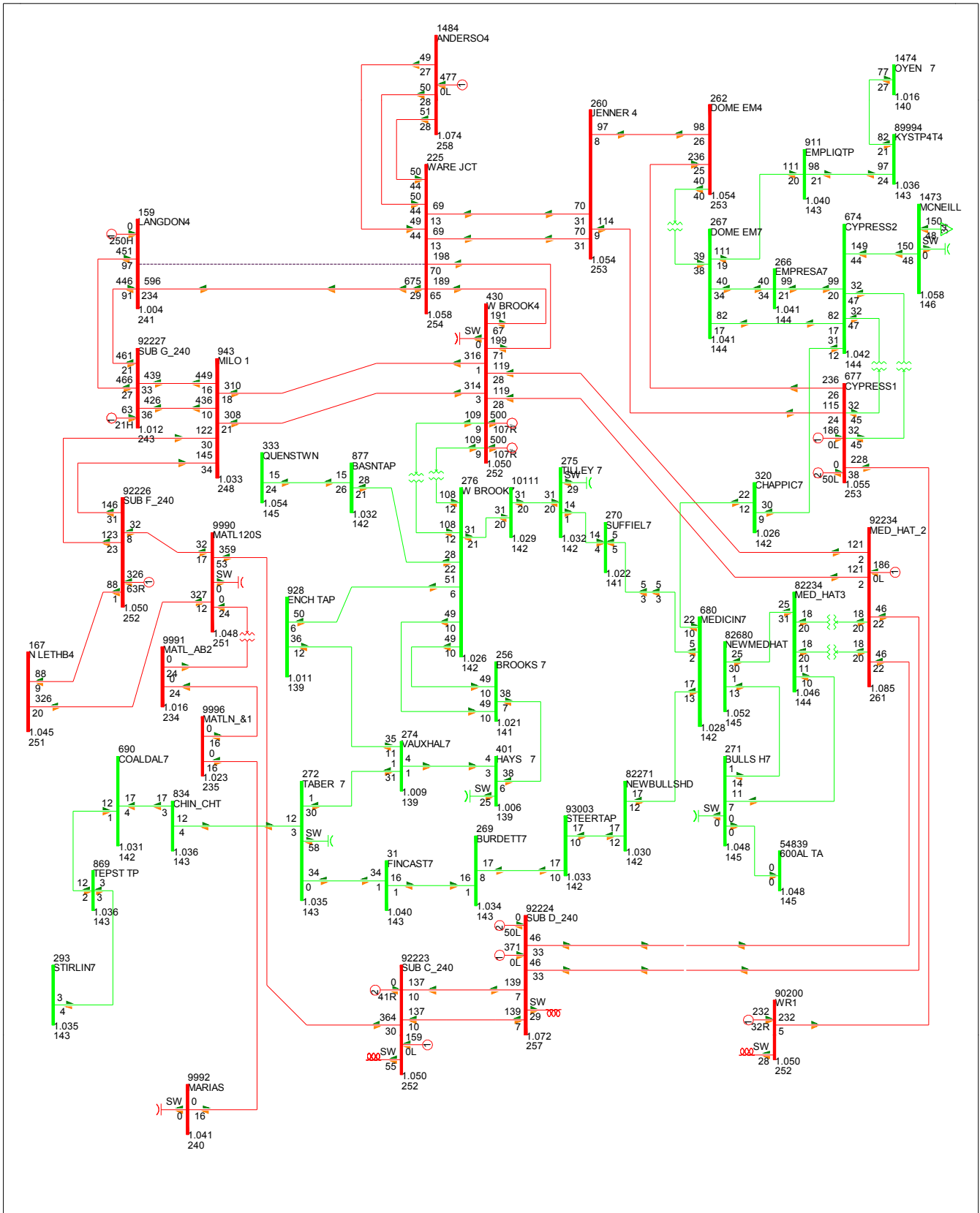


FIG 2017-1A-SP-BOW-9: WARE JUNCTION TO LANGDON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATAEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -72 MW

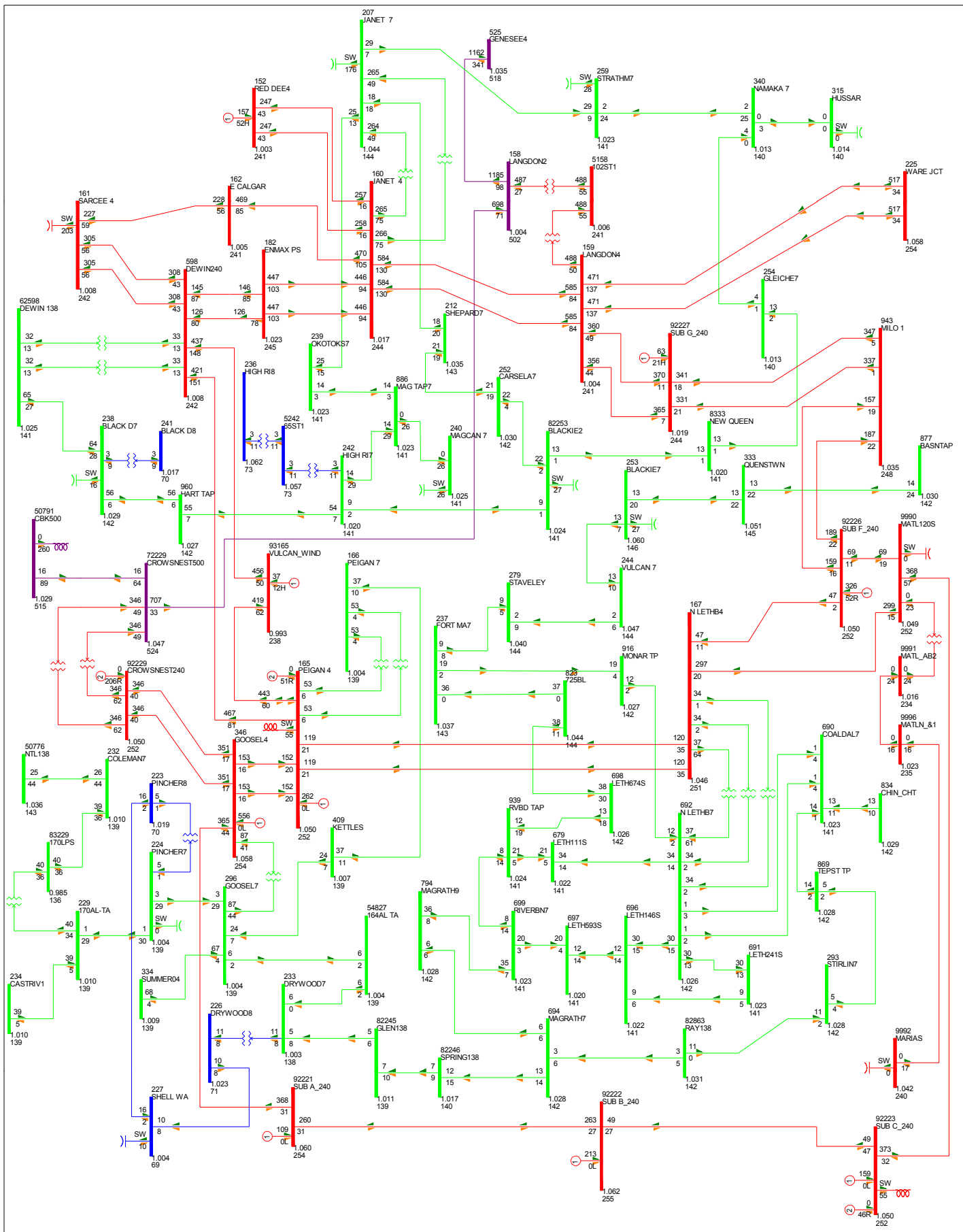


FIG 2017-1A-SP-BOW-10: WESTBROOKS TO MILO 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -27 MW

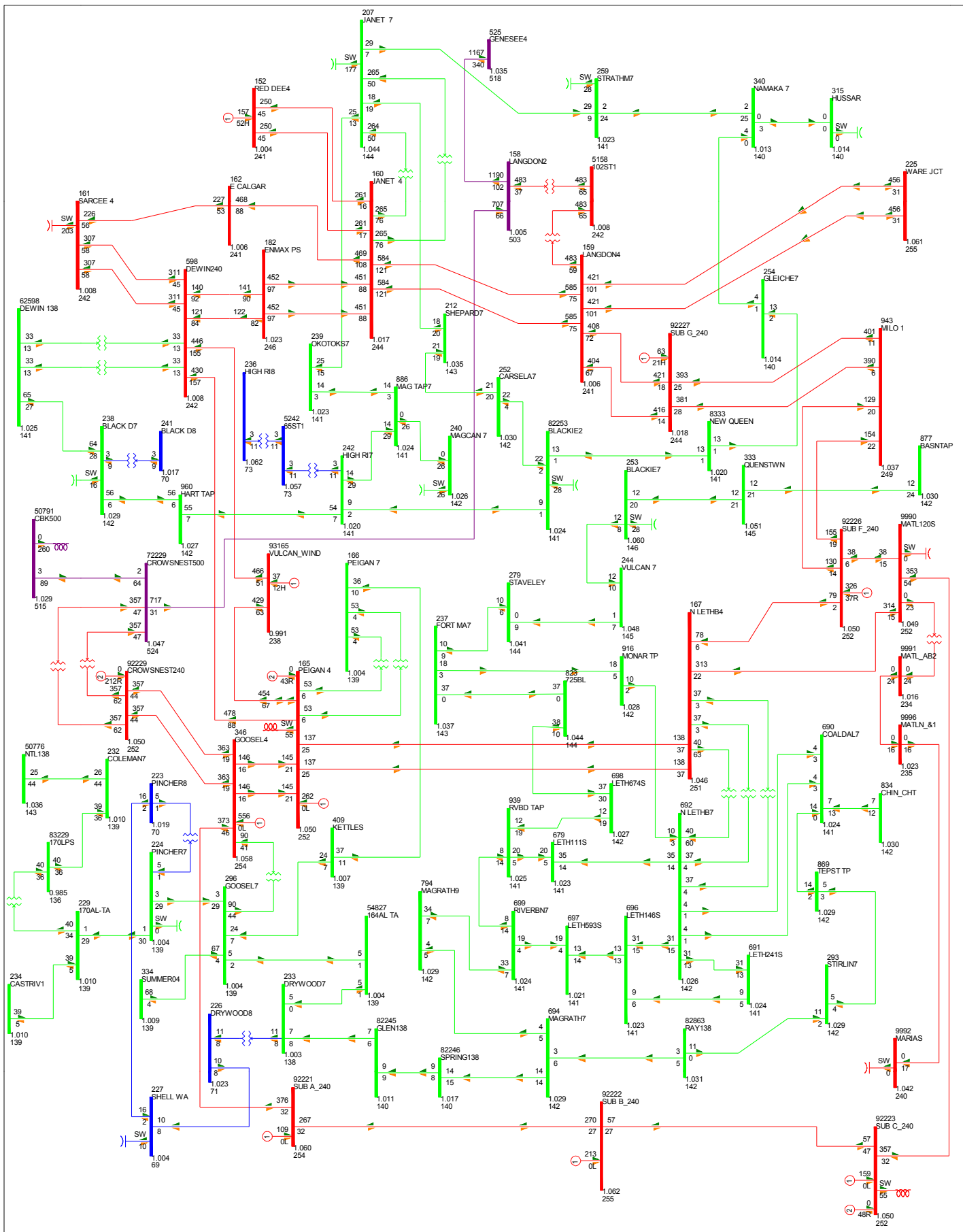


FIG 2017-1A-SP-BOW-12: WEST BROOKS TO WARE JUNC 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -13 MW

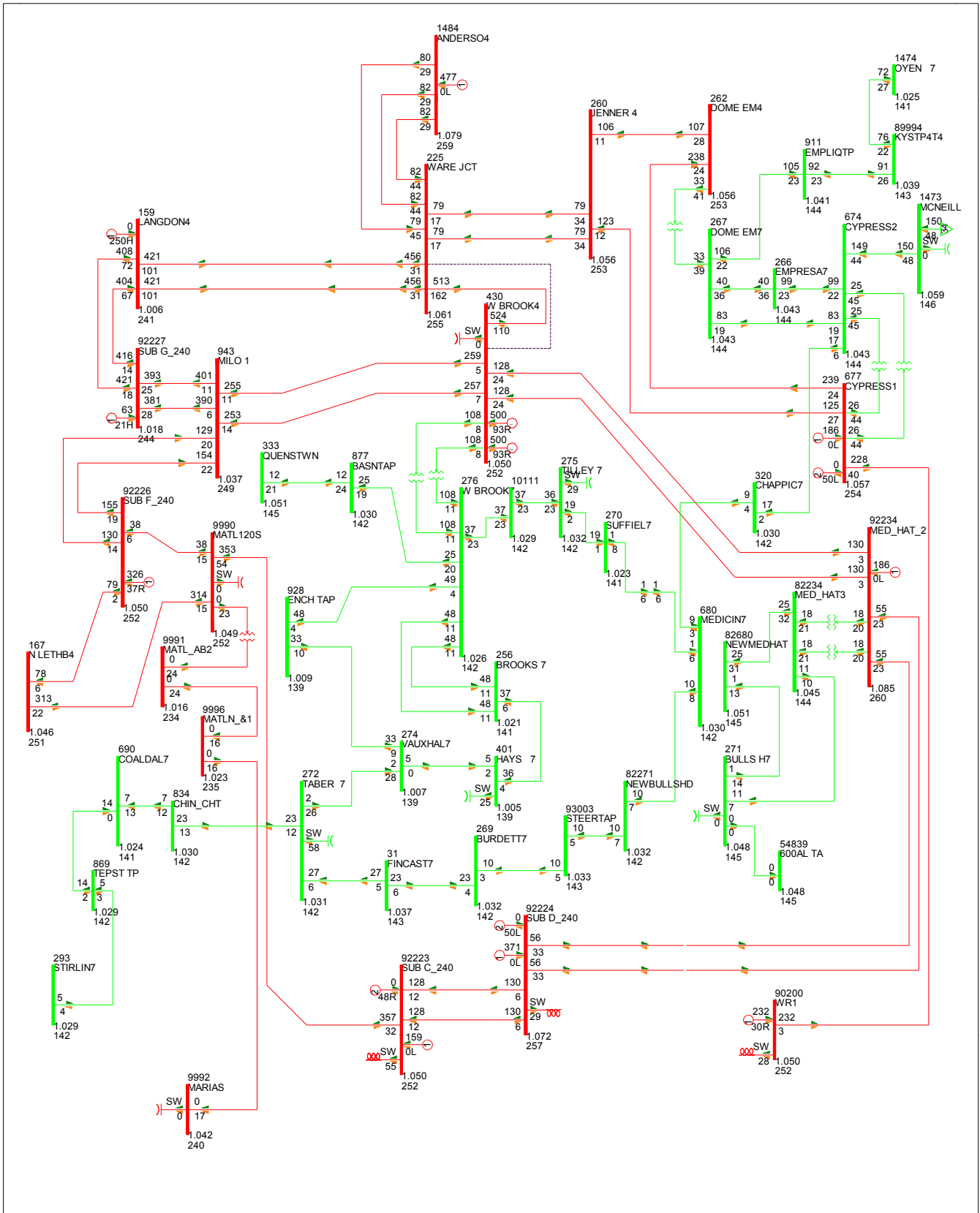


FIG 2017-1A-SP-BOW-13: WEST BROOKS TO WARE JUNC 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -13 MW

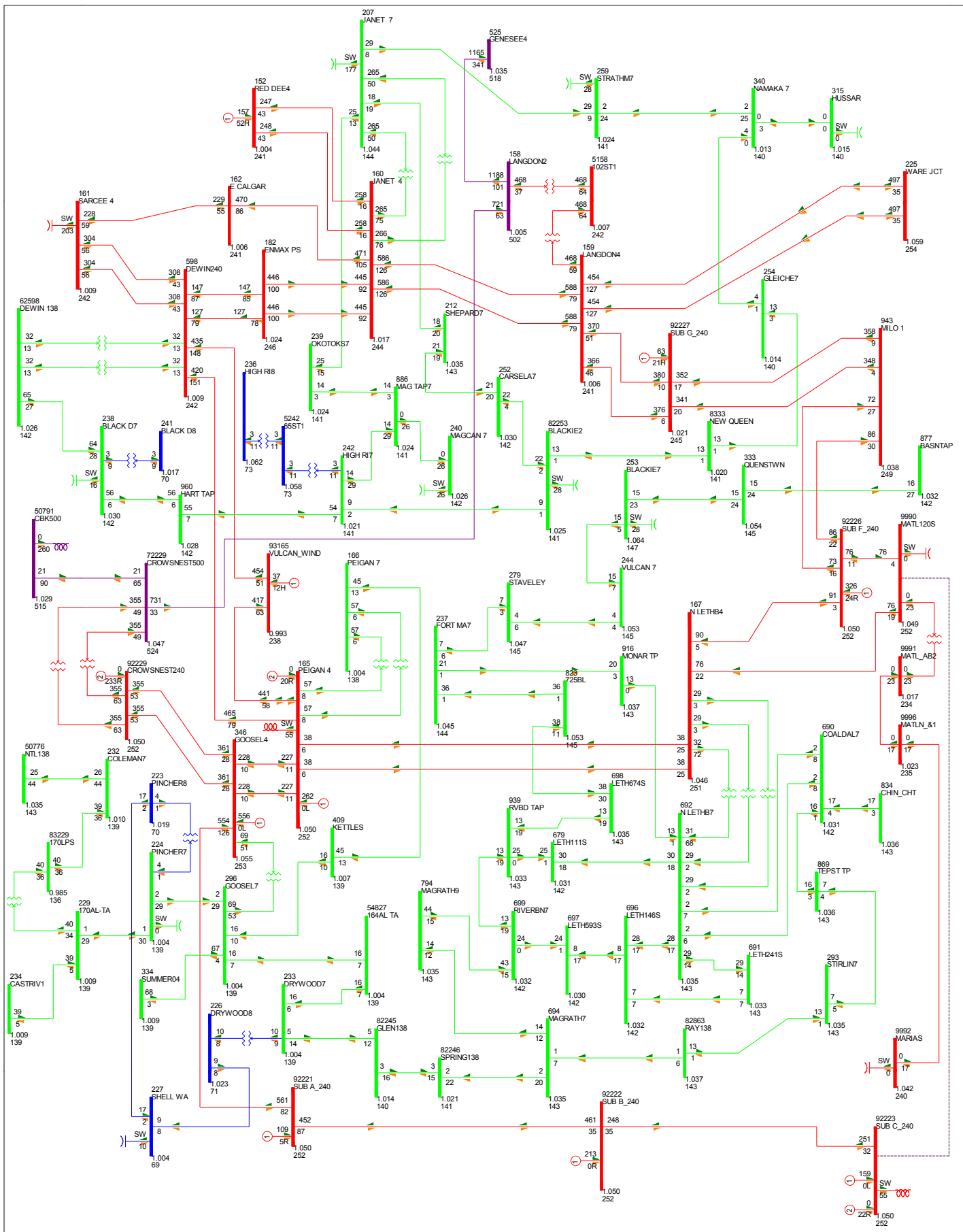


FIG 2017-1A-SP-BOW-14: SUB C TO MATL 240 KV

1000 MW BOW CITY GENERATION SCENARIO

2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)

Branch - MW/MVAR

Equipment - MW/MVAR

100.0%RATEA

KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000

BC Export: -33 MW

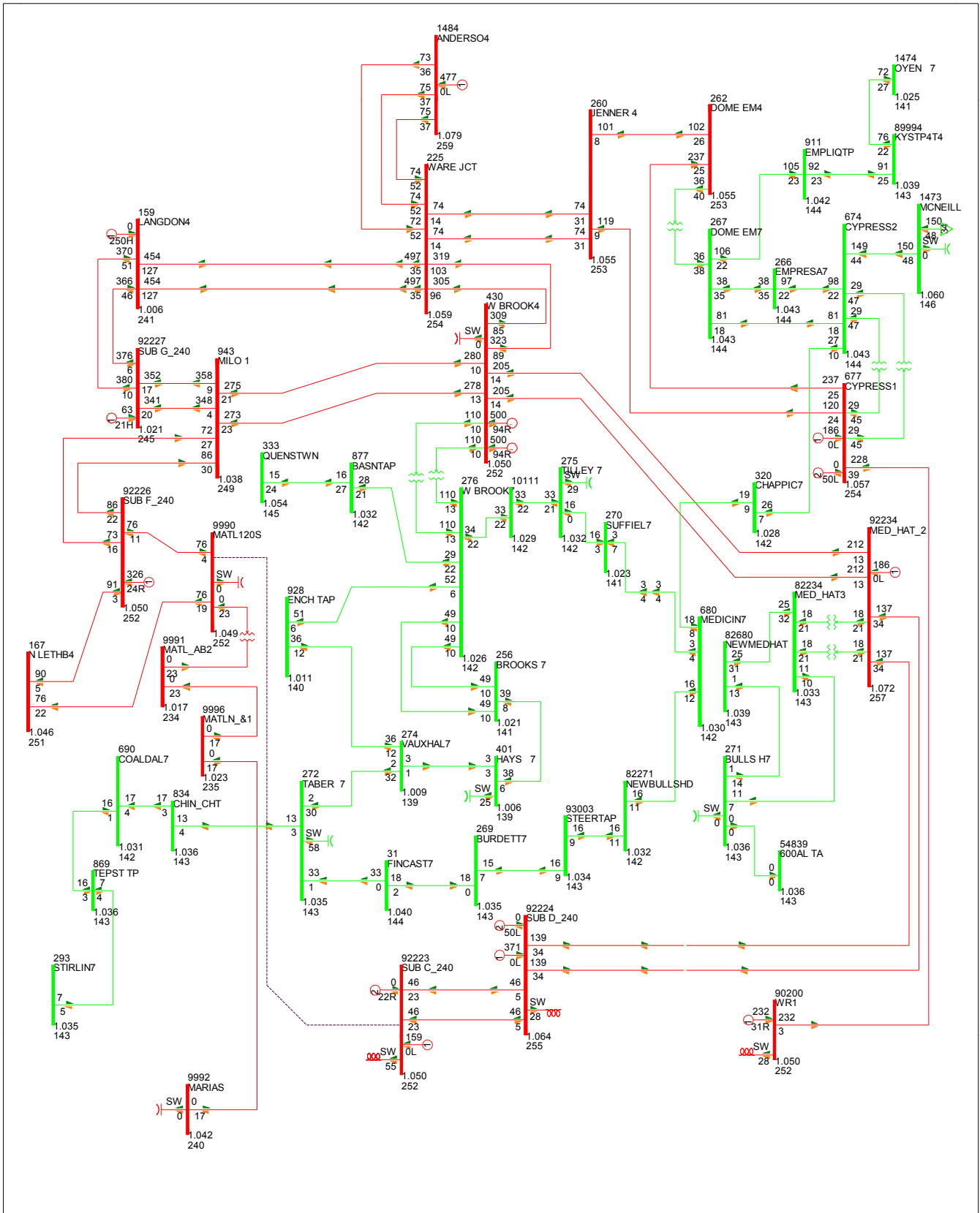


FIG 2017-1A-SP-BOW-15: SUB C TO MATL 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -33 MW

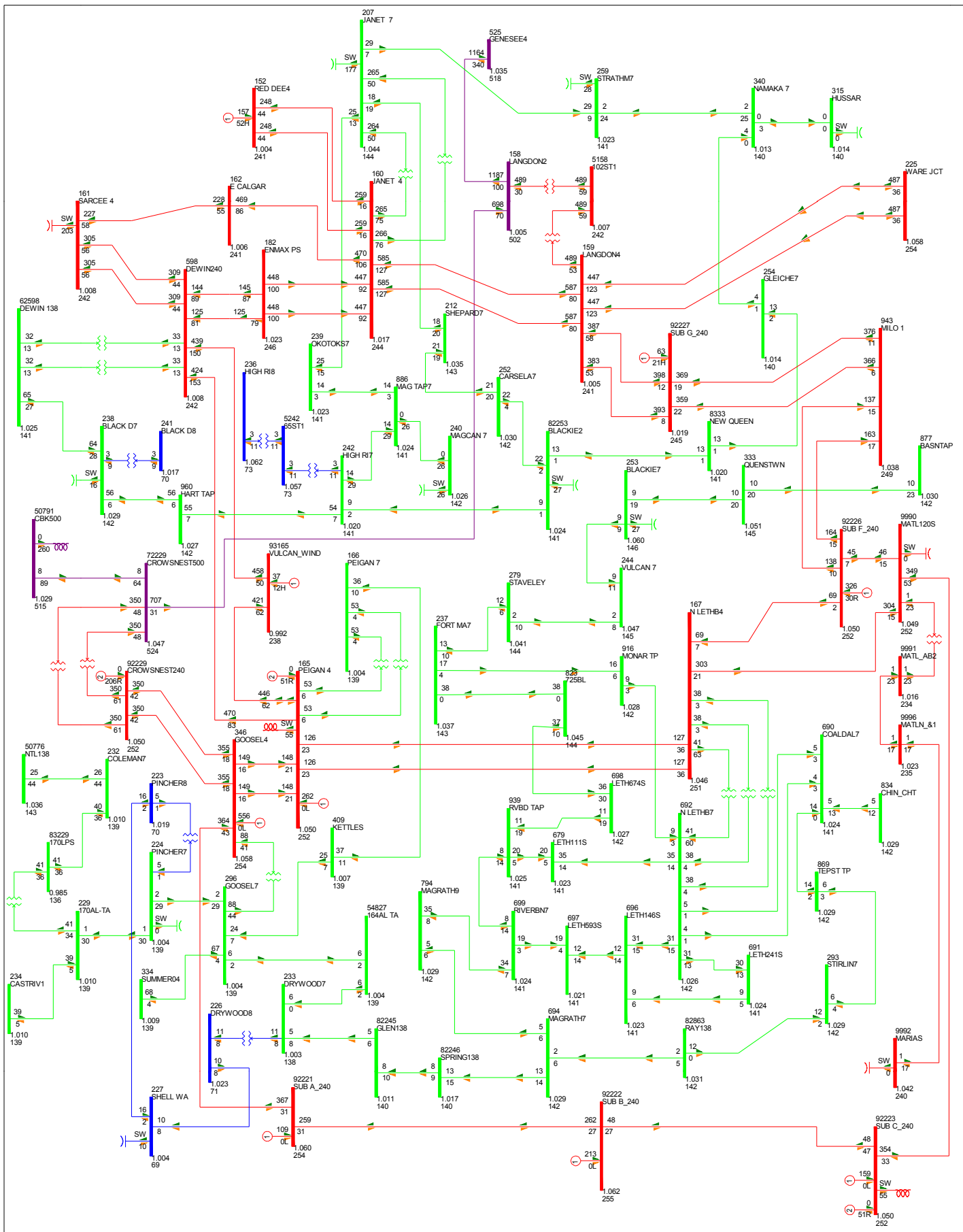


FIG 2017-1A-SP-BOW-16: JENNER TO CYPRESS 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -18 MW

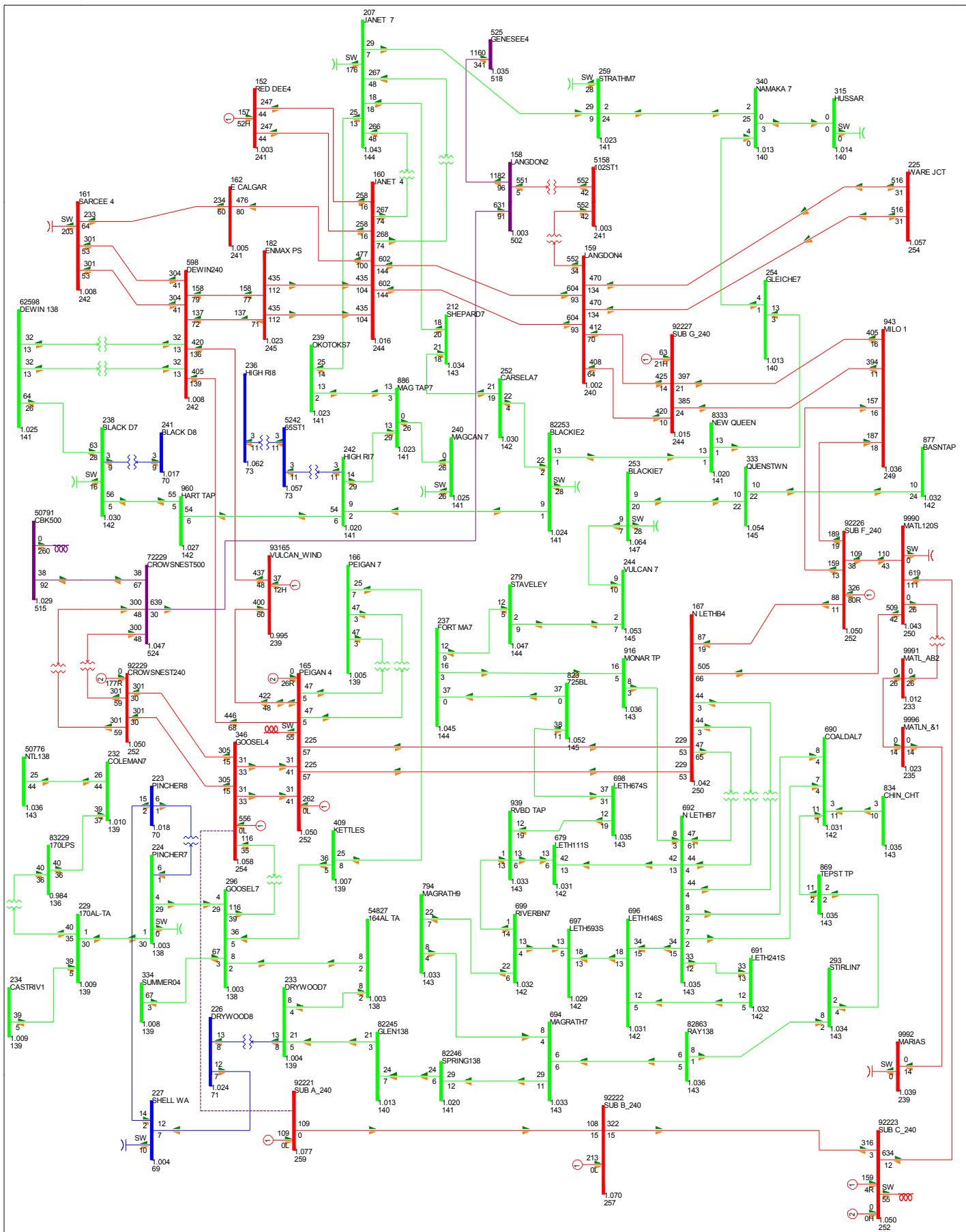


FIG 2017-1A-SP-BOW-18: GOOSELAKE TO SUB A 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000
 BC Export: -47 MW

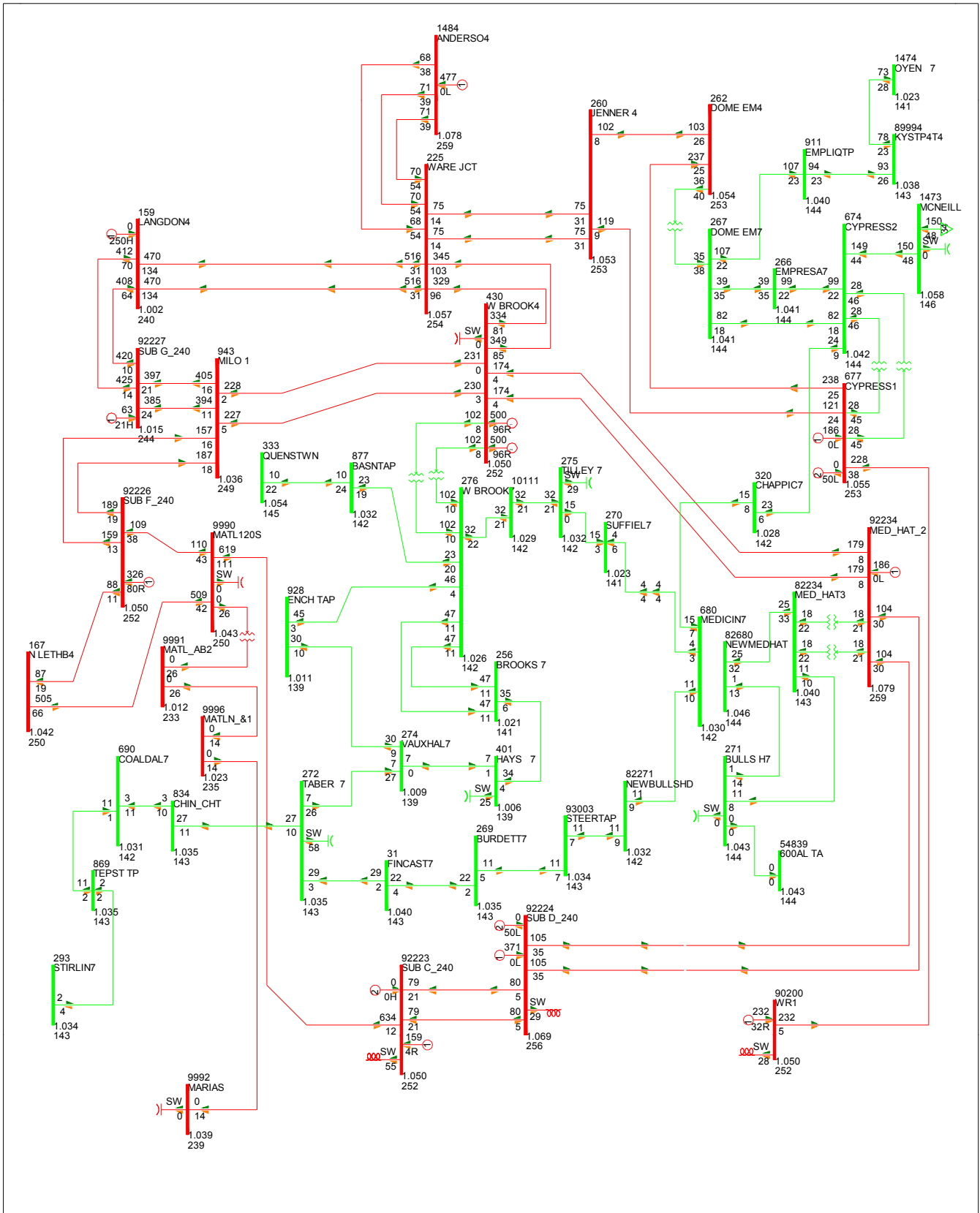


FIG 2017-1A-SP-BOW-19: GOOSELAKE TO SUB A 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -47 MW

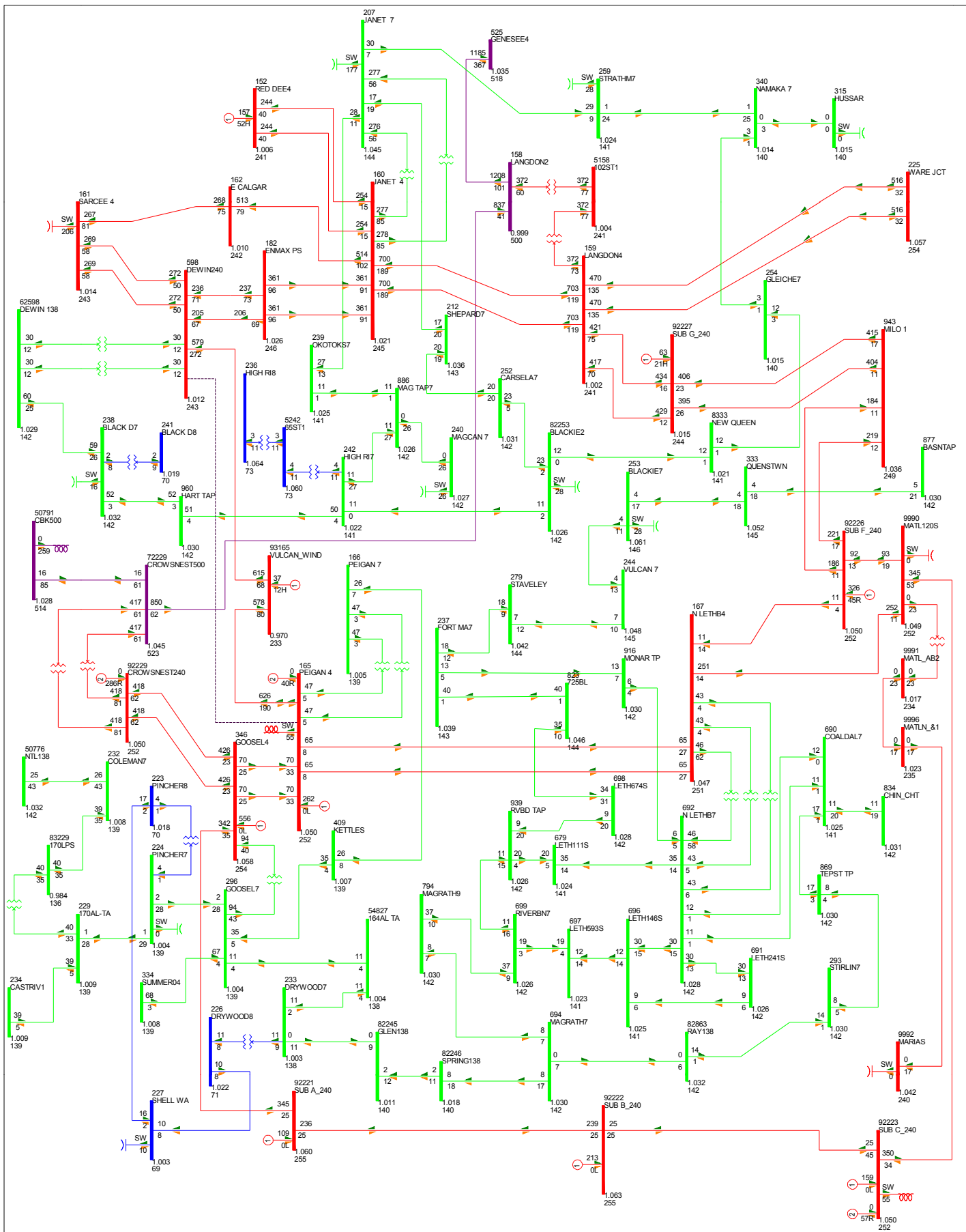


FIG 2017-1A-SP-BOW-20: PEIGAN TO DEWINTON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South West System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -35 MW

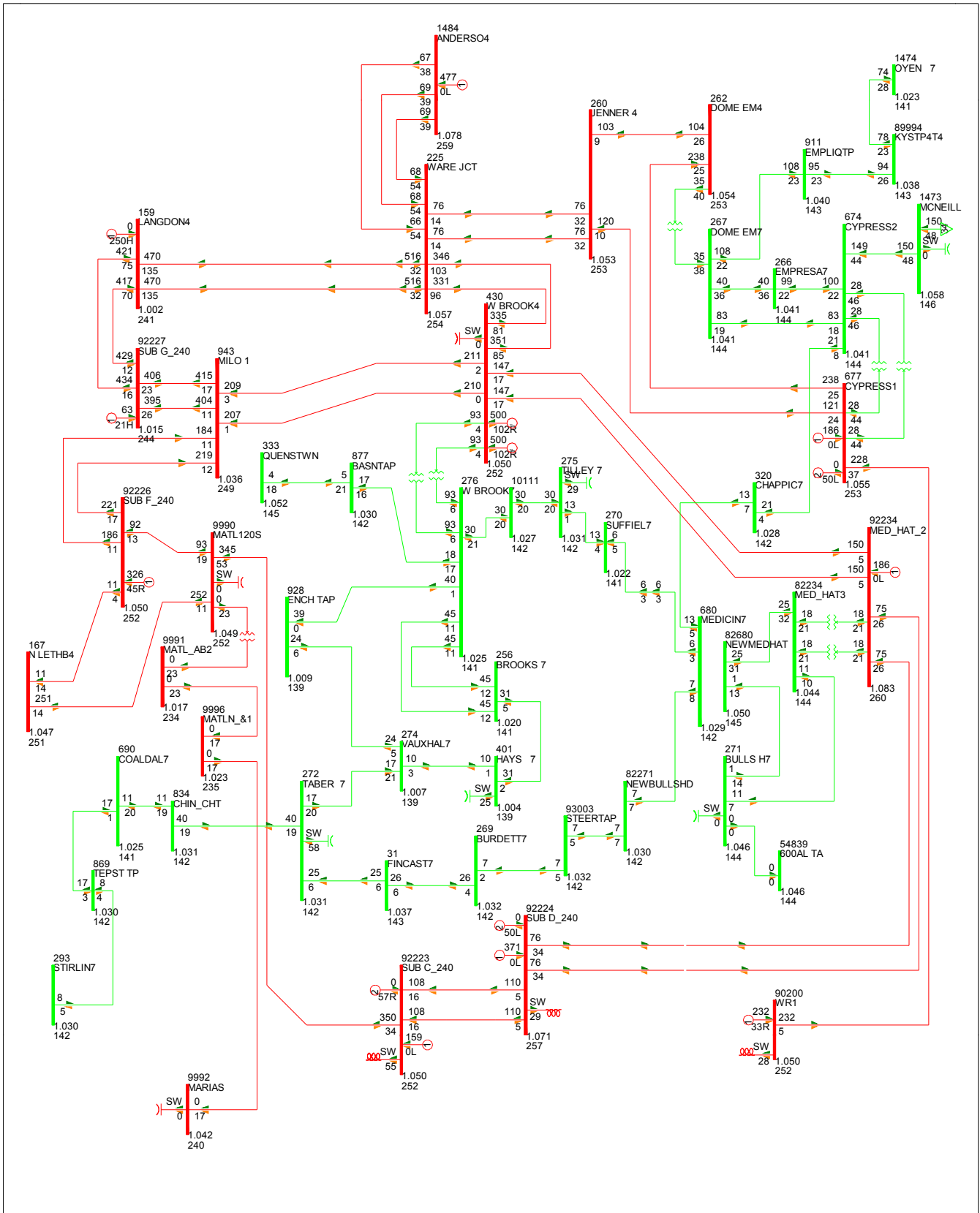


FIG 2017-1A-SP-BOW-21: PEIGAN TO DEWINTON 240 KV
 1000 MW BOW CITY GENERATION SCENARIO
 2017 South East System MON, NOV 24 2008 18:34

ALTERNATIVE 1A

Bus - VOLTAGE (KV/PU)
 Branch - MW/MVAR
 Equipment - MW/MVAR
 100.0%RATEA
 KV: <=34.500 <=69.000 <=138.000 <=240.000 <=500.000 >500.000
 BC Export: -35 MW

P-V & V-Q Analysis

The power flow and contingency analysis determined the sizes of the reactive power compensation required to maintain an acceptable voltage profile during normal and contingency conditions. However, voltages alone are poor indicators of the distance of the system operating point from the voltage collapse. A system may be operating close to a voltage collapse with a normal voltage profile. For this reason, P-V analysis was carried out to determine the real power margins available under normal as well as contingency conditions and to ensure the adequacy of the proposed reactive power compensation.

The P-V analysis was carried out for Alternative 1A for the critical buses which were determined through power flow and contingency analysis. The generation source was British Columbia system while the sink load was in southern region. Several 500kV and 240kV critical contingencies were simulated and the real power margins for the identified buses were calculated. The forecast 2017 summer peak load for the southern Alberta region is 1376MW based on the FC2007 AESO forecast. Table D-22 shows that voltage collapse nose points under various contingency are much greater than 1445MW to meet the required 5% voltage stability margin.

The Q-V analysis for 2017 was also carried out to ensure that the proposed network have enough reactive power reserve during normal and contingency conditions. All the Q-V curves show that during normal or contingency conditions, there is no deficiency of reactive power at these locations. All the critical cases show that with the implementation of Alternative 1A, the system has adequate voltage stability margin and also shows the adequacy of the proposed reactive power support.

Table D-22: Summary of P-V Analysis Results: 2017 Summer Peak- Alternative 1A

Contingency			Area loading at Voltage collapse (nose) point		Voltage stability Criteria Met?
Figure No.	Identifier	Description	Scenario 1 (two sheerness units in service	Scenario 2 (One sheerness unit in service	
Fig PV-1		Base Case	3090	2180	Yes
		240 kV Contingencies			
Fig PV-2	967L	Peigan 59S to N. Lethbridge 370S	2930	2090	Yes
Fig PV-3	955L	Goose Lake 102S to Peigan 59S	2810	2020	Yes
Fig PV-4	Line J	Dewinton to Peigan 59S	2900	1910	Yes
Fig PV-5	924L	Milo JK to N. Lethbridge 370S	3100	2160	Yes
Fig PV-6	944L	W. Junction 132S to Jenner 275S	3090	2180	Yes
Fig PV-7	931L	W. Brooks 28S to W. Junction 132S	3080	2180	Yes
Fig PV-8	Line H	Langdon 102S to W. Junction 132S	3140	2160	Yes
Fig PV-9	945L	New Cypress 132S to Jenner 275S	3090	2180	Yes
Fig PV-10	Line C1	Goose Lake 103S to Sub C	2840	2090	Yes
Fig PV-11	Line A	Goose Lake 103S to New Crowsnest	2750	1970	Yes
Fig PV-12	923L	Milo JK to W.Brooks 28S	3100	2180	Yes
Fig PV-13	Line G	W. Brook 28S to MH2 41S	3100	2170	Yes
Fig PV-14	New line	Cypress to wildrose	2760	1810	Yes
Fig PV-15	Line D	MATL 120S to Sub C	3040	2080	Yes
Fig PV-16	New Transformer	New Crowsnest 500/240 Transformer	2930	2100	Yes
Fig PV-17	Line C1	Goose Lake 103S to Sub C	2790	2010	Yes
Fig PV-18	Line E	Sub C to Sub D	3110	2180	Yes

Table D23: Summary of Q-V Analysis Results: 2017 Summer Peak- Alternative 1A Scenario 1 (with both Sheerness units in-service)

Both sheerness units in service				
Figure No.	Langdon 102S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-1		Base Case	1632	Yes
	1	977L Peigan to N Lethbridge	1624	Yes
	2	500240kV Transformer at Crowsnest	1623	Yes
	3	975L Peigan to Goose Lake	1616	Yes
	4	240kV from Goose Lake to Crowsnest	1613	Yes

Both sheerness units in service				
Figure No.	Janet 74S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-2		Base Case	1041	Yes
	1	977L Peigan to N Lethbridge	1038	Yes
	2	500240kV Transformer at Crowsnest	1027	Yes
	3	975L Peigan to Goose Lake	1018	Yes
	4	240kV from Goose Lake to Crowsnest	1003	Yes

Both sheerness units in service				
Figure No.	Peigan 59S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-3		Base Case	1204	Yes
	1	977L Peigan to N Lethbridge	1188	Yes
	2	500240kV Transformer at Crowsnest	1170	Yes
	3	975L Peigan to Goose Lake	1187	Yes
	4	240kV from Goose Lake to Crowsnest	1124	Yes

Both sheerness units in service				
Figure No.	N.Lethbridge 370S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-4		Base Case	1433	Yes
	1	977L Peigan to N Lethbridge	1322	Yes
	2	500240kV Transformer at Crowsnest	1409	Yes
	3	975L Peigan to Goose Lake	1391	Yes
	4	240kV from Goose Lake to Crowsnest	1358	Yes

Both sheerness units in service				
Figure No.	Ware Junction 132S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-5		Base Case	1287	Yes
	1	977L Peigan to N Lethbridge	1274	Yes
	2	500240kV Transformer at Crowsnest	1280	Yes
	3	975L Peigan to Goose Lake	1277	Yes
	4	240kV from Goose Lake to Crowsnest	1287	Yes

Both sheerness units in service				
Figure No.	New Cypress Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-6		Base Case	678	Yes
	1	977L Peigan to N Lethbridge	678	Yes
	2	500240kV Transformer at Crowsnest	677	Yes
	3	975L Peigan to Goose Lake	676	Yes
	4	240kV from Goose Lake to Crowsnest	678	Yes

Both sheerness units in service				
Figure No.	Goose Lake 103S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-7		Base Case	1427	Yes
	1	977L Peigan to N Lethbridge	1369	Yes
	2	500240kV Transformer at Crowsnest	1330	Yes
	3	975L Peigan to Goose Lake	1459	Yes
	4	240kV from Goose Lake to Crowsnest	1234	Yes

Both sheerness units in service				
Figure No.	W. Brooks 28S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-8		Base Case	1516	Yes
	1	977L Peigan to N Lethbridge	1499	Yes
	2	500240kV Transformer at Crowsnest	1504	Yes
	3	975L Peigan to Goose Lake	1498	Yes
	4	240kV from Goose Lake to Crowsnest	1492	Yes

Both sheerness units in service				
Figure No.	New Milo Junction	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-9		Base Case	1572	Yes
	1	977L Peigan to N Lethbridge	1536	Yes
	2	500240kV Transformer at Crowsnest	1514	Yes
	3	975L Peigan to Goose Lake	1510	Yes
	4	240kV from Goose Lake to Crowsnest	1500	Yes

Both sheerness units in service				
Figure No.	New Crowsnest Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-10		Base Case	2166	Yes
	1	977L Peigan to N Lethbridge	2089	Yes
	2	500240kV Transformer at Crowsnest	1824	Yes
	3	975L Peigan to Goose Lake	2129	Yes
	4	240kV from Goose Lake to Crowsnest	2120	Yes

Both sheerness units in service				
Figure No.	New Medicine Hat 2 Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S1-11		Base Case	714	Yes
	1	977L Peigan to N Lethbridge	715	Yes
	2	500240kV Transformer at Crowsnest	715	Yes
	3	975L Peigan to Goose Lake	715	Yes
	4	240kV from Goose Lake to Crowsnest	712	Yes

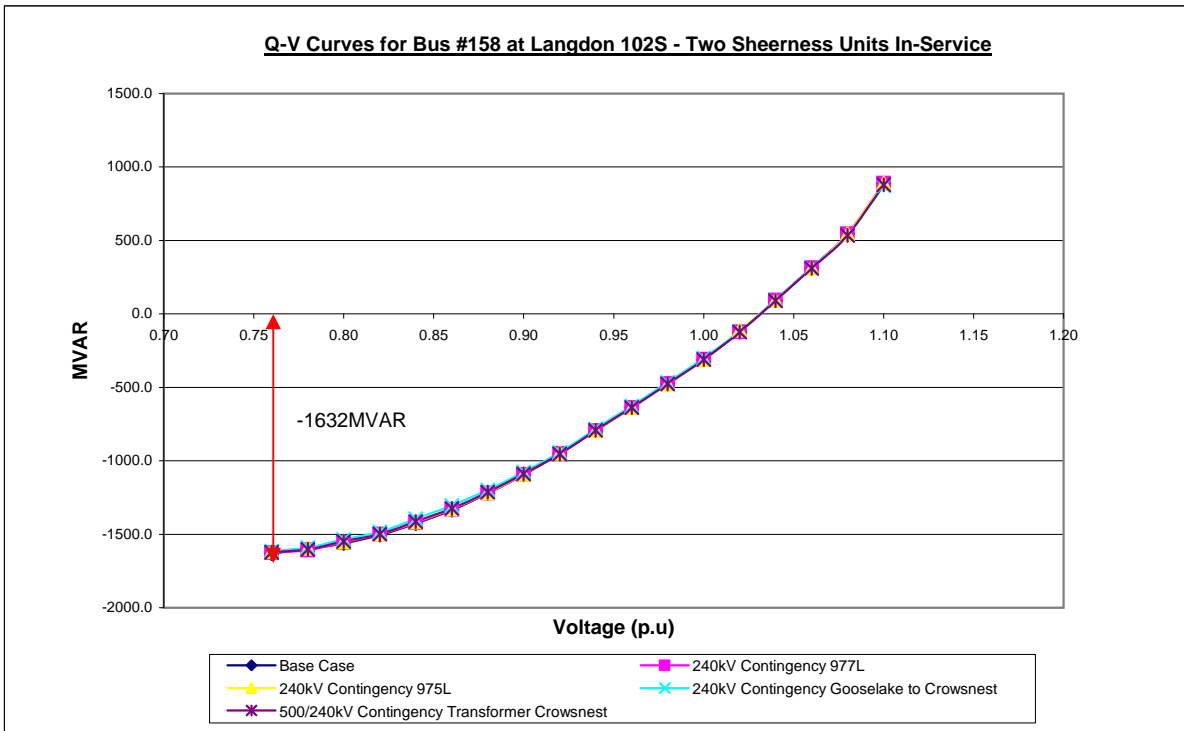


Figure QV-S1-1

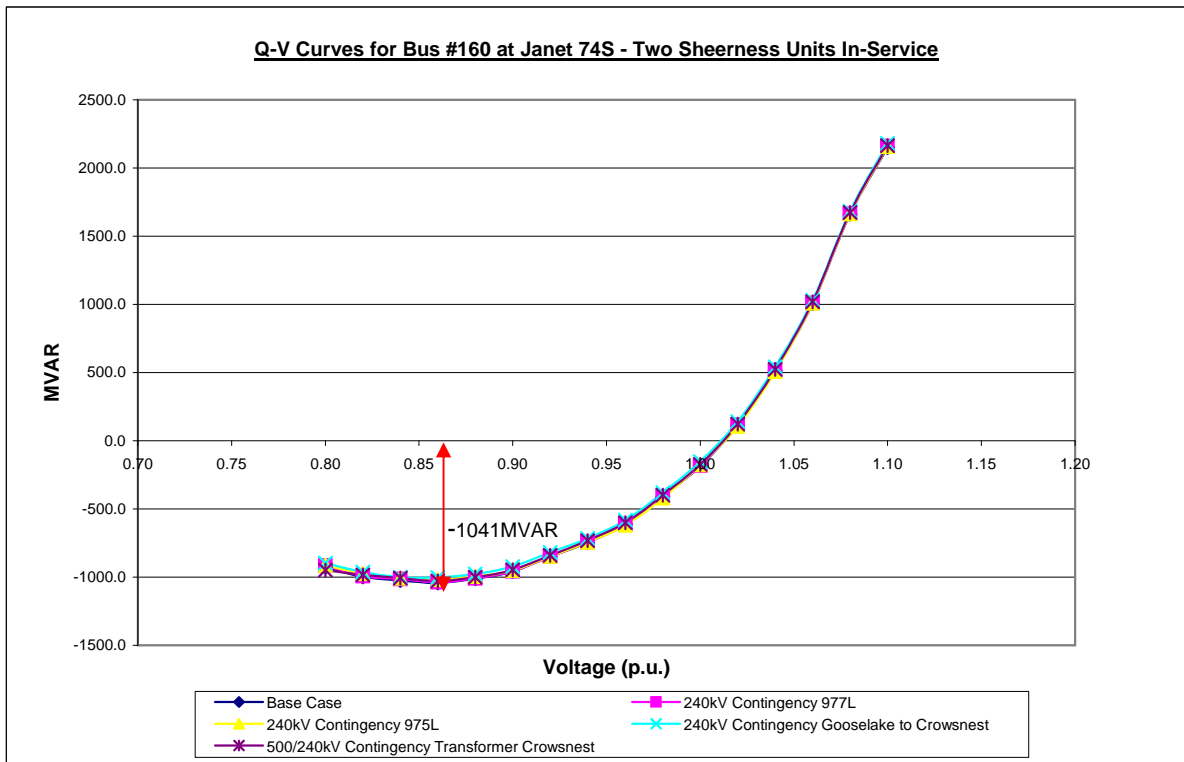


Figure QV-S1-2

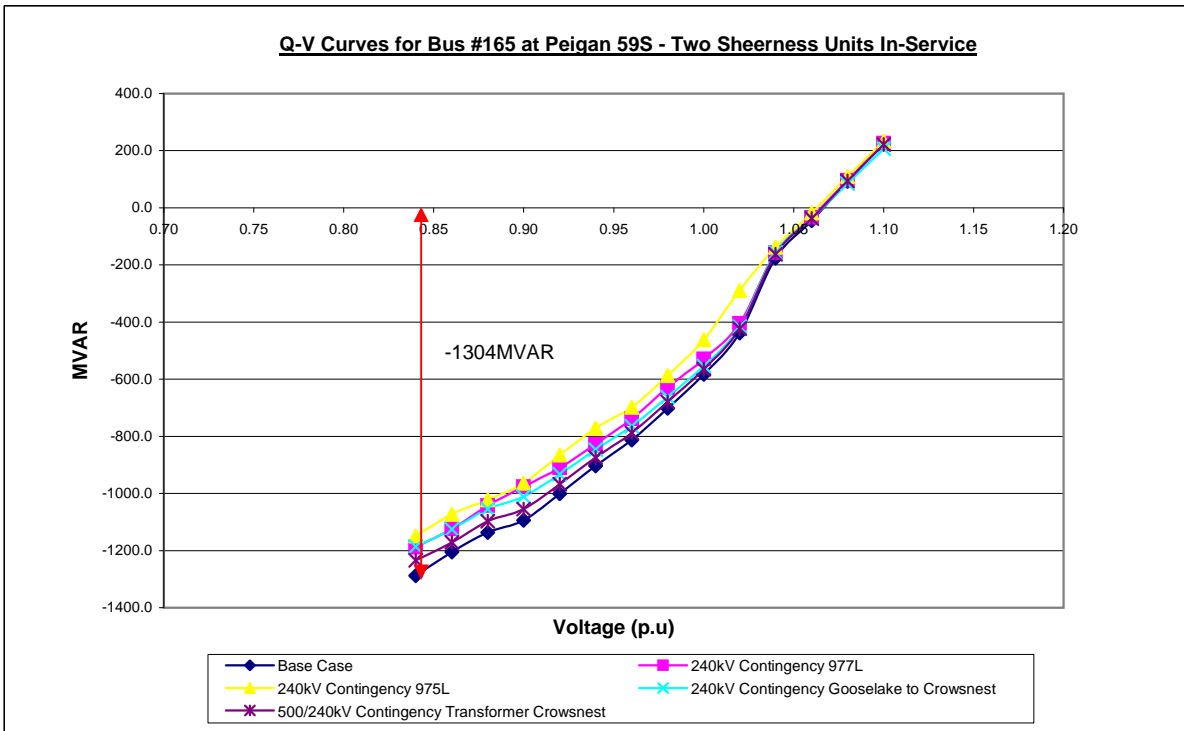


Figure QV-S1-3

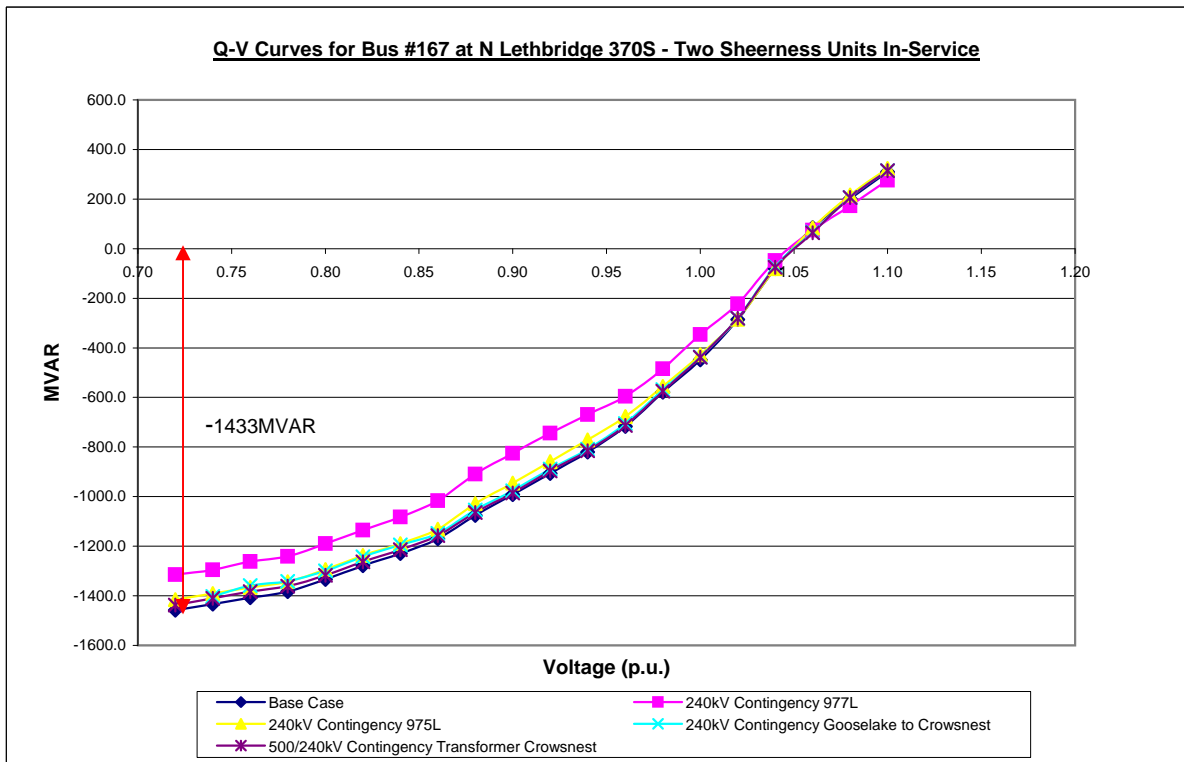


Figure QV-S1-4

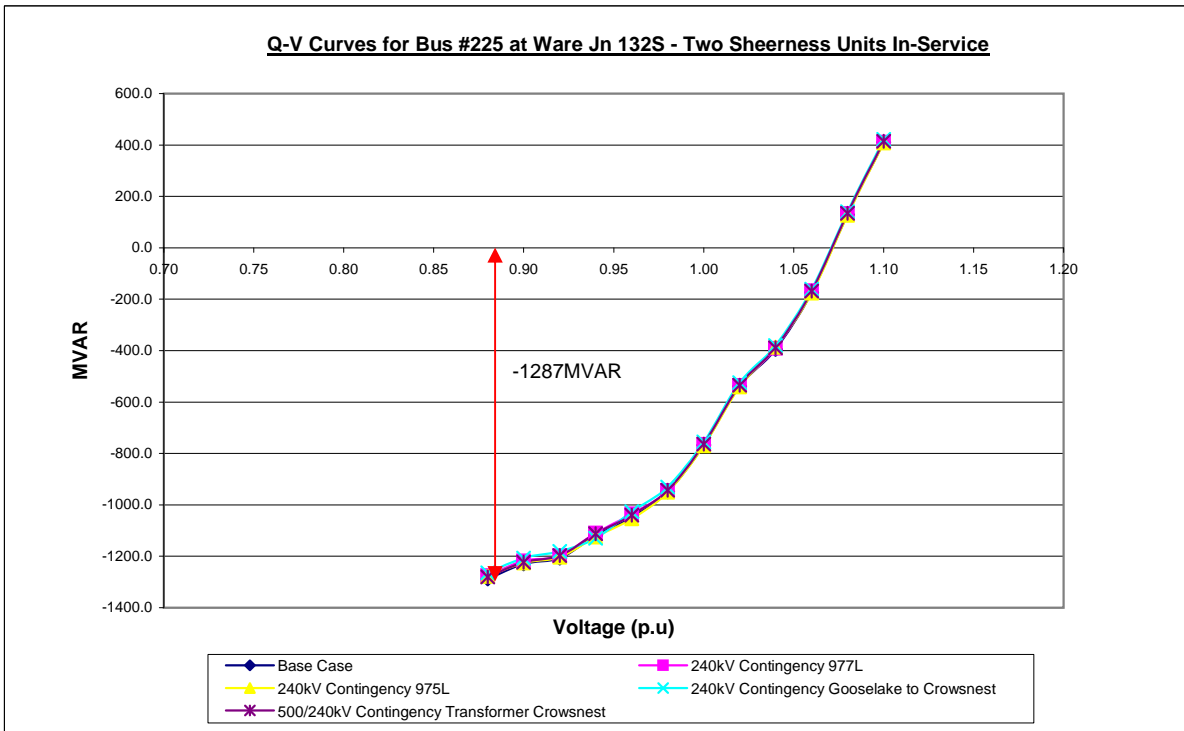


Figure QV-S1-5

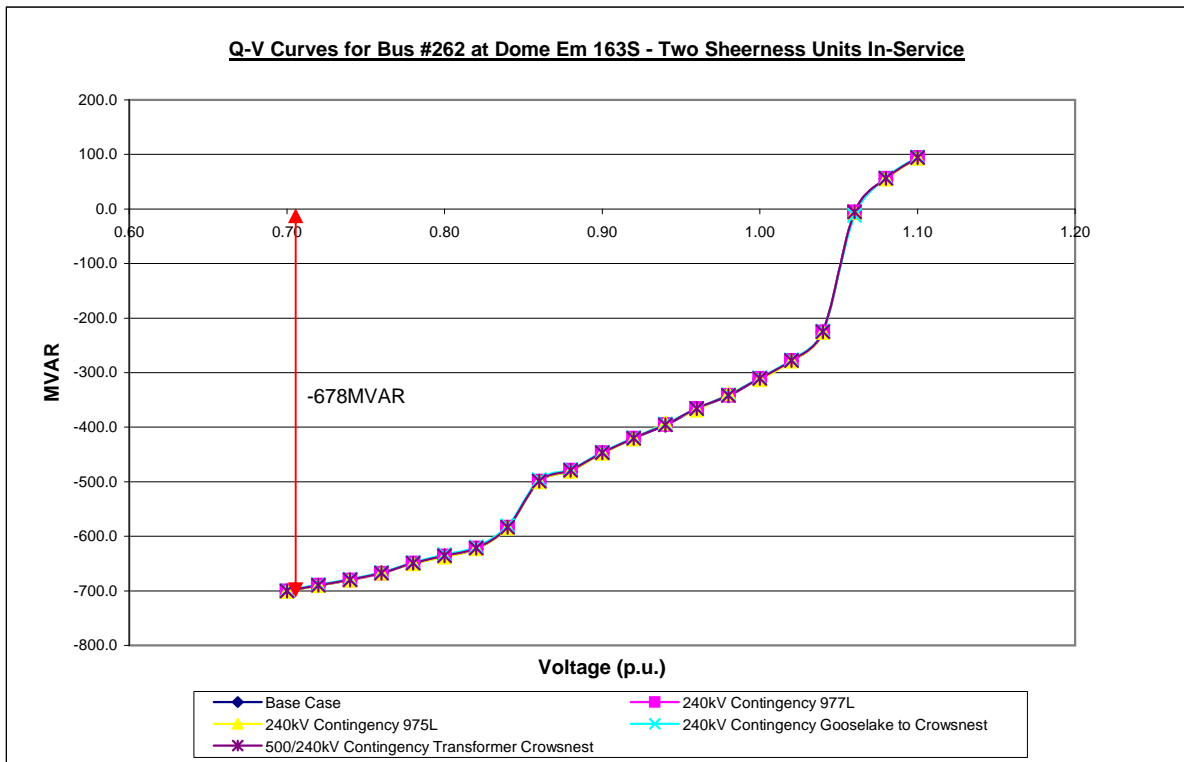


Figure QV-S1-6

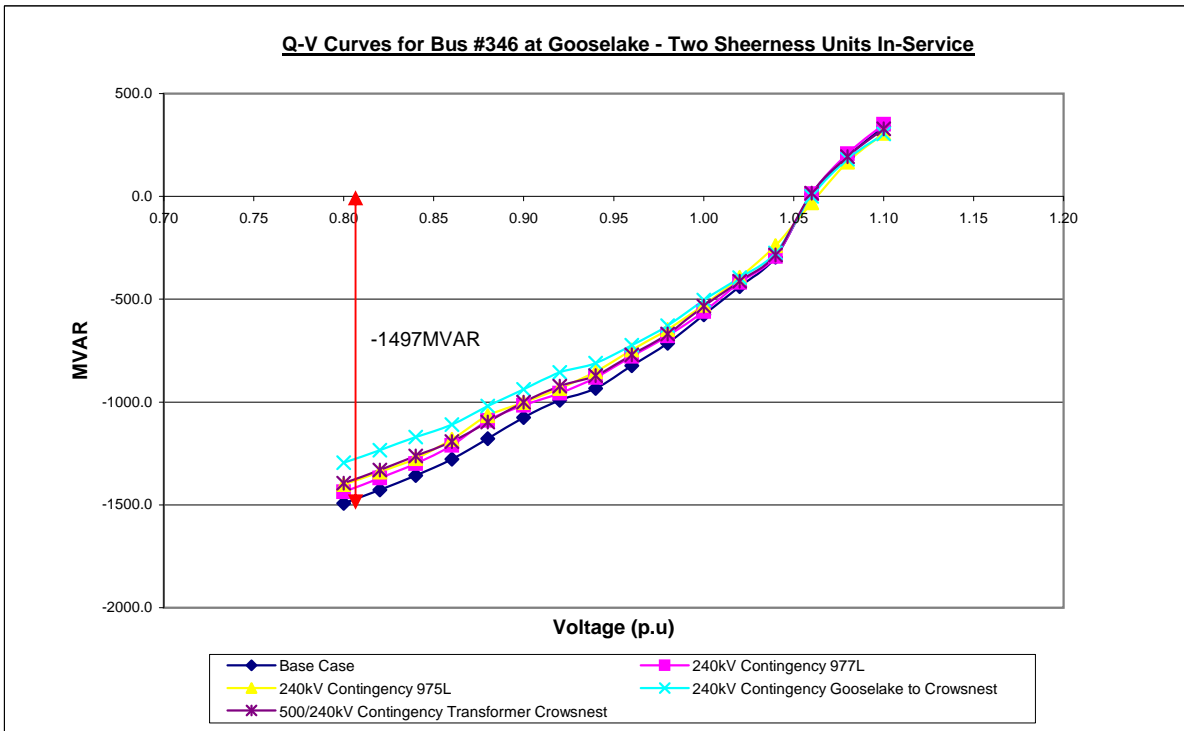


Figure QV-S1-7

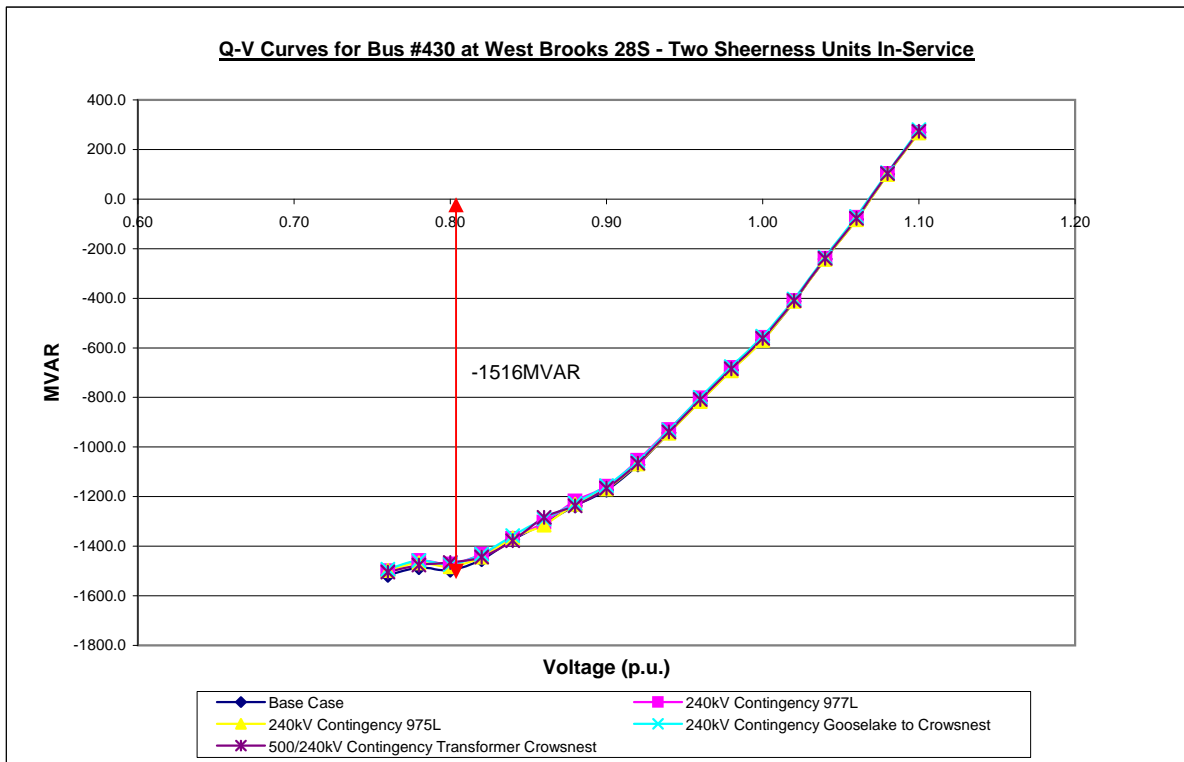
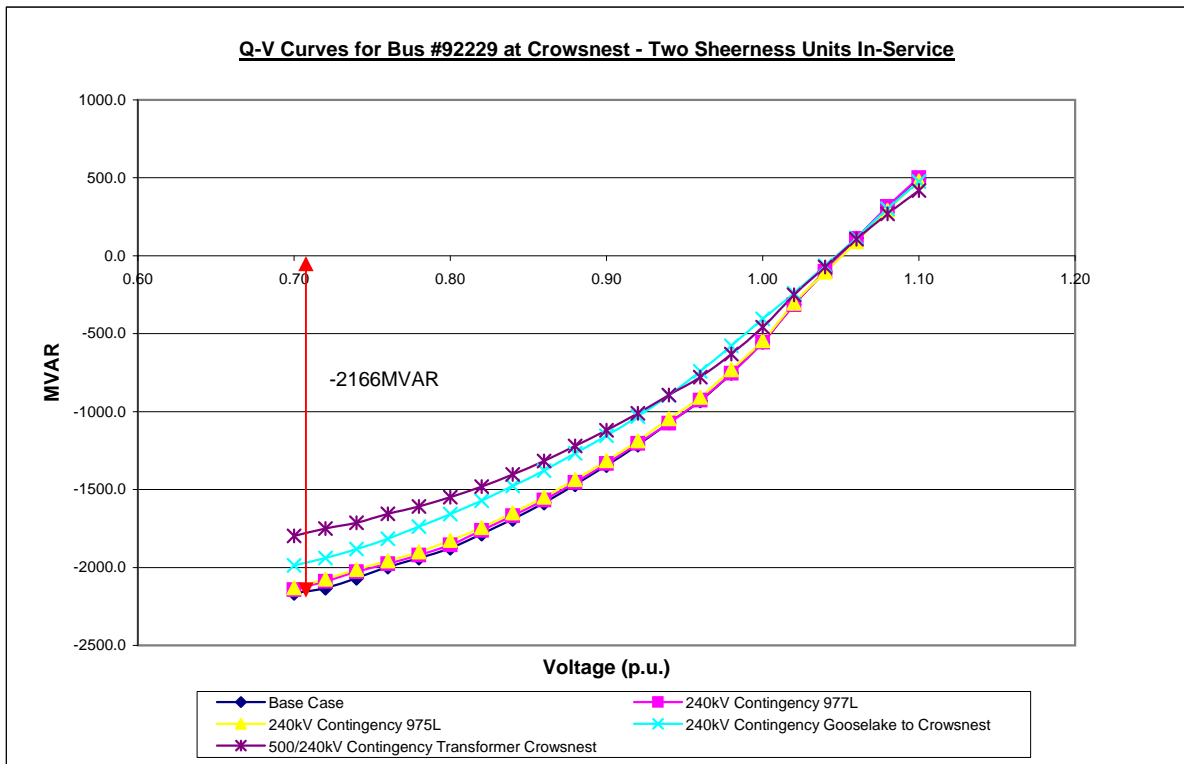
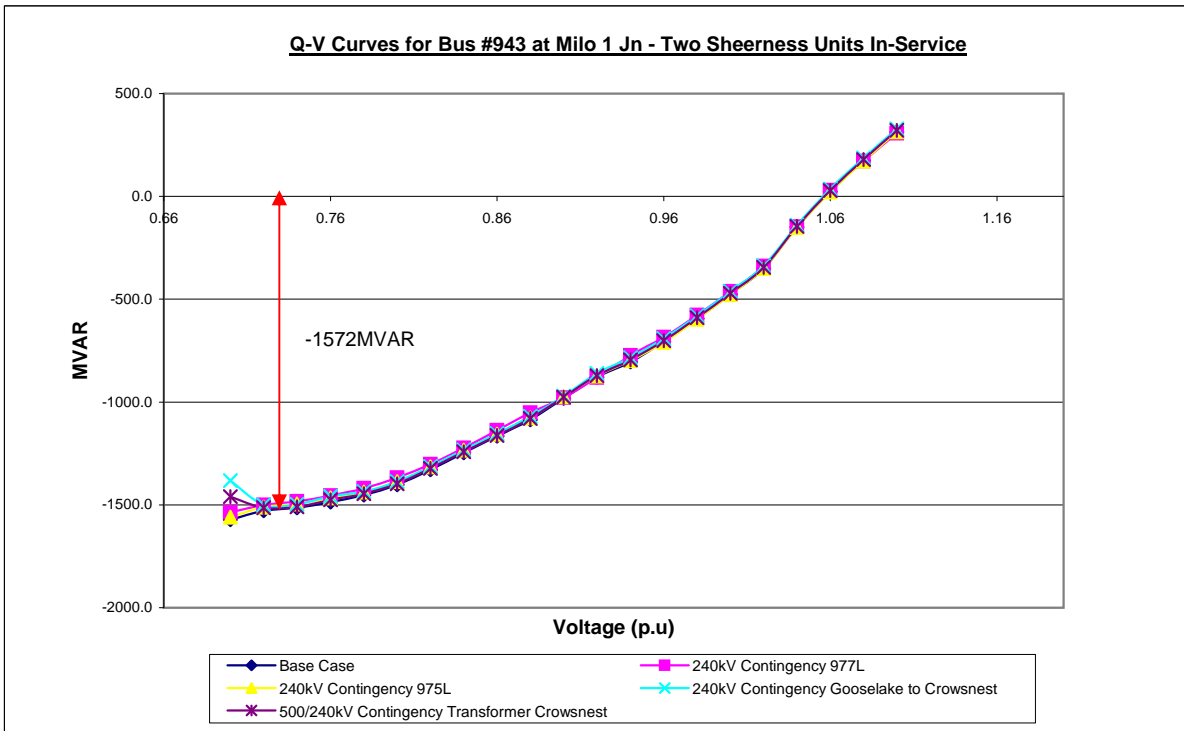


Figure QV-S1-8



Q-V Curves for Bus #92234 at Medicine Hat 41S - Two Sheerness Units In-Service

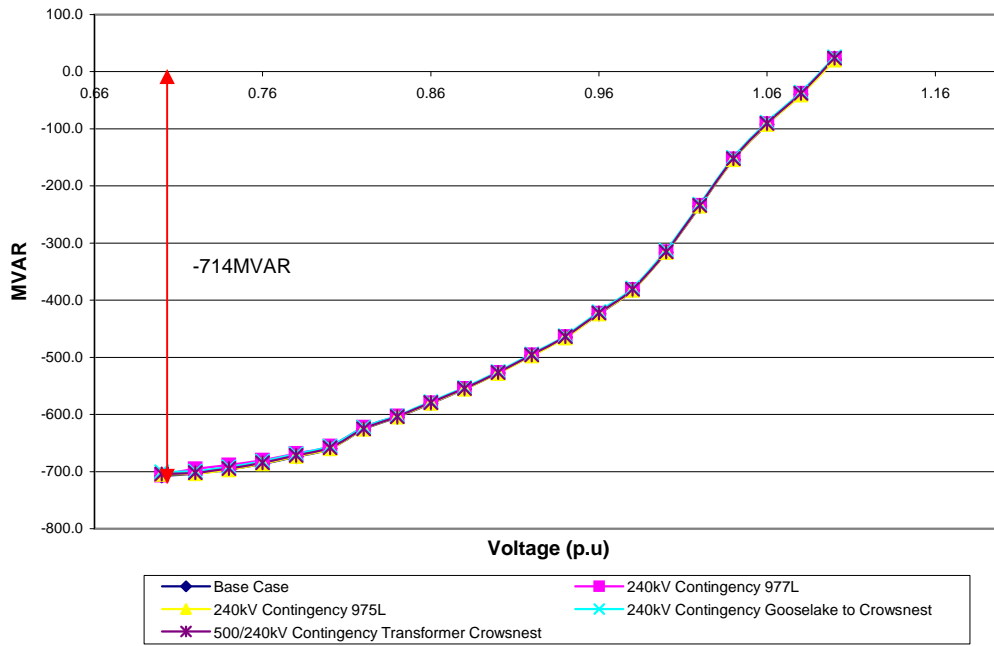


Figure QV-S1-11

Table D-25: Summary of Q-V Analysis Results: 2017 Summer Peak- Alternative 1A Scenario 2 (with one Sheerness units out of service)

One sheerness unit in service				
Figure No.	Langdon 102S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-1		Base Case	1575	Yes
	1	977L Peigan to N Lethbridge	1562	Yes
	2	500240kV Transformer at Crowsnest	1568	Yes
	3	975L Peigan to Goose Lake	1548	Yes
	4	240kV from Goose Lake to Crowsnest	1564	Yes

One sheerness unit in service				
Figure No.	Janet 74S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-2		Base Case	1009	Yes
	1	977L Peigan to N Lethbridge	1003	Yes
	2	500240kV Transformer at Crowsnest	998	Yes
	3	975L Peigan to Goose Lake	987	Yes
	4	240kV from Goose Lake to Crowsnest	980	Yes

One sheerness unit in service				
Figure No.	Peigan 59S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-3		Base Case	1192	Yes
	1	977L Peigan to N Lethbridge	1103	Yes
	2	500240kV Transformer at Crowsnest	1110	Yes
	3	975L Peigan to Goose Lake	1154	Yes
	4	240kV from Goose Lake to Crowsnest	1121	Yes

One sheerness unit in service				
Figure No.	N.Lethbridge 370S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-4		Base Case	1435	Yes
	1	977L Peigan to N Lethbridge	1309	Yes
	2	500240kV Transformer at Crowsnest	1414	Yes
	3	975L Peigan to Goose Lake	1390	Yes
	4	240kV from Goose Lake to Crowsnest	1351	Yes

One sheerness unit in service				
Figure No.	Ware Junction 132S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-5		Base Case	1145	Yes
	1	977L Peigan to N Lethbridge	1139	Yes
	2	500240kV Transformer at Crowsnest	1138	Yes
	3	975L Peigan to Goose Lake	1139	Yes
	4	240kV from Goose Lake to Crowsnest	1131	Yes

One sheerness unit in service				
Figure No.	New Cypress Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-6		Base Case	693	Yes
	1	977L Peigan to N Lethbridge	692	Yes
	2	500240kV Transformer at Crowsnest	692	Yes
	3	975L Peigan to Goose Lake	694	Yes
	4	240kV from Goose Lake to Crowsnest	690	Yes

One sheerness unit in service				
Figure No.	Goose Lake 103S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-7		Base Case	1414	Yes
	1	977L Peigan to N Lethbridge	1356	Yes
	2	500240kV Transformer at Crowsnest	1326	Yes
	3	975L Peigan to Goose Lake	1447	Yes
	4	240kV from Goose Lake to Crowsnest	1233	Yes

One sheerness unit in service				
Figure No.	W. Brooks 28S	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-8		Base Case	1298	Yes
	1	977L Peigan to N Lethbridge	1298	Yes
	2	500240kV Transformer at Crowsnest	1289	Yes
	3	975L Peigan to Goose Lake	1292	Yes
	4	240kV from Goose Lake to Crowsnest	1278	Yes

One sheerness unit in service				
Figure No.	New Milo Junction	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-9		Base Case	1378	Yes
	1	977L Peigan to N Lethbridge	1387	Yes
	2	500240kV Transformer at Crowsnest	1372	Yes
	3	975L Peigan to Goose Lake	1357	Yes
	4	240kV from Goose Lake to Crowsnest	1364	Yes

One sheerness unit in service				
Figure No.	New Crowsnest Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-10		Base Case	1910	Yes
	1	977L Peigan to N Lethbridge	1863	Yes
	2	500240kV Transformer at Crowsnest	1674	Yes
	3	975L Peigan to Goose Lake	1983	Yes
	4	240kV from Goose Lake to Crowsnest	1902	Yes

One sheerness unit in service				
Figure No.	New Medicine Hat 2 Substation	Contingency	Reactive Power Reserve (MVAR)	Reactive Power Margin Requirement Met?
Fig QV-S2-11		Base Case	707	Yes
	1	977L Peigan to N Lethbridge	704	Yes
	2	500240kV Transformer at Crowsnest	705	Yes
	3	975L Peigan to Goose Lake	704	Yes
	4	240kV from Goose Lake to Crowsnest	703	Yes

Q-V Curves for Bus #158 at Langdon 102S - One Sheerness Unit In-Service

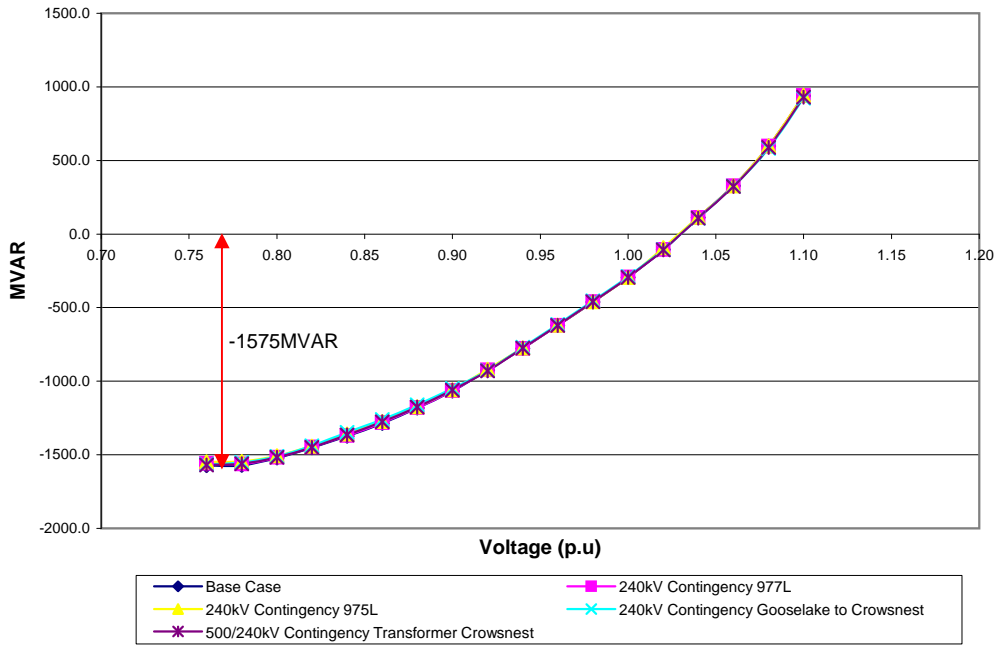


Figure QV-S2-1

Q-V Curves for Bus #160 at Janet 74S - One Sheerness Unit In-Service

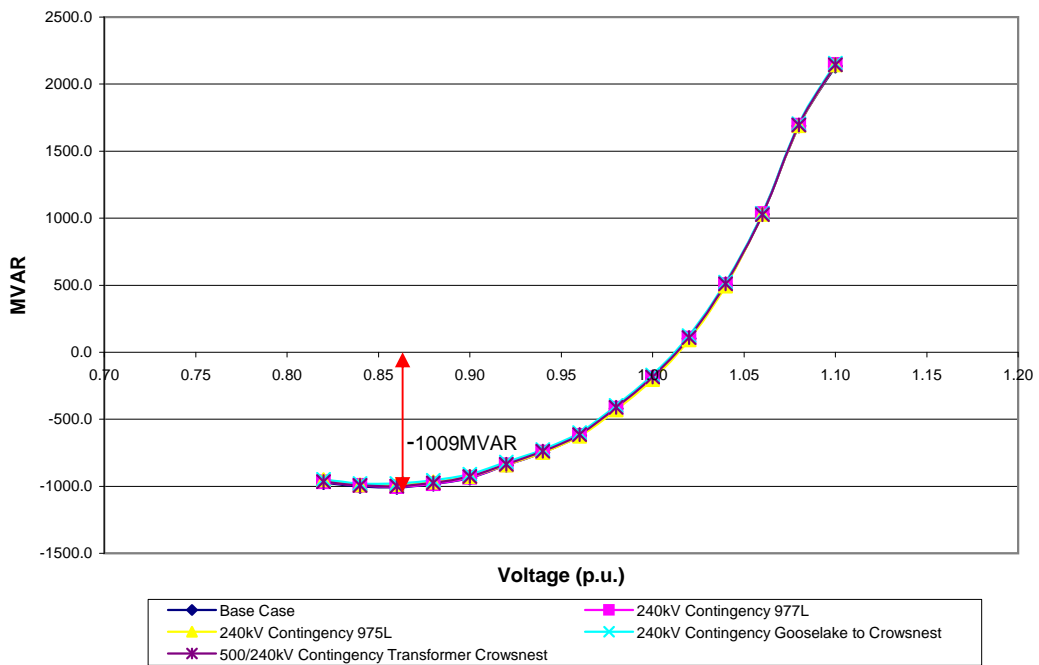


Figure QV-S2-2

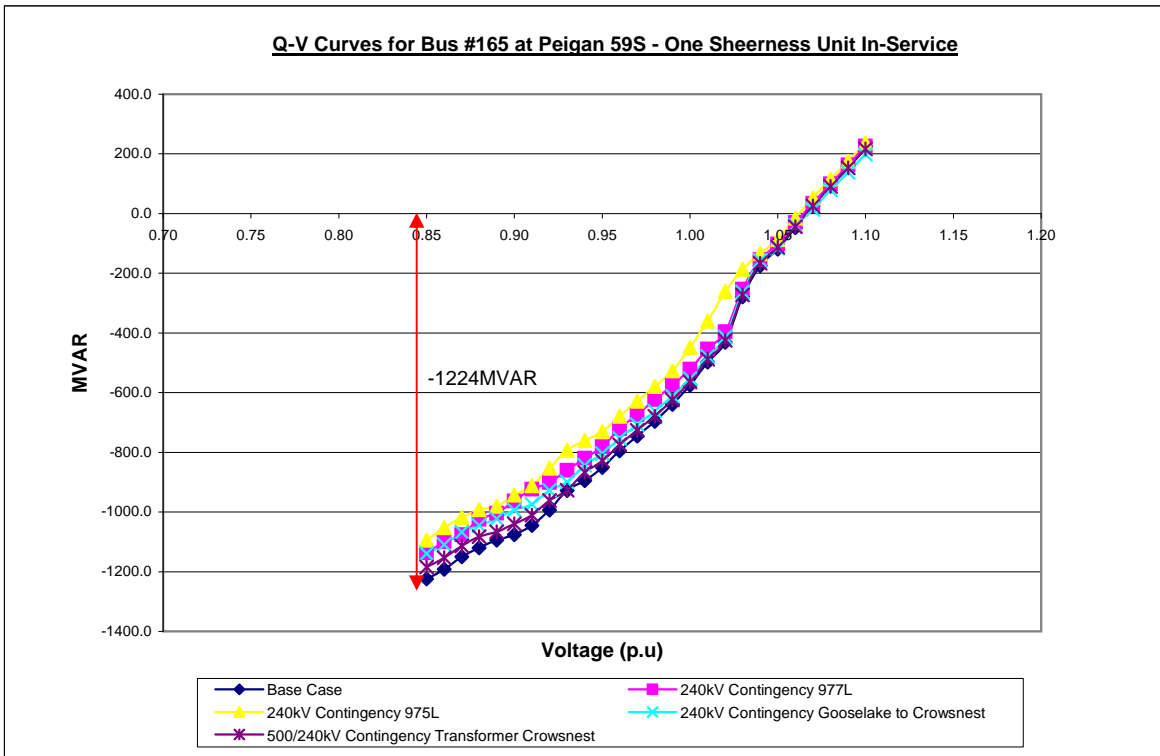


Figure QV-S2-3

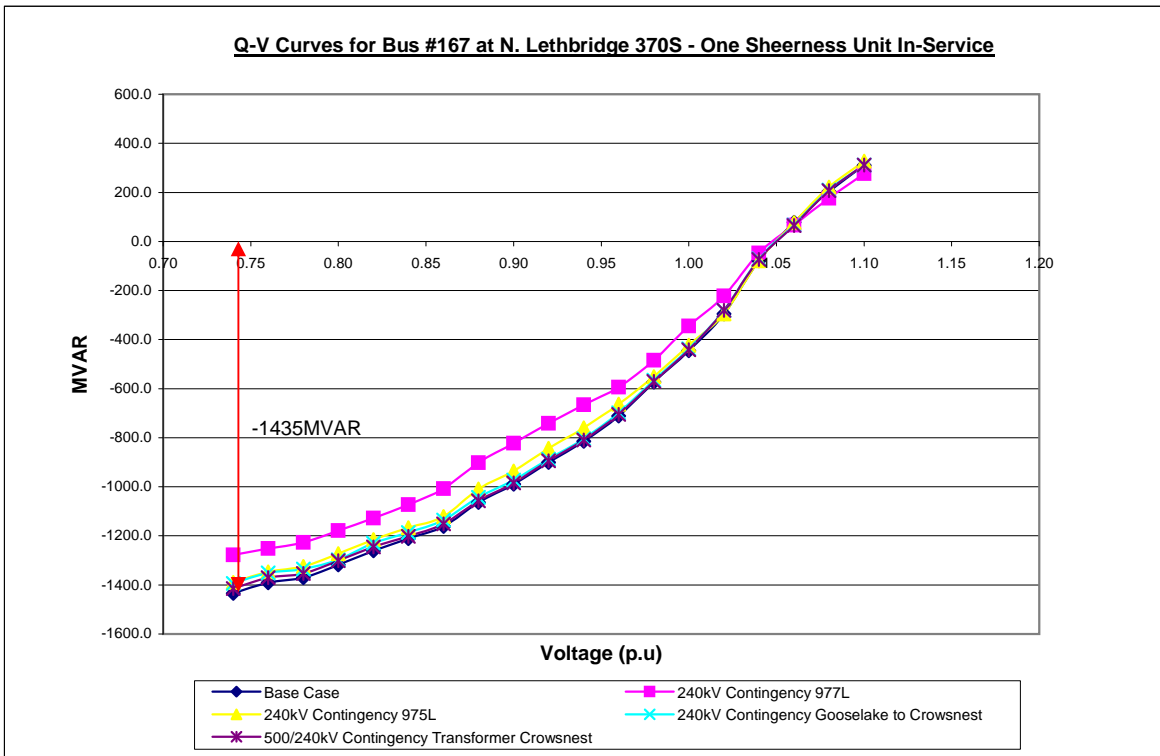


Figure QV-S2-4

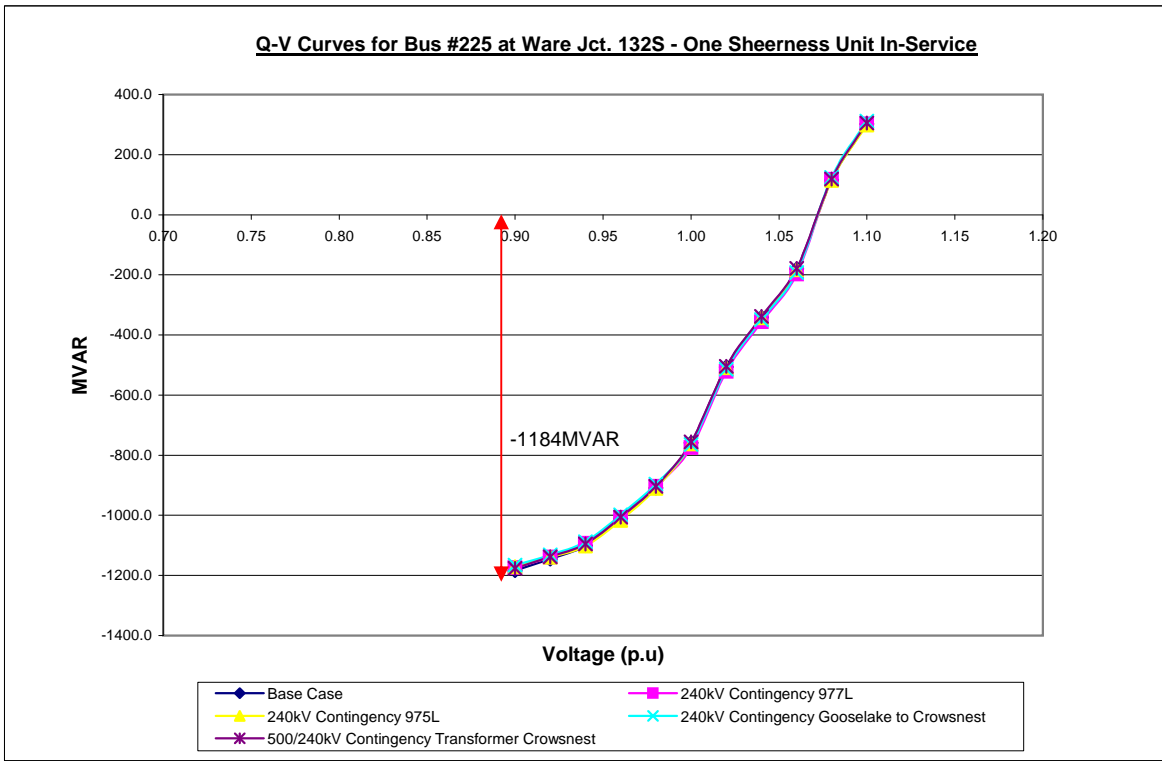


Figure QV-S2-5

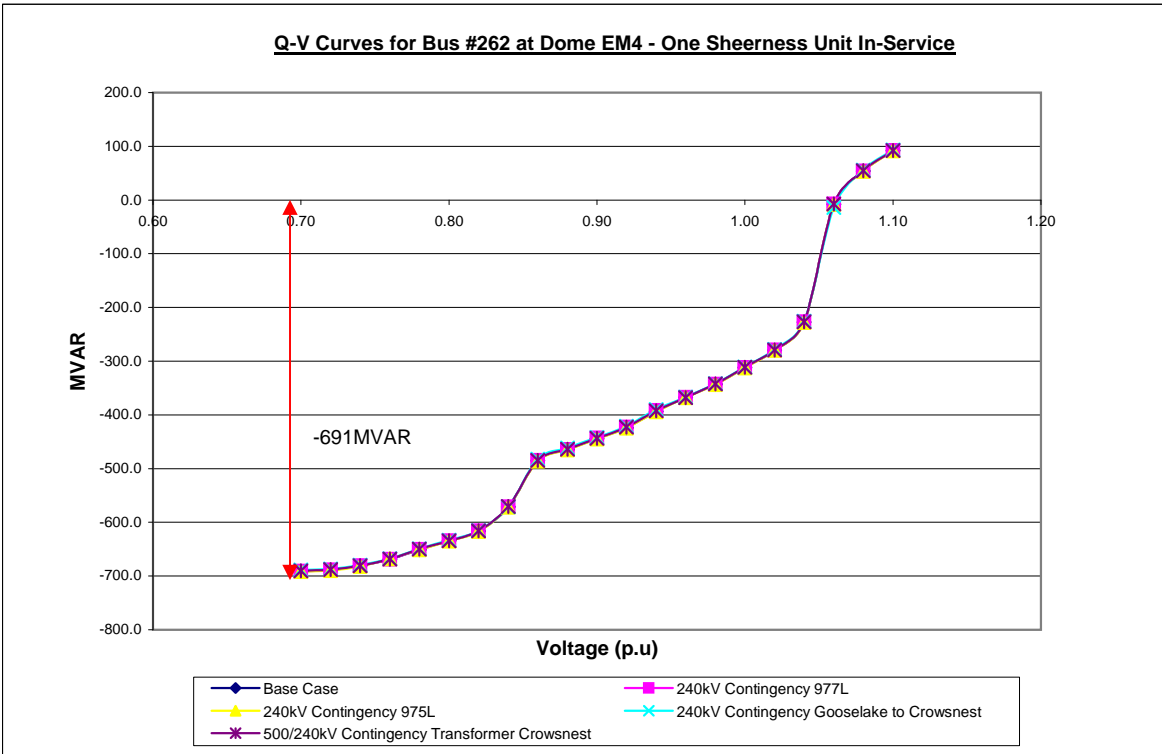


Figure QV-S2-6

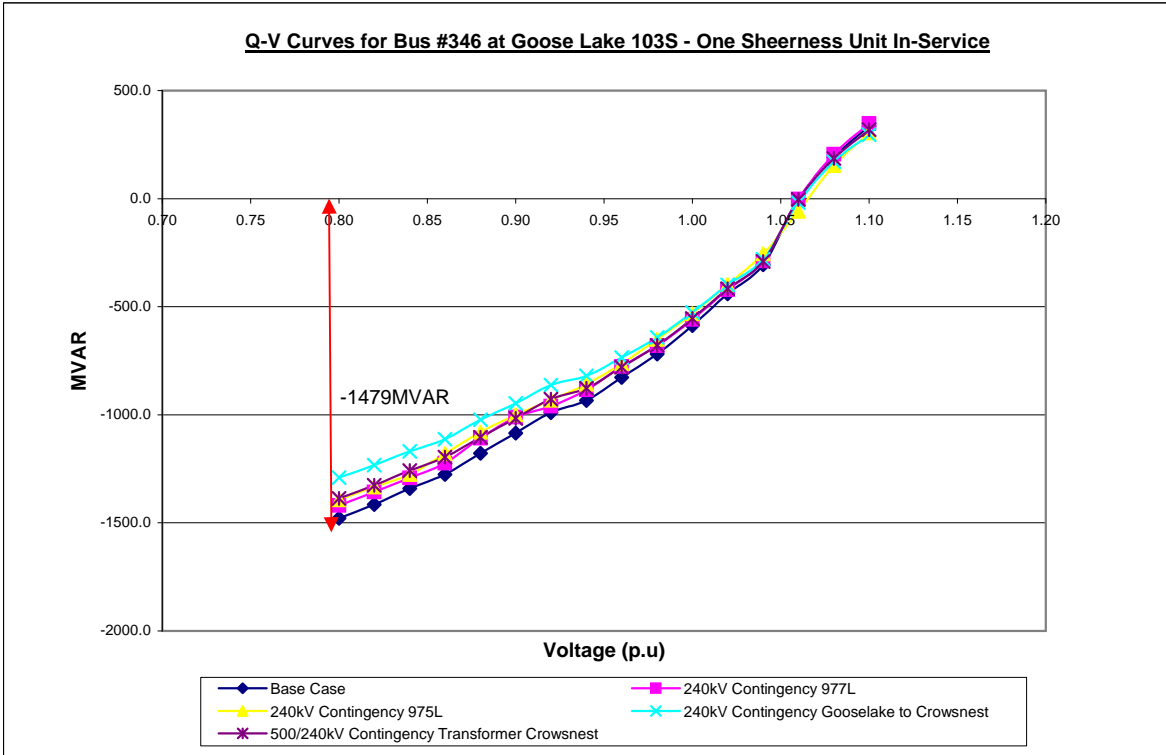


Figure QV-S2-7

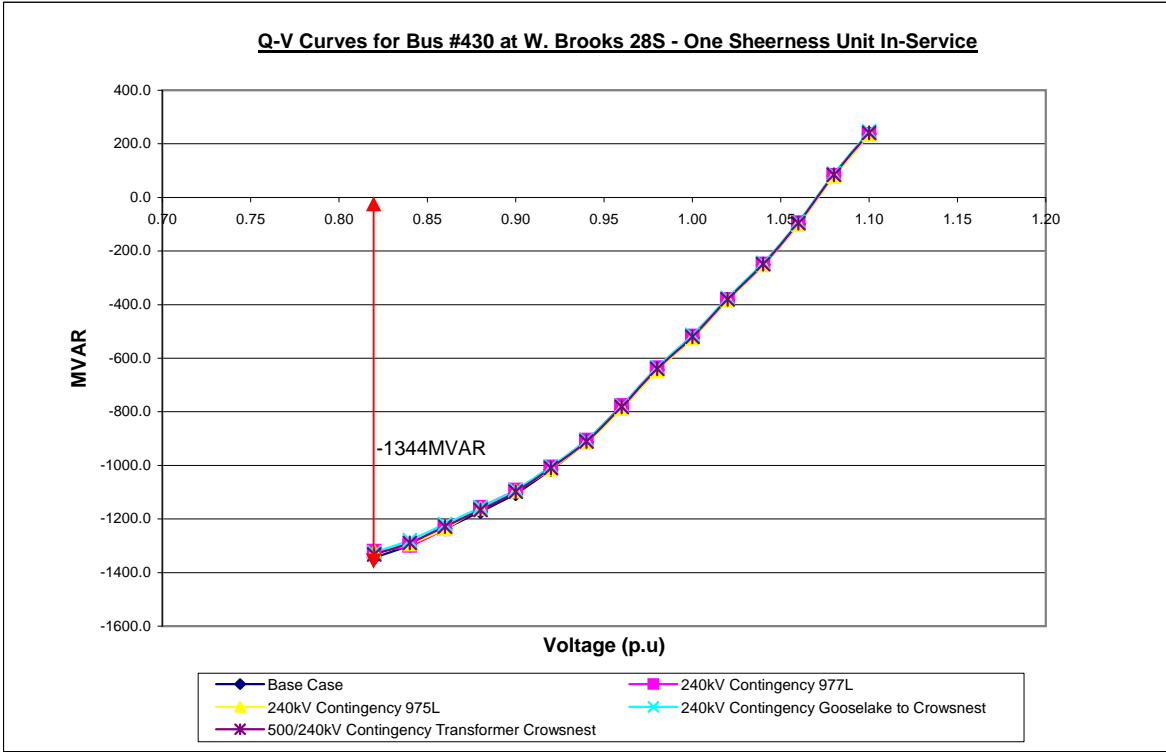


Figure QV-S2-8

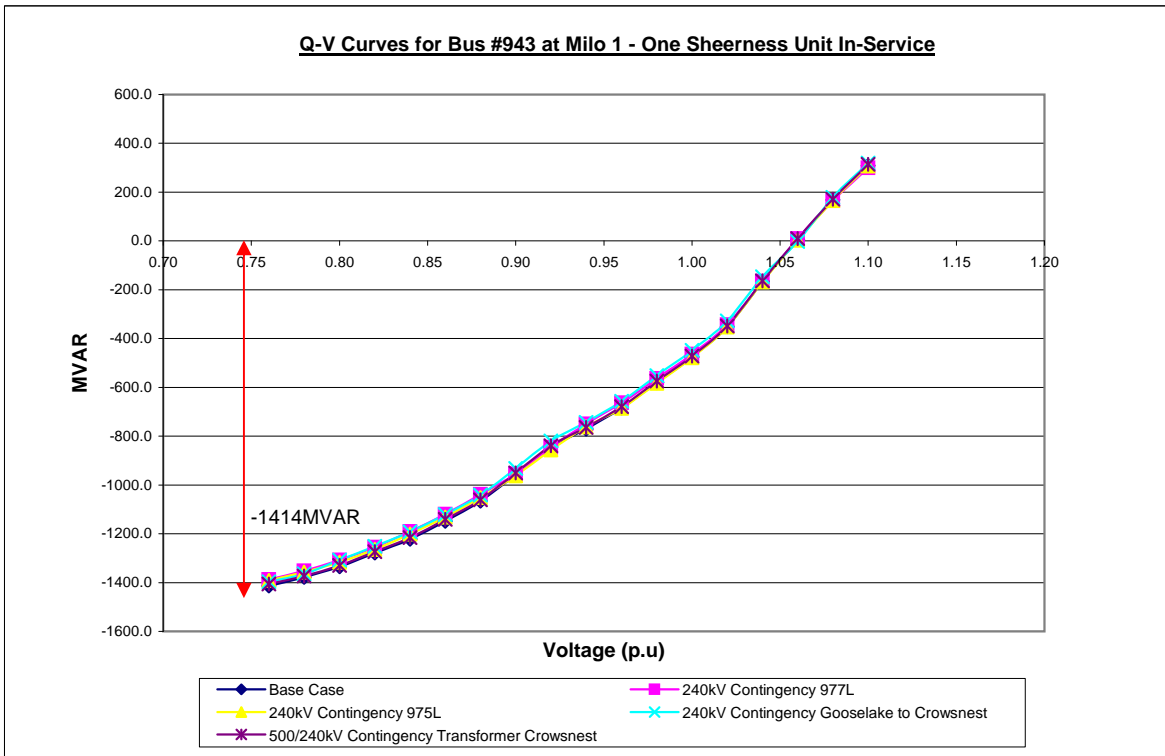


Figure QV-S2-9

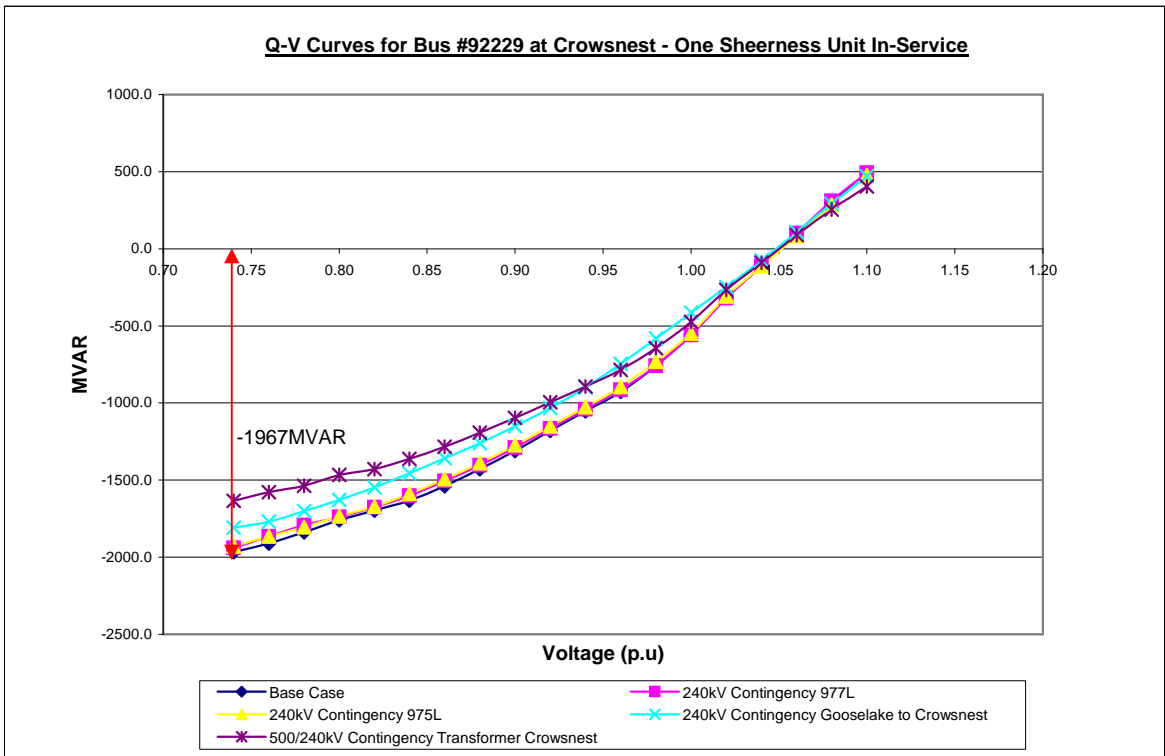


Figure QV-S2-10