

CASE 1: year=2012, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.

25 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Generators not converted to synchronous condensers:

Swing bus power: 539.6 MW

0 undervoltage buses, 167 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 2: year=2012, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.

0 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 804.2 MW

0 undervoltage buses, 178 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 3: year=2012, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.

69 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 172.7 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 7: year=2015, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.
200 generators were added.
Generators not removed:
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:
Wabash River (2) at 251888
Wabash River (3) at 251889
Wabash River (5) at 251892
Cape Fear (1) at 304880
Cape Fear (1) at 304881

Generators not converted to synchronous condensers:
Swing bus power: -881.2 MW

0 undervoltage buses, 156 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 10: year=2015, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

203 generators were removed.
0 generators were added.
Generators not removed:
Elk Mound (Z) at 680516
Vogtle Electric Generating Plant, Unit 3 (3) at 383753
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567
Eastlake (Z) at 238683

Generators not converted to synchronous condensers:
Swing bus power: 3351.8 MW

2 undervoltage buses, 153 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
05SPORN (242528)-06KYGER (248005) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 12: year=2015, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

203 generators were removed.
105 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567
Eastlake (Z) at 238683
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:
Swing bus power: -507.6 MW

8 undervoltage buses, 159 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]

CASE 13: year=2015, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

203 generators were removed.
137 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Eastlake (Z) at 238683

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:

Swing bus power: 2148.9 MW

4 undervoltage buses, 160 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]

CNASTONE (200004)-01KEMPTOWN (235632) [1]

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

GRACETON (220964)-BAGLEY (221000) [1]

RAPHAEL (220980)-BAGLEY (221000) [1]

05ELIMEQ (242909)-05E LIMA (242989) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 14: year=2017, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.

209 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Plant Mitchell (C) at 383783

Wabash River (2) at 251888

Wabash River (3) at 251889

Wabash River (5) at 251892

Cape Fear (1) at 304880

Cape Fear (1) at 304881

Weatherspoon (A) at 304924

Weatherspoon (A) at 304925

Weatherspoon (A) at 304927

Chesapeake (J) at 315101

Chesapeake (I) at 315101

Chesapeake (H) at 315100

Chesapeake (G) at 315100

Rivesville 6 (1) at 235576

Generators not converted to synchronous condensers:

Swing bus power: -795.6 MW

0 undervoltage buses, 134 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 15: year=2017, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

155 generators were removed.

0 generators were added.

Generators not removed:

Meramec (2) at 345140
Meramec (H) at 345148
Meramec (H) at 345156
Sibley (1) at 541153
Sibley (2) at 541152
Riverbend (7) at 306040
Glen Gardner (Z) at 206331
Glen Gardner (Z) at 206333
Avon Lake (Z) at 238554
Avon Lake (Z) at 238555
Conesville (3) at 243654
Eastlake (Z) at 238683
Miami Fort (6) at 251949
Muskingum River (2) at 242940
Muskingum River (3) at 243045
Muskingum River (4) at 242940
WC Beckjord (1) at 251939
WC Beckjord (2) at 251934
WC Beckjord (3) at 251935
WC Beckjord (4) at 251936
WC Beckjord (5) at 251937
WC Beckjord (6) at 251938
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Shawville 1 (Z) at 200715
Shawville 2 (2) at 200722
Shawville 3 (3) at 200665
Shawville 4 (4) at 200666
Sunbury Generation LP (1) at 209017
Canadys Steam (1) at 370812
Welsh 2 (1) at 509405
Chesapeake 3 (3) at 315096
Chesapeake 1 (1) at 315094
Chesapeake 2 (2) at 315095
Chesapeake 4 (4) at 315097
Clinch River (3H) at 242903

Clinch River (3L) at 242904
Glen Lyn (5) at 242650
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Yorktown (1) at 315090
Yorktown (2) at 315091
Valley (Z) at 699506
Albright Power Station 1 (1) at 235564
Albright Power Station 2 (1) at 235565
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (1L) at 243193
Kammer (3H) at 243196
Kammer (3L) at 243197
Kammer (2H) at 243194
Kammer (2L) at 243195
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Willow Island (1) at 235577
Willow Island (1) at 235578
Meramec (L) at 345148
Meramec (L) at 345156
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807
Muskingum River (A) at 243045
Muskingum River (B) at 242940
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 1446.8 MW

2 undervoltage buses, 125 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 16: year=2016, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

194 generators were removed.

0 generators were added.

Generators not removed:

Harllee Branch (2) at 383692

State Line3 (H) at 274679

Wabash River (6) at 251893

Cane Run (6) at 324012

J.R. Whiting (All Units) (Z) at 256368

WC Beckjord (6) at 251938

Welsh 2 (1) at 509405

Valley (Z) at 699506

Generators not added:

Generators converted to synchronous condensers:

Harllee Branch (1) at 383691

Marion (4) at 350234

State Line4 (H) at 274680

State Line3 (L) at 274679

Tanners Creek (4) at 243233

Cane Run (5) at 324011

Meramec (H) at 345156

Avon Lake (Z) at 238555

Bay Shore (Z) at 238567

Conesville (3) at 243654

Eastlake (Z) at 238683

WC Beckjord (5) at 251937

Armstrong (1) at 235569

Elrama Power Plant (4) at 254010

Portland (Z) at 204651

Portland (Z) at 204661

Chesapeake 3 (3) at 315096

Chesapeake 4 (4) at 315097

Yorktown (1) at 315090

Yorktown (2) at 315091

Meramec (L) at 345156

Generators not converted to synchronous condensers:

Swing bus power: 8165.8 MW

0 undervoltage buses, 126 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

05SPORN (242528)-06KYGER (248005) [1]

05MARQUI (242938)-06K-M533 (248012) [1]

05MUSKNG (242940)-05WATERF (242947) [1]

06KYGER (248005)-06K-M533 (248012) [2]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

ZION ; R (270941)-PLS PR2 (698849) [1]

6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 17: year=2016, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.
210 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Wabash River (2) at 251888
Wabash River (3) at 251889
Wabash River (5) at 251892
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Weatherspoon (A) at 304924
Weatherspoon (A) at 304925
Weatherspoon (A) at 304927
Chesapeake (J) at 315101
Chesapeake (I) at 315101
Chesapeake (H) at 315100
Chesapeake (G) at 315100
Rivesville 6 (1) at 235576

Generators not converted to synchronous condensers:

Swing bus power: -664.8 MW

0 undervoltage buses, 146 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 18: year=2016, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

221 generators were removed.
108 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Eastlake (Z) at 238683

Generators not converted to synchronous condensers:

Swing bus power: 245.3 MW

14 undervoltage buses, 145 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
NWEST326 (220961)-CONASTON (220963) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 19: year=2016, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

219 generators were removed.

140 generators were added.

Generators not removed:

Eastlake (Z) at 238683

Welsh 2 (1) at 509405

Elk Mound (Z) at 680516

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 10482.7 MW

6 undervoltage buses, 135 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 20: year=2017, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

205 generators were removed.
109 generators were added.
Generators not removed:
Tanners Creek (4) at 243233
Avon Lake (Z) at 238555
Eastlake (Z) at 238683
WC Beckjord (4) at 251936
WC Beckjord (5) at 251937
WC Beckjord (6) at 251938
Elrama Power Plant (4) at 254010
Shawville 4 (4) at 200666
Sunbury Generation LP (1) at 209017
Chesapeake 3 (3) at 315096
Chesapeake 4 (4) at 315097
Glen Lyn (7) at 242651
Valley (Z) at 699506
Albright Power Station 3 (1) at 235566
Willow Island (1) at 235578
Meramec (L) at 345148
Meramec (L) at 345156

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 7377.9 MW

4 undervoltage buses, 133 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 21: year=2017, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

220 generators were removed.
141 generators were added.
Generators not removed:
Eastlake (Z) at 238683

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 11615.4 MW

12 undervoltage buses, 125 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

GRACETON (220964)-BAGLEY (221000) [1]

RAPHAEL (220980)-BAGLEY (221000) [1]

05AMOS (242522)-05SPORN (242528) [1]

05SPORN (242528)-05WATERF (242947) [1]

05SPORN (242528)-06KYGER (248005) [1]

05TRISTA (242529)-06KYGER (248005) [1]

05ELIMEQ (242909)-05E LIMA (242989) [1]

05MARQUI (242938)-06DOE530 (248003) [1]

05MARQUI (242938)-06K-M533 (248012) [1]

05MUSKNG (242940)-05WATERF (242947) [1]

06DOE530 (248003)-06KYGER (248005) [1]

06DOE530 (248003)-06KYGER (248005) [2]

06DOE533 (248004)-06KYGER (248005) [1]

06KYGER (248005)-06K-M533 (248012) [2]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 22: year=2012, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.

95 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 252.1 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 23: year=2013, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.
25 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Generators not converted to synchronous condensers:
Swing bus power: 539.8 MW

0 undervoltage buses, 157 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 24: year=2013, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.
0 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 818.5 MW

0 undervoltage buses, 172 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 25: year=2013, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.
80 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 1231.8 MW

0 undervoltage buses, 187 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 26: year=2013, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

24 generators were removed.

111 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 983.7 MW

0 undervoltage buses, 186 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 27: year=2014, gensRemoved=0, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

0 generators were removed.

85 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Generators not converted to synchronous condensers:

Swing bus power: 640.0 MW

2 undervoltage buses, 162 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
AVSDC1TY (659212)-AVSDC2TY (659213) [1]
AVSDC1TY (659212)-AVSDC5TY (659216) [1]
AVSDC2TY (659213)-AVSDC6TY (659217) [1]
AVSDC5TY (659216)-AVSDC6TY (659217) [1]

CASE 28: year=2014, gensRemoved=1, gas=0, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

87 generators were removed.

0 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 937.5 MW

0 undervoltage buses, 156 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 29: year=2014, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=0

87 generators were removed.

86 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

CPV Valley Energy Center (1) at 148996

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: -45.9 MW

0 undervoltage buses, 179 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 30: year=2014, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=0

87 generators were removed.

119 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 983.3 MW

0 undervoltage buses, 168 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 31: year=2012, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

24 generators were removed.

69 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 172.7 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 32: year=2013, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

24 generators were removed.

80 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 1231.8 MW

0 undervoltage buses, 187 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 33: year=2014, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

87 generators were removed.

86 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

CPV Valley Energy Center (1) at 148996

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: -45.9 MW

0 undervoltage buses, 179 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 34: year=2015, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

203 generators were removed.

106 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Eastlake (Z) at 238683

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:

Swing bus power: -1617.2 MW

8 undervoltage buses, 158 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]

CNASTONE (200004)-01KEMPTOWN (235632) [1]

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

GRACETON (220964)-BAGLEY (221000) [1]

RAPHAEL (220980)-BAGLEY (221000) [1]

05ELIMEQ (242909)-05E LIMA (242989) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]

ZION ; R (270941)-PLS PR2 (698849) [1]

6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 35: year=2016, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

221 generators were removed.

111 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Eastlake (Z) at 238683

Generators not converted to synchronous condensers:

Swing bus power: -1849.4 MW

15 undervoltage buses, 145 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]

CNASTONE (200004)-01KEMPTOWN (235632) [1]

BUCKNG12 (213451)-BUCKNGHM (213453) [1]

W.CALD G (216923)-KNGLND G (217084) [1]

NWEST326 (220961)-CONASTON (220963) [1]

GRACETON (220964)-BAGLEY (221000) [1]

RAPHAEL (220980)-BAGLEY (221000) [1]

05ELIMEQ (242909)-05E LIMA (242989) [1]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 36: year=2017, gensRemoved=1, gas=1, wind=0, synCon=0,
nukesRemoved=0, addNukes=1

220 generators were removed.
113 generators were added.
Generators not removed:
Eastlake (Z) at 238683

Generators not added:

Generators converted to synchronous condensers:
Avon Lake (Z) at 238555
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 11089.3 MW

6 undervoltage buses, 130 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05AMOS (242522)-05SPORN (242528) [1]
05SPORN (242528)-05WATERF (242947) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 37: year=2012, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

24 generators were removed.
95 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 252.1 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 38: year=2013, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

24 generators were removed.
111 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 983.7 MW

0 undervoltage buses, 186 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 39: year=2014, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

87 generators were removed.
119 generators were added.
Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 983.3 MW

0 undervoltage buses, 168 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 40: year=2015, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

203 generators were removed.
138 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Eastlake (Z) at 238683
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:
Swing bus power: 987.2 MW

4 undervoltage buses, 159 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]

CASE 41: year=2016, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

219 generators were removed.
143 generators were added.
Generators not removed:
Eastlake (Z) at 238683
Welsh 2 (1) at 509405

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 10565.9 MW

6 undervoltage buses, 135 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 42: year=2017, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=0, addNukes=1

220 generators were removed.

145 generators were added.

Generators not removed:

Eastlake (Z) at 238683

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 10376.4 MW

3 undervoltage buses, 129 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]

CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 43: year=2012, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

72 generators were removed.

95 generators were added.

Generators not removed:

Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005
Oconee Nuclear Station, Unit 3 (3) at 306007
Oconee Nuclear Station, Unit 2 (2) at 306006
Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040
Brunswick Steam Electric Plant, Unit 1 (1) at 304862
Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803
Hope Creek Generating Station, Unit 1 (1) at 200039
Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
Clinton Power Station, Unit 1 (1) at 349101
Fermi, Unit 2 (1) at 264854
McGuire Nuclear Station, Unit 2 (2) at 306002
McGuire Nuclear Station, Unit 1 (1) at 306001
LaSalle County Station, Unit 1 (1) at 274660
LaSalle County Station, Unit 2 (2) at 274661
Watts Bar Nuclear Plant, Unit 1 (1) at 4021
Sequoyah Nuclear Plant, Unit 2 (1) at 4012
Catawba Nuclear Station, Unit 1 (1) at 306003
Catawba Nuclear Station, Unit 2 (2) at 306004
Limerick Generating Station, Unit 1 (1) at 213742
Limerick Generating Station, Unit 2 (1) at 200042
Byron Station, Unit 2 (2) at 274657
Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
Vogtle Electric Generating Plant, Unit 1 (1) at 383751
Braidwood Station, Unit 2 (2) at 274655
Sequoyah Nuclear Plant, Unit 1 (1) at 4011
Vogtle Electric Generating Plant, Unit 2 (2) at 383752
Salem Nuclear Generating Station, Unit 2 (1) at 200037
Byron Station, Unit 1 (1) at 274656
Waterford Steam Electric Station, Unit 3 (1) at 336153
Salem Nuclear Generating Station, Unit 1 (1) at 200036
Braidwood Station, Unit 1 (1) at 274654
Susquehanna Steam Electric Station, Unit 2 (1) at 200038
Callaway Plant (1) at 344225
Perry Nuclear Power Plant, Unit 1 (1) at 239035
Grand Gulf Nuclear Station, Unit 1 (1) at 336821
Susquehanna Steam Electric Station, Unit 1 (1) at 208918

Generators removed:

Fort Calhoun Station, Unit 1 (1) at 645001
Point Beach Nuclear Plant, Unit 1 (1) at 699434
Point Beach Nuclear Plant, Unit 2 (2) at 699435
Kewaunee Power Station (1) at 699631
R.E. Ginna Nuclear Power Plant (1) at 149140

Duane Arnold Energy Center (1) at 629074
 Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325
 Nine Mile Point Nuclear Station, Unit 1 (1) at 136701
 H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864
 Cooper Nuclear Station (1) at 640009
 Palisades Nuclear Plant (1) at 256338
 Surry Nuclear Power Station, Unit 2 (2) at 315233
 Three Mile Island Nuclear Station, Unit 1 (1) at 204659
 Surry Nuclear Power Station, Unit 1 (1) at 315116
 Arkansas Nuclear One, Unit 1 (1) at 337910
 Oconee Nuclear Station, Unit 1 (1) at 306005
 Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041
 James A. FitzPatrick Nuclear Power Plant (1) at 147797
 Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462
 Dresden Nuclear Power Station, Unit 3 (3) at 274659
 Dresden Nuclear Power Station, Unit 2 (2) at 274658
 Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461
 Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811
 Quad Cities Nuclear Power Station, Unit 1 (1) at 274662
 Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812
 Beaver Valley Power Station, Unit 2 (2) at 253901
 Beaver Valley Power Station, Unit 1 (1) at 253900
 Quad Cities Nuclear Power Station, Unit 2 (2) at 274663
 Davis-Besse Nuclear Power Station, Unit 1 (2) at 238670
 Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865
 North Anna Power Station, Unit 1 (1) at 315225
 Brunswick Steam Electric Plant, Unit 2 (1) at 304863
 North Anna Power Station, Unit 2 (2) at 315226
 River Bend Station, Unit 1 (1) at 335831
 Arkansas Nuclear One, Unit 2 (1) at 337911
 Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440
 Indian Point Nuclear Generating, Unit 2 (2) at 126651
 Indian Point Nuclear Generating, Unit 3 (1) at 147798
 Vogtle Electric Generating Plant, Unit 3 (3) at 383753
 Vogtle Electric Generating Plant, Unit 4 (4) at 380115
 Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
 Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
 Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
 Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
 Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
 Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
 Wolf Creek Generating Station, Unit 1 (1) at 532751
 Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators not added:

Generators converted to synchronous condensers:
 Bay Shore (2) at 238567

Generators not converted to synchronous condensers:
 Swing bus power: 786.6 MW

1 undervoltage buses, 134 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 44: year=2013, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

62 generators were removed.

111 generators were added.

Generators not removed:

Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005
Oconee Nuclear Station, Unit 3 (3) at 306007
Oconee Nuclear Station, Unit 2 (2) at 306006
Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040
Dresden Nuclear Power Station, Unit 2 (2) at 274658
Brunswick Steam Electric Plant, Unit 2 (1) at 304863
Brunswick Steam Electric Plant, Unit 1 (1) at 304862
North Anna Power Station, Unit 2 (2) at 315226
Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803
Indian Point Nuclear Generating, Unit 3 (1) at 147798
Hope Creek Generating Station, Unit 1 (1) at 200039
Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
Clinton Power Station, Unit 1 (1) at 349101
Fermi, Unit 2 (1) at 264854
Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
McGuire Nuclear Station, Unit 2 (2) at 306002
McGuire Nuclear Station, Unit 1 (1) at 306001
Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
LaSalle County Station, Unit 1 (1) at 274660
LaSalle County Station, Unit 2 (2) at 274661
Watts Bar Nuclear Plant, Unit 1 (1) at 4021
Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
Sequoyah Nuclear Plant, Unit 2 (1) at 4012
Catawba Nuclear Station, Unit 1 (1) at 306003
Catawba Nuclear Station, Unit 2 (2) at 306004
Limerick Generating Station, Unit 1 (1) at 213742
Limerick Generating Station, Unit 2 (1) at 200042
Byron Station, Unit 2 (2) at 274657
Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
Vogtle Electric Generating Plant, Unit 1 (1) at 383751
Braidwood Station, Unit 2 (2) at 274655
Sequoyah Nuclear Plant, Unit 1 (1) at 4011
Vogtle Electric Generating Plant, Unit 2 (2) at 383752
Salem Nuclear Generating Station, Unit 2 (1) at 200037
Wolf Creek Generating Station, Unit 1 (1) at 532751
Byron Station, Unit 1 (1) at 274656

Waterford Steam Electric Station, Unit 3 (1) at 336153
Salem Nuclear Generating Station, Unit 1 (1) at 200036
Braidwood Station, Unit 1 (1) at 274654
Susquehanna Steam Electric Station, Unit 2 (1) at 200038
Callaway Plant (1) at 344225
Perry Nuclear Power Plant, Unit 1 (1) at 239035
Grand Gulf Nuclear Station, Unit 1 (1) at 336821
Susquehanna Steam Electric Station, Unit 1 (1) at 208918

Generators removed:

Fort Calhoun Station, Unit 1 (1) at 645001
Point Beach Nuclear Plant, Unit 1 (1) at 699434
Point Beach Nuclear Plant, Unit 2 (2) at 699435
Kewaunee Power Station (1) at 699631
R.E. Ginna Nuclear Power Plant (1) at 149140
Duane Arnold Energy Center (1) at 629074
Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325
Nine Mile Point Nuclear Station, Unit 1 (1) at 136701
H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864
Cooper Nuclear Station (1) at 640009
Palisades Nuclear Plant (1) at 256338
Surry Nuclear Power Station, Unit 2 (2) at 315233
Three Mile Island Nuclear Station, Unit 1 (1) at 204659
Surry Nuclear Power Station, Unit 1 (1) at 315116
Arkansas Nuclear One, Unit 1 (1) at 337910
Oconee Nuclear Station, Unit 1 (1) at 306005
Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041
James A. FitzPatrick Nuclear Power Plant (1) at 147797
Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462
Dresden Nuclear Power Station, Unit 3 (3) at 274659
Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461
Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811
Quad Cities Nuclear Power Station, Unit 1 (1) at 274662
Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812
Beaver Valley Power Station, Unit 2 (2) at 253901
Beaver Valley Power Station, Unit 1 (1) at 253900
Quad Cities Nuclear Power Station, Unit 2 (2) at 274663
Davis-Besse Nuclear Power Station, Unit 1 (2) at 238670
Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865
North Anna Power Station, Unit 1 (1) at 315225
River Bend Station, Unit 1 (1) at 335831
Arkansas Nuclear One, Unit 2 (1) at 337911
Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440
Indian Point Nuclear Generating, Unit 2 (2) at 126651
Vogtle Electric Generating Plant, Unit 3 (3) at 383753
Vogtle Electric Generating Plant, Unit 4 (4) at 380115
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 771.8 MW

0 undervoltage buses, 141 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 45: year=2014, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

115 generators were removed.

119 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
Fort Calhoun Station, Unit 1 (1) at 645001
Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005
Nine Mile Point Nuclear Station, Unit 1 (1) at 136701
H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864
Oconee Nuclear Station, Unit 3 (3) at 306007
Oconee Nuclear Station, Unit 2 (2) at 306006
Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040
Dresden Nuclear Power Station, Unit 2 (2) at 274658
Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865
North Anna Power Station, Unit 1 (1) at 315225
Brunswick Steam Electric Plant, Unit 2 (1) at 304863
Brunswick Steam Electric Plant, Unit 1 (1) at 304862
North Anna Power Station, Unit 2 (2) at 315226
Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803
River Bend Station, Unit 1 (1) at 335831
Arkansas Nuclear One, Unit 2 (1) at 337911
Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440
Indian Point Nuclear Generating, Unit 2 (2) at 126651
Indian Point Nuclear Generating, Unit 3 (1) at 147798
Hope Creek Generating Station, Unit 1 (1) at 200039
Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
Clinton Power Station, Unit 1 (1) at 349101
Fermi, Unit 2 (1) at 264854
Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
McGuire Nuclear Station, Unit 2 (2) at 306002
McGuire Nuclear Station, Unit 1 (1) at 306001
Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
LaSalle County Station, Unit 1 (1) at 274660
LaSalle County Station, Unit 2 (2) at 274661

Watts Bar Nuclear Plant, Unit 1 (1) at 4021
Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
Sequoyah Nuclear Plant, Unit 2 (1) at 4012
Catawba Nuclear Station, Unit 1 (1) at 306003
Catawba Nuclear Station, Unit 2 (2) at 306004
Limerick Generating Station, Unit 1 (1) at 213742
Limerick Generating Station, Unit 2 (1) at 200042
Byron Station, Unit 2 (2) at 274657
Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
Vogtle Electric Generating Plant, Unit 1 (1) at 383751
Braidwood Station, Unit 2 (2) at 274655
Sequoyah Nuclear Plant, Unit 1 (1) at 4011
Vogtle Electric Generating Plant, Unit 2 (2) at 383752
Salem Nuclear Generating Station, Unit 2 (1) at 200037
Wolf Creek Generating Station, Unit 1 (1) at 532751
Byron Station, Unit 1 (1) at 274656
Waterford Steam Electric Station, Unit 3 (1) at 336153
Salem Nuclear Generating Station, Unit 1 (1) at 200036
Braidwood Station, Unit 1 (1) at 274654
Susquehanna Steam Electric Station, Unit 2 (1) at 200038
Callaway Plant (1) at 344225
Perry Nuclear Power Plant, Unit 1 (1) at 239035
Grand Gulf Nuclear Station, Unit 1 (1) at 336821
Susquehanna Steam Electric Station, Unit 1 (1) at 208918

Generators removed:

Point Beach Nuclear Plant, Unit 1 (1) at 699434
Point Beach Nuclear Plant, Unit 2 (2) at 699435
Kewaunee Power Station (1) at 699631
R.E. Ginna Nuclear Power Plant (1) at 149140
Duane Arnold Energy Center (1) at 629074
Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325
Cooper Nuclear Station (1) at 640009
Palisades Nuclear Plant (1) at 256338
Surry Nuclear Power Station, Unit 2 (2) at 315233
Three Mile Island Nuclear Station, Unit 1 (1) at 204659
Surry Nuclear Power Station, Unit 1 (1) at 315116
Arkansas Nuclear One, Unit 1 (1) at 337910
Oconee Nuclear Station, Unit 1 (1) at 306005
Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041
James A. FitzPatrick Nuclear Power Plant (1) at 147797
Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462
Dresden Nuclear Power Station, Unit 3 (3) at 274659
Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461
Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811
Quad Cities Nuclear Power Station, Unit 1 (1) at 274662
Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812
Beaver Valley Power Station, Unit 2 (2) at 253901
Beaver Valley Power Station, Unit 1 (1) at 253900
Quad Cities Nuclear Power Station, Unit 2 (2) at 274663
Davis-Besse Nuclear Power Station, Unit 1 (2) at 238670

Vogtle Electric Generating Plant, Unit 3 (3) at 383753
Vogtle Electric Generating Plant, Unit 4 (4) at 380115
Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:
Swing bus power: 783.9 MW

0 undervoltage buses, 162 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 46: year=2015, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

206 generators were removed.
137 generators were added.

Generators not removed:

Fort Calhoun Station, Unit 1 (1) at 645001
Point Beach Nuclear Plant, Unit 1 (1) at 699434
Point Beach Nuclear Plant, Unit 2 (2) at 699435
Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005
Kewaunee Power Station (1) at 699631
R.E. Ginna Nuclear Power Plant (1) at 149140
Duane Arnold Energy Center (1) at 629074
Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325
Nine Mile Point Nuclear Station, Unit 1 (1) at 136701
H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864
Cooper Nuclear Station (1) at 640009
Palisades Nuclear Plant (1) at 256338
Surry Nuclear Power Station, Unit 2 (2) at 315233
Three Mile Island Nuclear Station, Unit 1 (1) at 204659
Surry Nuclear Power Station, Unit 1 (1) at 315116
Arkansas Nuclear One, Unit 1 (1) at 337910
Oconee Nuclear Station, Unit 3 (3) at 306007
Oconee Nuclear Station, Unit 2 (2) at 306006
Oconee Nuclear Station, Unit 1 (1) at 306005
Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041
Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040
James A. FitzPatrick Nuclear Power Plant (1) at 147797
Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462
Dresden Nuclear Power Station, Unit 3 (3) at 274659

Dresden Nuclear Power Station, Unit 2 (2) at 274658
 Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461
 Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811
 Quad Cities Nuclear Power Station, Unit 1 (1) at 274662
 Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812
 Beaver Valley Power Station, Unit 2 (2) at 253901
 Beaver Valley Power Station, Unit 1 (1) at 253900
 Quad Cities Nuclear Power Station, Unit 2 (2) at 274663
 Davis-Besse Nuclear Power Station, Unit 1 (2) at 238670
 Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865
 North Anna Power Station, Unit 1 (1) at 315225
 Brunswick Steam Electric Plant, Unit 2 (1) at 304863
 Brunswick Steam Electric Plant, Unit 1 (1) at 304862
 North Anna Power Station, Unit 2 (2) at 315226
 Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803
 River Bend Station, Unit 1 (1) at 335831
 Arkansas Nuclear One, Unit 2 (1) at 337911
 Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440
 Indian Point Nuclear Generating, Unit 2 (2) at 126651
 Indian Point Nuclear Generating, Unit 3 (1) at 147798
 Hope Creek Generating Station, Unit 1 (1) at 200039
 Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
 Clinton Power Station, Unit 1 (1) at 349101
 Fermi, Unit 2 (1) at 264854
 Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
 McGuire Nuclear Station, Unit 2 (2) at 306002
 McGuire Nuclear Station, Unit 1 (1) at 306001
 Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
 Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
 LaSalle County Station, Unit 1 (1) at 274660
 LaSalle County Station, Unit 2 (2) at 274661
 Watts Bar Nuclear Plant, Unit 1 (1) at 4021
 Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
 Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
 Sequoyah Nuclear Plant, Unit 2 (1) at 4012
 Catawba Nuclear Station, Unit 1 (1) at 306003
 Catawba Nuclear Station, Unit 2 (2) at 306004
 Limerick Generating Station, Unit 1 (1) at 213742
 Limerick Generating Station, Unit 2 (1) at 200042
 Byron Station, Unit 2 (2) at 274657
 Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
 Vogtle Electric Generating Plant, Unit 1 (1) at 383751
 Braidwood Station, Unit 2 (2) at 274655
 Sequoyah Nuclear Plant, Unit 1 (1) at 4011
 Vogtle Electric Generating Plant, Unit 2 (2) at 383752
 Salem Nuclear Generating Station, Unit 2 (1) at 200037
 Wolf Creek Generating Station, Unit 1 (1) at 532751
 Byron Station, Unit 1 (1) at 274656
 Waterford Steam Electric Station, Unit 3 (1) at 336153
 Salem Nuclear Generating Station, Unit 1 (1) at 200036
 Braidwood Station, Unit 1 (1) at 274654
 Susquehanna Steam Electric Station, Unit 2 (1) at 200038

Callaway Plant (1) at 344225
Perry Nuclear Power Plant, Unit 1 (1) at 239035
Grand Gulf Nuclear Station, Unit 1 (1) at 336821
Susquehanna Steam Electric Station, Unit 1 (1) at 208918

Generators removed:

Vogtle Electric Generating Plant, Unit 3 (3) at 383753
Vogtle Electric Generating Plant, Unit 4 (4) at 380115
Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Eastlake (Z) at 238683
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:

Swing bus power: 2148.9 MW

4 undervoltage buses, 160 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 47: year=2016, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

220 generators were removed.

140 generators were added.

Generators not removed:

Eastlake (Z) at 238683
Welsh 2 (1) at 509405
Elk Mound (Z) at 680516
Fort Calhoun Station, Unit 1 (1) at 645001
Point Beach Nuclear Plant, Unit 1 (1) at 699434
Point Beach Nuclear Plant, Unit 2 (2) at 699435
Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005
Kewaunee Power Station (1) at 699631
R.E. Ginna Nuclear Power Plant (1) at 149140
Duane Arnold Energy Center (1) at 629074
Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325
Nine Mile Point Nuclear Station, Unit 1 (1) at 136701
H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864
Cooper Nuclear Station (1) at 640009

Palisades Nuclear Plant (1) at 256338
 Surry Nuclear Power Station, Unit 2 (2) at 315233
 Three Mile Island Nuclear Station, Unit 1 (1) at 204659
 Surry Nuclear Power Station, Unit 1 (1) at 315116
 Arkansas Nuclear One, Unit 1 (1) at 337910
 Oconee Nuclear Station, Unit 3 (3) at 306007
 Oconee Nuclear Station, Unit 2 (2) at 306006
 Oconee Nuclear Station, Unit 1 (1) at 306005
 Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041
 Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040
 James A. FitzPatrick Nuclear Power Plant (1) at 147797
 Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462
 Dresden Nuclear Power Station, Unit 3 (3) at 274659
 Dresden Nuclear Power Station, Unit 2 (2) at 274658
 Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461
 Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811
 Quad Cities Nuclear Power Station, Unit 1 (1) at 274662
 Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812
 Beaver Valley Power Station, Unit 2 (2) at 253901
 Beaver Valley Power Station, Unit 1 (1) at 253900
 Quad Cities Nuclear Power Station, Unit 2 (2) at 274663
 Davis-Besse Nuclear Power Station, Unit 1 (2) at 238670
 Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865
 North Anna Power Station, Unit 1 (1) at 315225
 Brunswick Steam Electric Plant, Unit 2 (1) at 304863
 Brunswick Steam Electric Plant, Unit 1 (1) at 304862
 North Anna Power Station, Unit 2 (2) at 315226
 Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803
 River Bend Station, Unit 1 (1) at 335831
 Arkansas Nuclear One, Unit 2 (1) at 337911
 Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440
 Indian Point Nuclear Generating, Unit 2 (2) at 126651
 Indian Point Nuclear Generating, Unit 3 (1) at 147798
 Hope Creek Generating Station, Unit 1 (1) at 200039
 Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
 Clinton Power Station, Unit 1 (1) at 349101
 Fermi, Unit 2 (1) at 264854
 Vogtle Electric Generating Plant, Unit 3 (3) at 383753
 Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
 McGuire Nuclear Station, Unit 2 (2) at 306002
 McGuire Nuclear Station, Unit 1 (1) at 306001
 Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
 Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
 Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
 LaSalle County Station, Unit 1 (1) at 274660
 LaSalle County Station, Unit 2 (2) at 274661
 Watts Bar Nuclear Plant, Unit 1 (1) at 4021
 Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
 Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
 Sequoyah Nuclear Plant, Unit 2 (1) at 4012
 Catawba Nuclear Station, Unit 1 (1) at 306003
 Catawba Nuclear Station, Unit 2 (2) at 306004

Limerick Generating Station, Unit 1 (1) at 213742
 Limerick Generating Station, Unit 2 (1) at 200042
 Byron Station, Unit 2 (2) at 274657
 Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
 Vogtle Electric Generating Plant, Unit 1 (1) at 383751
 Braidwood Station, Unit 2 (2) at 274655
 Sequoyah Nuclear Plant, Unit 1 (1) at 4011
 Vogtle Electric Generating Plant, Unit 2 (2) at 383752
 Salem Nuclear Generating Station, Unit 2 (1) at 200037
 Wolf Creek Generating Station, Unit 1 (1) at 532751
 Byron Station, Unit 1 (1) at 274656
 Waterford Steam Electric Station, Unit 3 (1) at 336153
 Salem Nuclear Generating Station, Unit 1 (1) at 200036
 Braidwood Station, Unit 1 (1) at 274654
 Susquehanna Steam Electric Station, Unit 2 (1) at 200038
 Callaway Plant (1) at 344225
 Perry Nuclear Power Plant, Unit 1 (1) at 239035
 Grand Gulf Nuclear Station, Unit 1 (1) at 336821
 Susquehanna Steam Electric Station, Unit 1 (1) at 208918
 Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators removed:

Vogtle Electric Generating Plant, Unit 4 (4) at 380115

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 10482.7 MW

6 undervoltage buses, 135 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
 BUCKNG12 (213451)-BUCKNGHM (213453) [1]
 W.CALD G (216923)-KNGLND G (217084) [1]
 GRACETON (220964)-BAGLEY (221000) [1]
 05SPORN (242528)-06KYGER (248005) [1]
 05ELIMEQ (242909)-05E LIMA (242989) [1]
 05MARQUI (242938)-06DOE530 (248003) [1]
 05MARQUI (242938)-06K-M533 (248012) [1]
 05MUSKNG (242940)-05WATERF (242947) [1]
 06DOE530 (248003)-06KYGER (248005) [1]
 06DOE530 (248003)-06KYGER (248005) [2]
 06DOE533 (248004)-06KYGER (248005) [1]
 06KYGER (248005)-06K-M533 (248012) [2]
 CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 48: year=2017, gensRemoved=1, gas=1, wind=1, synCon=0,
nukesRemoved=1, addNukes=0

221 generators were removed.

141 generators were added.

Generators not removed:

Eastlake (Z) at 238683

Fort Calhoun Station, Unit 1 (1) at 645001

Point Beach Nuclear Plant, Unit 1 (1) at 699434

Point Beach Nuclear Plant, Unit 2 (2) at 699435

Monticello Nuclear Generating Plant, Unit 1 (Z) at 600005

Kewaunee Power Station (1) at 699631

R.E. Ginna Nuclear Power Plant (1) at 149140

Duane Arnold Energy Center (1) at 629074

Oyster Creek Nuclear Generating Station, Unit 1 (1) at 206325

Nine Mile Point Nuclear Station, Unit 1 (1) at 136701

H. B. Robinson Steam Electric Plant, Unit 2 (1) at 304864

Cooper Nuclear Station (1) at 640009

Palisades Nuclear Plant (1) at 256338

Surry Nuclear Power Station, Unit 2 (2) at 315233

Three Mile Island Nuclear Station, Unit 1 (1) at 204659

Surry Nuclear Power Station, Unit 1 (1) at 315116

Arkansas Nuclear One, Unit 1 (1) at 337910

Oconee Nuclear Station, Unit 3 (3) at 306007

Oconee Nuclear Station, Unit 2 (2) at 306006

Oconee Nuclear Station, Unit 1 (1) at 306005

Calvert Cliffs Nuclear Power Plant, Unit 2 (1) at 200041

Calvert Cliffs Nuclear Power Plant, Unit 1 (1) at 200040

James A. FitzPatrick Nuclear Power Plant (1) at 147797

Joseph M. Farley Nuclear Plant, Unit 2 (2) at 386462

Dresden Nuclear Power Station, Unit 3 (3) at 274659

Dresden Nuclear Power Station, Unit 2 (2) at 274658

Joseph M. Farley Nuclear Plant, Unit 1 (1) at 386461

Edwin I. Hatch Nuclear Plant, Unit 1 (1) at 383811

Quad Cities Nuclear Power Station, Unit 1 (1) at 274662

Edwin I. Hatch Nuclear Plant, Unit 2 (2) at 383812

Beaver Valley Power Station, Unit 2 (2) at 253901

Beaver Valley Power Station, Unit 1 (1) at 253900

Quad Cities Nuclear Power Station, Unit 2 (2) at 274663

Davis-Besse Nuclear Power Station, Unit 1 (Z) at 238670

Shearon Harris Nuclear Power Plant, Unit 1 (1) at 304865

North Anna Power Station, Unit 1 (1) at 315225

Brunswick Steam Electric Plant, Unit 2 (1) at 304863

Brunswick Steam Electric Plant, Unit 1 (1) at 304862

North Anna Power Station, Unit 2 (2) at 315226

Virgil C. Summer Nuclear Station, Unit 1 (1) at 370803

River Bend Station, Unit 1 (1) at 335831

Arkansas Nuclear One, Unit 2 (1) at 337911

Donald C. Cook Nuclear Power Plant, Unit 1 (1) at 243440

Indian Point Nuclear Generating, Unit 2 (2) at 126651

Indian Point Nuclear Generating, Unit 3 (1) at 147798

Hope Creek Generating Station, Unit 1 (1) at 200039

Donald C. Cook Nuclear Power Plant, Unit 2 (2) at 243441
 Clinton Power Station, Unit 1 (1) at 349101
 Fermi, Unit 2 (1) at 264854
 Vogtle Electric Generating Plant, Unit 3 (3) at 383753
 Browns Ferry Nuclear Plant, Unit 3 (1) at 4003
 McGuire Nuclear Station, Unit 2 (2) at 306002
 McGuire Nuclear Station, Unit 1 (1) at 306001
 Browns Ferry Nuclear Plant, Unit 2 (1) at 4002
 Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835
 Browns Ferry Nuclear Plant, Unit 1 (1) at 4001
 LaSalle County Station, Unit 1 (1) at 274660
 LaSalle County Station, Unit 2 (2) at 274661
 Watts Bar Nuclear Plant, Unit 1 (1) at 4021
 Peach Bottom Atomic Power Station, Unit 2 (1) at 200034
 Peach Bottom Atomic Power Station, Unit 3 (1) at 200035
 Sequoyah Nuclear Plant, Unit 2 (1) at 4012
 Catawba Nuclear Station, Unit 1 (1) at 306003
 Catawba Nuclear Station, Unit 2 (2) at 306004
 Limerick Generating Station, Unit 1 (1) at 213742
 Limerick Generating Station, Unit 2 (1) at 200042
 Byron Station, Unit 2 (2) at 274657
 Nine Mile Point Nuclear Station, Unit 2 (2) at 136700
 Vogtle Electric Generating Plant, Unit 1 (1) at 383751
 Braidwood Station, Unit 2 (2) at 274655
 Sequoyah Nuclear Plant, Unit 1 (1) at 4011
 Vogtle Electric Generating Plant, Unit 2 (2) at 383752
 Salem Nuclear Generating Station, Unit 2 (1) at 200037
 Wolf Creek Generating Station, Unit 1 (1) at 532751
 Byron Station, Unit 1 (1) at 274656
 Waterford Steam Electric Station, Unit 3 (1) at 336153
 Salem Nuclear Generating Station, Unit 1 (1) at 200036
 Braidwood Station, Unit 1 (1) at 274654
 Susquehanna Steam Electric Station, Unit 2 (1) at 200038
 Callaway Plant (1) at 344225
 Perry Nuclear Power Plant, Unit 1 (1) at 239035
 Grand Gulf Nuclear Station, Unit 1 (1) at 336821
 Susquehanna Steam Electric Station, Unit 1 (1) at 208918
 Watts Bar Nuclear Plant, Unit 2 (2) at 4022

Generators removed:

Vogtle Electric Generating Plant, Unit 4 (4) at 380115

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752

Bay Shore (Z) at 238567

Generators not converted to synchronous condensers:

Swing bus power: 11615.4 MW

12 undervoltage buses, 125 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05AMOS (242522)-05SPORN (242528) [1]
05SPORN (242528)-05WATERF (242947) [1]
05SPORN (242528)-06KYGER (248005) [1]
05TRISTA (242529)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 49: year=2015, gensRemoved=1, gas=0, wind=0, synCon=1,
nukesRemoved=0, addNukes=0

172 generators were removed.

0 generators were added.

Generators not removed:

Elk Mound (Z) at 680516

Vogtle Electric Generating Plant, Unit 3 (3) at 383753

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234

Cape Fear (1) at 304880

Cape Fear (1) at 304881

Avon Lake (Z) at 238555

Bay Shore (Z) at 238567

Conesville (3) at 243654

Eastlake (Z) at 238683

Lake Shore (18) at 699969

Muskingum River (1) at 243045

Muskingum River (2) at 242940

Picway (1) at 699970

Armstrong (1) at 235567

Armstrong (1) at 235569

Elrama Power Plant (1) at 699971

Elrama Power Plant (2) at 699972

Elrama Power Plant (3) at 699973

Elrama Power Plant (4) at 254010

Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 699974
Potomac River (4) at 699975
Potomac River (5) at 699976
Yorktown (1) at 315090
Yorktown (2) at 315091
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (3H) at 243196
Willow Island (1) at 235578
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not converted to synchronous condensers:
Swing bus power: 954.2 MW

0 undervoltage buses, 150 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 50: year=2012, gensRemoved=1, gas=0, wind=0, synCon=1,
nukesRemoved=0, addNukes=0

17 generators were removed.
0 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:
Bay Shore (Z) at 238567
Elrama Power Plant (1) at 699969
Elrama Power Plant (2) at 699970
Elrama Power Plant (3) at 699971
Elrama Power Plant (4) at 254010
Albright Power Station 3 (1) at 235566
Philip Sporn (5) at 242808
Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:
Swing bus power: 804.0 MW

0 undervoltage buses, 178 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 51: year=2013, gensRemoved=1, gas=0, wind=0, synCon=1,
nukesRemoved=0, addNukes=0

17 generators were removed.

0 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Elrama Power Plant (1) at 699969
Elrama Power Plant (2) at 699970
Elrama Power Plant (3) at 699971
Elrama Power Plant (4) at 254010
Albright Power Station 3 (1) at 235566
Philip Sporn (5) at 242808
Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:

Swing bus power: 818.4 MW

0 undervoltage buses, 172 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 52: year=2014, gensRemoved=1, gas=0, wind=0, synCon=1,
nukesRemoved=0, addNukes=0

72 generators were removed.

0 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Bay Shore (Z) at 238567
Elrama Power Plant (1) at 699969
Elrama Power Plant (2) at 699970
Elrama Power Plant (3) at 699971
Elrama Power Plant (4) at 254010

Sunbury Generation LP (1) at 209017
John Sevier (1) at 699972
Albright Power Station 3 (1) at 235566
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807

Generators not converted to synchronous condensers:
Swing bus power: 937.8 MW

0 undervoltage buses, 157 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 53: year=2016, gensRemoved=1, gas=0, wind=0, synCon=1,
nukesRemoved=0, addNukes=0

172 generators were removed.
0 generators were added.
Generators not removed:
Harllee Branch (2) at 383692
State Line3 (H) at 274679
Wabash River (6) at 251893
Cane Run (6) at 324012
J.R. Whiting (All Units) (Z) at 256368
WC Beckjord (6) at 251938
Welsh 2 (1) at 509405
Valley (Z) at 699506

Generators not added:

Generators converted to synchronous condensers:
Harllee Branch (1) at 383691
Marion (4) at 350234
State Line4 (H) at 274680
State Line3 (L) at 274679
Tanners Creek (4) at 243233
Cane Run (5) at 324011
Meramec (H) at 345156
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Avon Lake (Z) at 238555
Bay Shore (Z) at 238567
Conesville (3) at 243654
Eastlake (Z) at 238683

Muskingum River (1) at 243045
 Muskingum River (2) at 242940
 Picway (1) at 699969
 WC Beckjord (5) at 251937
 Armstrong (1) at 235567
 Armstrong (1) at 235569
 Elrama Power Plant (1) at 699970
 Elrama Power Plant (2) at 699971
 Elrama Power Plant (3) at 699972
 Elrama Power Plant (4) at 254010
 Portland (Z) at 204651
 Portland (Z) at 204661
 Sunbury Generation LP (1) at 209017
 John Sevier (1) at 699973
 Chesapeake 3 (3) at 315096
 Chesapeake 4 (4) at 315097
 Glen Lyn (6) at 242651
 Glen Lyn (7) at 242651
 Potomac River (3) at 699974
 Potomac River (4) at 699975
 Potomac River (5) at 699976
 Yorktown (1) at 315090
 Yorktown (2) at 315091
 Albright Power Station 3 (1) at 235566
 Kammer (1H) at 243192
 Kammer (3H) at 243196
 Willow Island (1) at 235578
 Meramec (L) at 345156
 Muskingum River (C) at 243045
 Muskingum River (D) at 242940

Generators not converted to synchronous condensers:
 Swing bus power: 8159.7 MW

0 undervoltage buses, 126 overvoltage buses.

Overloaded transmission lines:
 BUCKNG12 (213451)-BUCKNGHM (213453) [1]
 W.CALD G (216923)-KNGLND G (217084) [1]
 05SPORN (242528)-06KYGER (248005) [1]
 05MARQUI (242938)-06K-M533 (248012) [1]
 05MUSKNG (242940)-05WATERF (242947) [1]
 06KYGER (248005)-06K-M533 (248012) [2]
 CHENO;P1 (270706)-CHENO;P2 (270707) [1]
 ZION ; R (270941)-PLS PR2 (698849) [1]
 6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 54: year=2017, gensRemoved=1, gas=0, wind=0, synCon=1,
 nukesRemoved=0, addNukes=0

144 generators were removed.
 0 generators were added.

Generators not removed:
Meramec (2) at 345140
Meramec (H) at 345148
Meramec (H) at 345156
Sibley (1) at 541153
Sibley (2) at 541152
Riverbend (7) at 306040
Glen Gardner (Z) at 206331
Glen Gardner (Z) at 206333
Avon Lake (Z) at 238554
Avon Lake (Z) at 238555
Conesville (3) at 243654
Eastlake (Z) at 238683
Miami Fort (6) at 251949
Muskingum River (2) at 242940
Muskingum River (3) at 243045
Muskingum River (4) at 242940
WC Beckjord (1) at 251939
WC Beckjord (2) at 251934
WC Beckjord (3) at 251935
WC Beckjord (4) at 251936
WC Beckjord (5) at 251937
WC Beckjord (6) at 251938
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Shawville 1 (Z) at 200715
Shawville 2 (2) at 200722
Shawville 3 (3) at 200665
Shawville 4 (4) at 200666
Sunbury Generation LP (1) at 209017
Canadys Steam (1) at 370812
Welsh 2 (1) at 509405
Chesapeake 3 (3) at 315096
Chesapeake 1 (1) at 315094
Chesapeake 2 (2) at 315095
Chesapeake 4 (4) at 315097
Clinch River (3H) at 242903
Clinch River (3L) at 242904
Glen Lyn (5) at 242650
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Yorktown (1) at 315090
Yorktown (2) at 315091
Valley (Z) at 699506
Albright Power Station 1 (1) at 235564
Albright Power Station 2 (1) at 235565
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (1L) at 243193

Kammer (3H) at 243196
Kammer (3L) at 243197
Kammer (2H) at 243194
Kammer (2L) at 243195
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Willow Island (1) at 235577
Willow Island (1) at 235578
Meramec (L) at 345148
Meramec (L) at 345156
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807
Muskingum River (A) at 243045
Muskingum River (B) at 242940
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Cape Fear (1) at 304880
Bay Shore (Z) at 238567
Muskingum River (1) at 243045
Picway (1) at 699969
Elrama Power Plant (1) at 699970
Elrama Power Plant (2) at 699971
Elrama Power Plant (3) at 699972
John Sevier (1) at 699973
Potomac River (3) at 699974
Potomac River (4) at 699975
Potomac River (5) at 699976

Generators not converted to synchronous condensers:

Cape Fear (1) at 304881
Conesville (3) at 243654
Muskingum River (2) at 242940
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
Chesapeake 3 (3) at 315096
Chesapeake 1 (1) at 315094
Chesapeake 2 (2) at 315095
Chesapeake 4 (4) at 315097
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Yorktown (1) at 315090
Yorktown (2) at 315091
Albright Power Station 3 (1) at 235566

Kammer (1H) at 243192
Kammer (3H) at 243196
Willow Island (1) at 235578
Muskingum River (C) at 243045
Muskingum River (D) at 242940
Swing bus power: 1446.4 MW

2 undervoltage buses, 125 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 55: year=2012, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

17 generators were removed.
95 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Elrama Power Plant (1) at 700032
Elrama Power Plant (2) at 700033
Elrama Power Plant (3) at 700034
Elrama Power Plant (4) at 254010
Albright Power Station 3 (1) at 235566
Philip Sporn (5) at 242808
Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:
Swing bus power: 252.0 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 56: year=2013, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

17 generators were removed.
111 generators were added.

Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Elrama Power Plant (1) at 700040
Elrama Power Plant (2) at 700041
Elrama Power Plant (3) at 700042
Elrama Power Plant (4) at 254010
Albright Power Station 3 (1) at 235566
Philip Sporn (5) at 242808
Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:

Swing bus power: 983.9 MW

0 undervoltage buses, 186 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 57: year=2014, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

70 generators were removed.

119 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Bay Shore (Z) at 238567
Elrama Power Plant (1) at 700047
Elrama Power Plant (2) at 700048
Elrama Power Plant (3) at 700049
Elrama Power Plant (4) at 254010
New Castle (5) at 700050
New Castle (2A) at 700051
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700052
Albright Power Station 3 (1) at 235566
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807

Philip Sporn (4) at 242807

Generators not converted to synchronous condensers:
Swing bus power: 983.6 MW

0 undervoltage buses, 170 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 58: year=2015, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

168 generators were removed.
137 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Ashtubula (5) at 700060
Avon Lake (Z) at 238555
Bay Shore (Z) at 238567
Conesville (3) at 243654
Eastlake (Z) at 238683
Lake Shore (18) at 700061
Muskingum River (1) at 243045
Muskingum River (2) at 242940
Picway (1) at 700062
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (1) at 700063
Elrama Power Plant (2) at 700064
Elrama Power Plant (3) at 700065
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700066
Clinch River (3H) at 242903
Clinch River (3L) at 242904
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 700067
Potomac River (4) at 700068
Potomac River (5) at 700069
Yorktown (1) at 315090

Yorktown (2) at 315091
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (3H) at 243196
Willow Island (1) at 235578
Muskingum River (C) at 243045
Muskingum River (D) at 242940
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:
Swing bus power: 727.6 MW

0 undervoltage buses, 159 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
RAPHAEL (220980)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]

CASE 59: year=2016, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

183 generators were removed.
140 generators were added.

Generators not removed:
Eastlake (Z) at 238683
Welsh 2 (1) at 509405
Elk Mound (Z) at 680516

Generators not added:

Generators converted to synchronous condensers:
Scholz (2) at 386752
Marion (4) at 350234
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Bay Shore (Z) at 238567
Conesville (3) at 243654
Muskingum River (1) at 243045
Muskingum River (2) at 242940
Picway (1) at 700063
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (1) at 700064
Elrama Power Plant (2) at 700065
Elrama Power Plant (3) at 700066

Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700067
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 700068
Potomac River (4) at 700069
Potomac River (5) at 700070
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (3H) at 243196
Kanawha (1H) at 242895
Kanawha (2L) at 242898
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not converted to synchronous condensers:
Swing bus power: 10459.5 MW

2 undervoltage buses, 135 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 60: year=2017, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=0

185 generators were removed.
141 generators were added.
Generators not removed:

Eastlake (Z) at 238683

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752
Marion (4) at 350234
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Bay Shore (Z) at 238567
Conesville (3) at 243654
Muskingum River (1) at 243045
Muskingum River (2) at 242940
Picway (1) at 700063
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (1) at 700064
Elrama Power Plant (2) at 700065
Elrama Power Plant (3) at 700066
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 700067
Potomac River (4) at 700068
Potomac River (5) at 700069
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (3H) at 243196
Kanawha (1H) at 242895
Kanawha (2L) at 242898
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not converted to synchronous condensers:

Swing bus power: 11571.9 MW

3 undervoltage buses, 125 overvoltage buses.

Overloaded transmission lines:

CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]

GRACETON (220964)-BAGLEY (221000) [1]
 RAPHAEL (220980)-BAGLEY (221000) [1]
 05AMOS (242522)-05SPORN (242528) [1]
 05SPORN (242528)-05WATERF (242947) [1]
 05SPORN (242528)-06KYGER (248005) [1]
 05TRISTA (242529)-06KYGER (248005) [1]
 05ELIMEQ (242909)-05E LIMA (242989) [1]
 05MARQUI (242938)-06DOE530 (248003) [1]
 05MARQUI (242938)-06K-M533 (248012) [1]
 05MUSKNG (242940)-05WATERF (242947) [1]
 06DOE530 (248003)-06KYGER (248005) [1]
 06DOE530 (248003)-06KYGER (248005) [2]
 06DOE533 (248004)-06KYGER (248005) [1]
 06KYGER (248005)-06K-M533 (248012) [2]
 CHENO;P1 (270706)-CHENO;P2 (270707) [1]
 6RICHMON230T (304378)-RICH CC2 (304978) [1]

CASE 61: year=2012, gensRemoved=1, gas=1, wind=1, synCon=1,
 nukesRemoved=0, addNukes=1

17 generators were removed.
 95 generators were added.
 Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
 Elrama Power Plant (1) at 700032
 Elrama Power Plant (2) at 700033
 Elrama Power Plant (3) at 700034
 Elrama Power Plant (4) at 254010
 Albright Power Station 3 (1) at 235566
 Philip Sporn (5) at 242808
 Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:
 Swing bus power: 252.0 MW

0 undervoltage buses, 194 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
 W.CALD G (216923)-KNGLND G (217084) [1]
 CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 62: year=2013, gensRemoved=1, gas=1, wind=1, synCon=1,
 nukesRemoved=0, addNukes=1

17 generators were removed.
 111 generators were added.
 Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Bay Shore (Z) at 238567
Elrama Power Plant (1) at 700040
Elrama Power Plant (2) at 700041
Elrama Power Plant (3) at 700042
Elrama Power Plant (4) at 254010
Albright Power Station 3 (1) at 235566
Philip Sporn (5) at 242808
Philip Sporn (6) at 242808

Generators not converted to synchronous condensers:

Swing bus power: 983.9 MW

0 undervoltage buses, 186 overvoltage buses.

Overloaded transmission lines:

BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 63: year=2014, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=1

70 generators were removed.

119 generators were added.

Generators not removed:

Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Bay Shore (Z) at 238567
Elrama Power Plant (1) at 700047
Elrama Power Plant (2) at 700048
Elrama Power Plant (3) at 700049
Elrama Power Plant (4) at 254010
New Castle (5) at 700050
New Castle (2A) at 700051
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700052
Albright Power Station 3 (1) at 235566
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807

Generators not converted to synchronous condensers:
Swing bus power: 983.6 MW

0 undervoltage buses, 170 overvoltage buses.

Overloaded transmission lines:
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 64: year=2015, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=1

170 generators were removed.
138 generators were added.
Generators not removed:

Generators not added:

Generators converted to synchronous condensers:

Marion (4) at 350234
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Ashtubula (5) at 700060
Avon Lake (Z) at 238555
Bay Shore (Z) at 238567
Conesville (3) at 243654
Eastlake (Z) at 238683
Lake Shore (18) at 700061
Muskingum River (1) at 243045
Muskingum River (2) at 242940
Picway (1) at 700062
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (1) at 700063
Elrama Power Plant (2) at 700064
Elrama Power Plant (3) at 700065
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700066
Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 700067
Potomac River (4) at 700068
Potomac River (5) at 700069
Yorktown (1) at 315090
Yorktown (2) at 315091
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192

Kammer (3H) at 243196
Willow Island (1) at 235578
Muskingum River (C) at 243045
Muskingum River (D) at 242940
Virgil C. Summer Nuclear Station, Unit 2 (2) at 370835

Generators not converted to synchronous condensers:
Swing bus power: 967.7 MW

0 undervoltage buses, 159 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
CNASTONE (200004)-01KEMPTOWN (235632) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
ZION ; R (270941)-PLS PR2 (698849) [1]

CASE 65: year=2016, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=1

183 generators were removed.
143 generators were added.
Generators not removed:
Eastlake (Z) at 238683
Welsh 2 (1) at 509405

Generators not added:

Generators converted to synchronous condensers:
Scholz (2) at 386752
Marion (4) at 350234
Cape Fear (1) at 304880
Cape Fear (1) at 304881
Bay Shore (Z) at 238567
Conesville (3) at 243654
Muskingum River (1) at 243045
Muskingum River (2) at 242940
Picway (1) at 700063
Armstrong (1) at 235567
Armstrong (1) at 235569
Elrama Power Plant (1) at 700064
Elrama Power Plant (2) at 700065
Elrama Power Plant (3) at 700066
Elrama Power Plant (4) at 254010
Portland (Z) at 204651
Portland (Z) at 204661
Sunbury Generation LP (1) at 209017
John Sevier (1) at 700067

Glen Lyn (6) at 242651
Glen Lyn (7) at 242651
Potomac River (3) at 700068
Potomac River (4) at 700069
Potomac River (5) at 700070
Albright Power Station 3 (1) at 235566
Kammer (1H) at 243192
Kammer (3H) at 243196
Kanawha (1H) at 242895
Kanawha (2L) at 242898
Philip Sporn (1) at 242807
Philip Sporn (2) at 242807
Philip Sporn (5) at 242808
Willow Island (1) at 235578
Philip Sporn (6) at 242808
Philip Sporn (3) at 242807
Philip Sporn (4) at 242807
Muskingum River (C) at 243045
Muskingum River (D) at 242940

Generators not converted to synchronous condensers:
Swing bus power: 10541.0 MW

2 undervoltage buses, 135 overvoltage buses.

Overloaded transmission lines:
CNASTONE (200004)-PEACHBTM (200013) [1]
BUCKNG12 (213451)-BUCKNGHM (213453) [1]
W.CALD G (216923)-KNGLND G (217084) [1]
GRACETON (220964)-BAGLEY (221000) [1]
05SPORN (242528)-06KYGER (248005) [1]
05ELIMEQ (242909)-05E LIMA (242989) [1]
05MARQUI (242938)-06DOE530 (248003) [1]
05MARQUI (242938)-06K-M533 (248012) [1]
05MUSKNG (242940)-05WATERF (242947) [1]
06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]

CASE 66: year=2017, gensRemoved=1, gas=1, wind=1, synCon=1,
nukesRemoved=0, addNukes=1

186 generators were removed.
145 generators were added.
Generators not removed:
Eastlake (Z) at 238683

Generators not added:

Generators converted to synchronous condensers:

Scholz (2) at 386752
 Marion (4) at 350234
 Cape Fear (1) at 304880
 Cape Fear (1) at 304881
 Bay Shore (Z) at 238567
 Conesville (3) at 243654
 Muskingum River (1) at 243045
 Muskingum River (2) at 242940
 Picway (1) at 700064
 Armstrong (1) at 235567
 Armstrong (1) at 235569
 Elrama Power Plant (1) at 700065
 Elrama Power Plant (2) at 700066
 Elrama Power Plant (3) at 700067
 Elrama Power Plant (4) at 254010
 Portland (Z) at 204651
 Portland (Z) at 204661
 Sunbury Generation LP (1) at 209017
 John Sevier (1) at 700068
 Glen Lyn (6) at 242651
 Glen Lyn (7) at 242651
 Potomac River (3) at 700069
 Potomac River (4) at 700070
 Potomac River (5) at 700071
 Albright Power Station 3 (1) at 235566
 Kammer (1H) at 243192
 Kammer (3H) at 243196
 Philip Sporn (1) at 242807
 Philip Sporn (2) at 242807
 Philip Sporn (5) at 242808
 Willow Island (1) at 235578
 Philip Sporn (6) at 242808
 Philip Sporn (3) at 242807
 Philip Sporn (4) at 242807
 Muskingum River (C) at 243045
 Muskingum River (D) at 242940

Generators not converted to synchronous condensers:
 Swing bus power: 10356.8 MW

2 undervoltage buses, 129 overvoltage buses.

Overloaded transmission lines:
 CNASTONE (200004)-PEACHBTM (200013) [1]
 BUCKNG12 (213451)-BUCKNGHM (213453) [1]
 W.CALD G (216923)-KNGLND G (217084) [1]
 GRACETON (220964)-BAGLEY (221000) [1]
 05SPORN (242528)-06KYGER (248005) [1]
 05ELIMEQ (242909)-05E LIMA (242989) [1]
 05MARQUI (242938)-06DOE530 (248003) [1]
 05MARQUI (242938)-06K-M533 (248012) [1]
 05MUSKNG (242940)-05WATERF (242947) [1]

06DOE530 (248003)-06KYGER (248005) [1]
06DOE530 (248003)-06KYGER (248005) [2]
06DOE533 (248004)-06KYGER (248005) [1]
06KYGER (248005)-06K-M533 (248012) [2]
CHENO;P1 (270706)-CHENO;P2 (270707) [1]
6RICHMON230T (304378)-RICH CC2 (304978) [1]