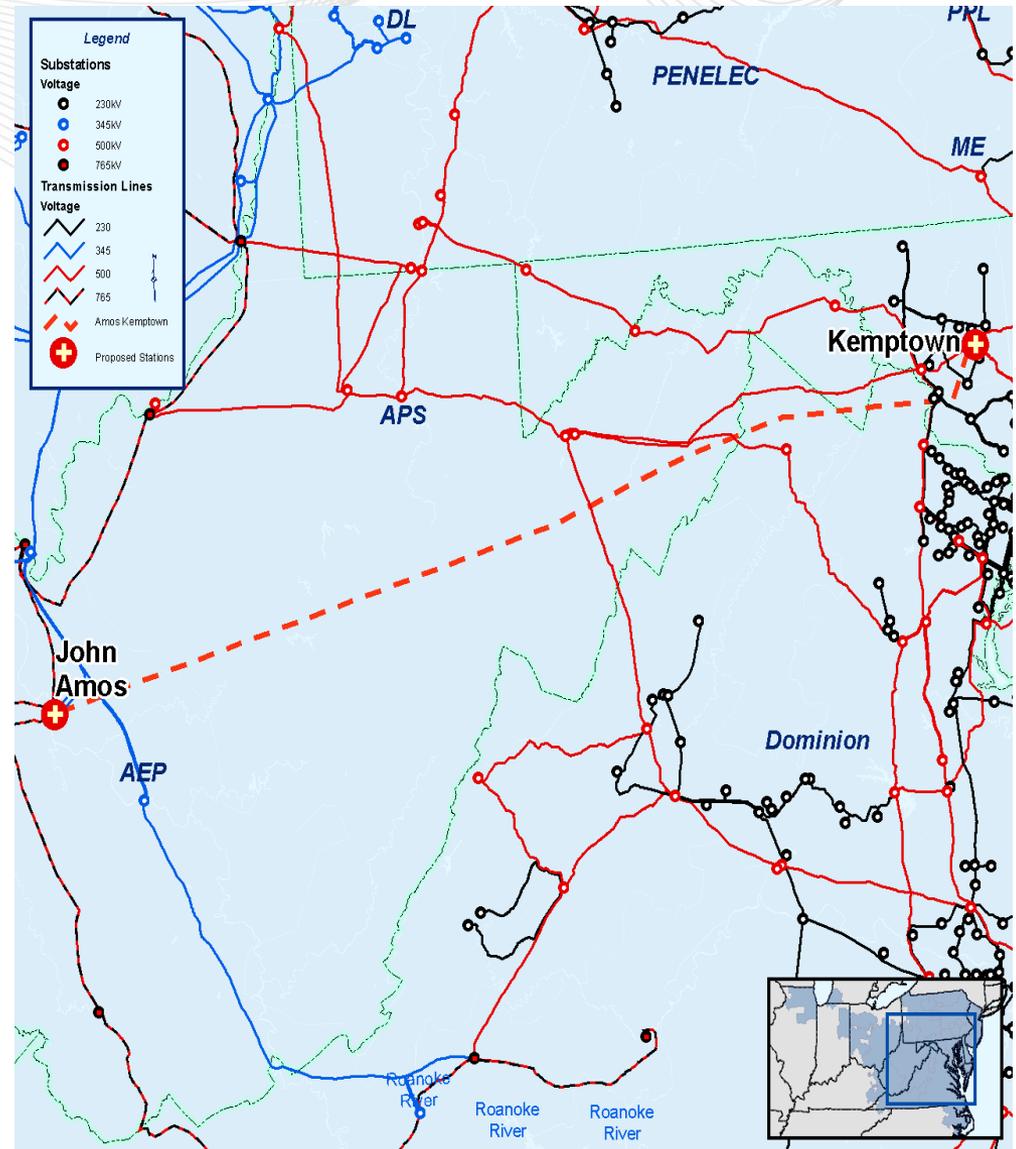


# Transmission Expansion Advisory Committee

June 9, 2009

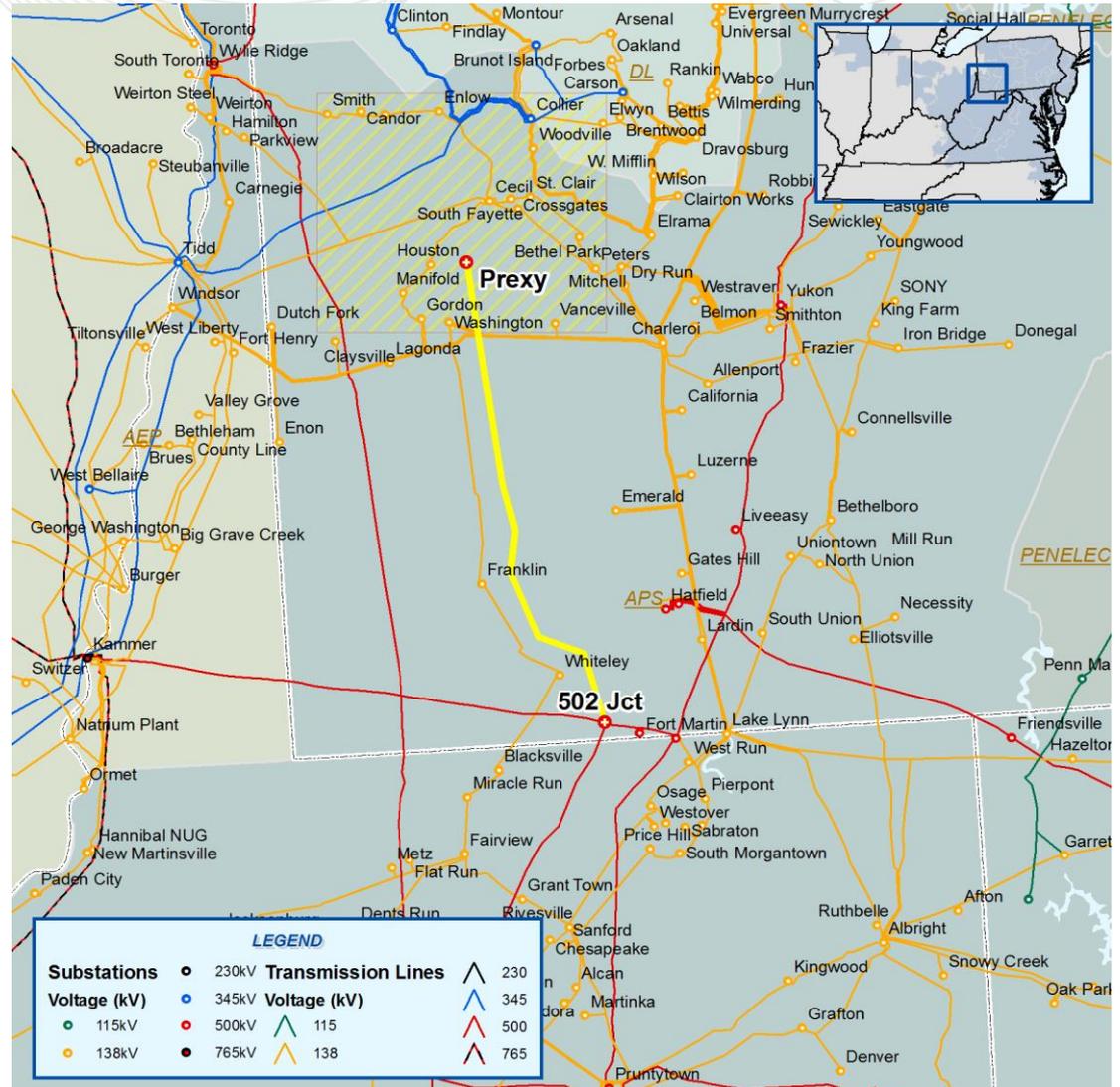
- PJM recently commissioned a conceptual study to use HVDC technology for the PATH project.
- Study is evaluating the use of HVDC technology for the nearest functionally equivalent configuration to the 765 kV AC configuration.
- Overhead and underground HVDC alternatives are being evaluated.
  - HVDC overhead from Amos-Welton Spring-Kemptown
  - Underground HVDC from Welton Spring to Kemptown
- Study is expected to be completed in the third quarter of 2009.
- Results of the study will be reviewed with the TEAC



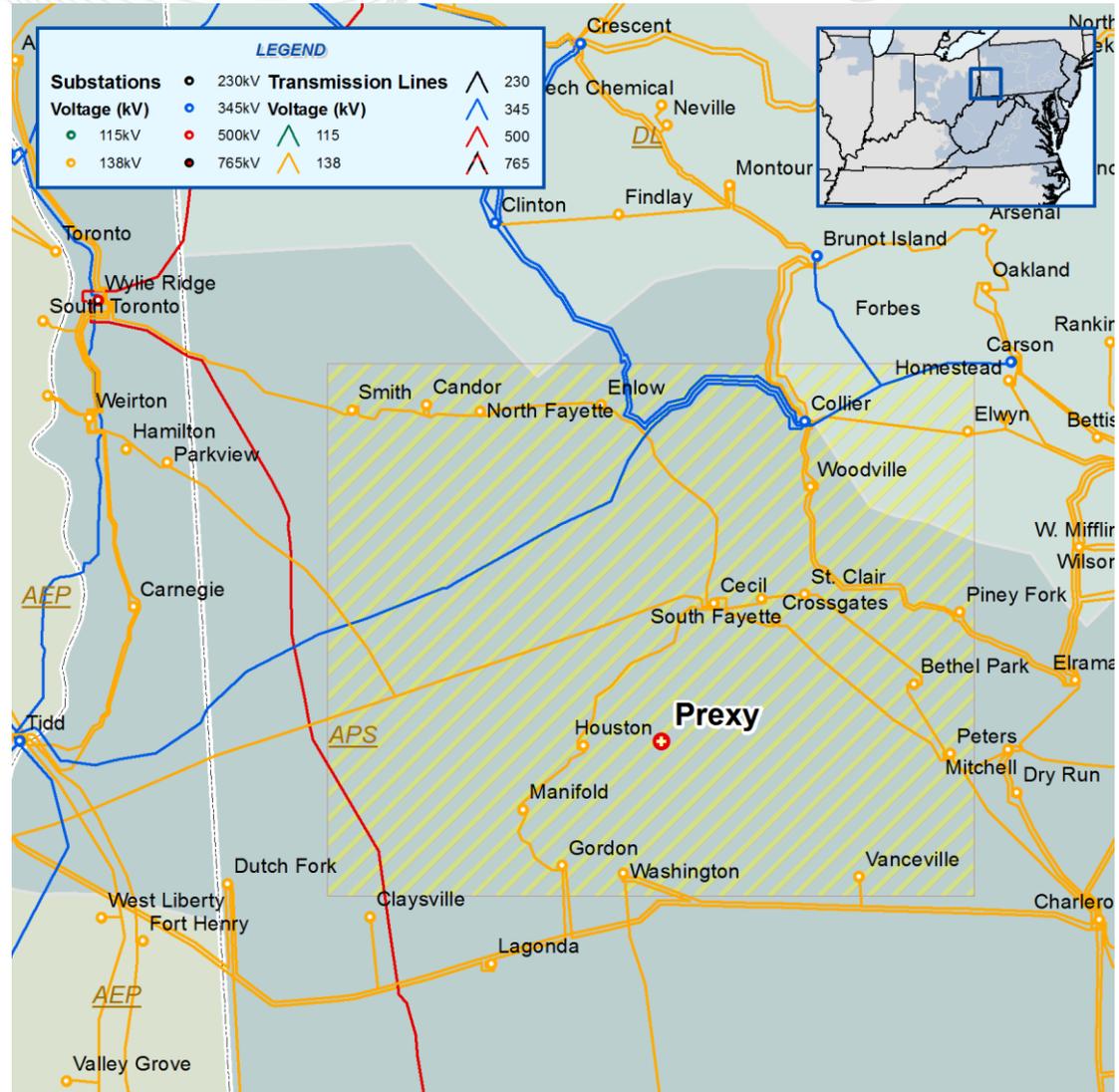


# Prexy Replacement Study Update

- New 500kV transmission from 502 Junction to a new Prexy 500/138kV substation
- Removed from RTEP as part of settlement agreement
- Resolved various thermal and voltage issues in southwest Pennsylvania and parts of northern West Virginia



- Potential solution is under evaluation for a subset of the area that would have benefited from the original Prexy project
- Potential solution to resolve issues in the hi-lighted area involves reconfiguring the Peters to Cecil 138kV line and Elrama to Woodville 138kV line to create a 138 kV path from Woodville to Peters and a 138 kV path from Elrama to Cecil.
- Reconductor Collier – Woodville 138kV
- Add static capacitors at several substations in the area



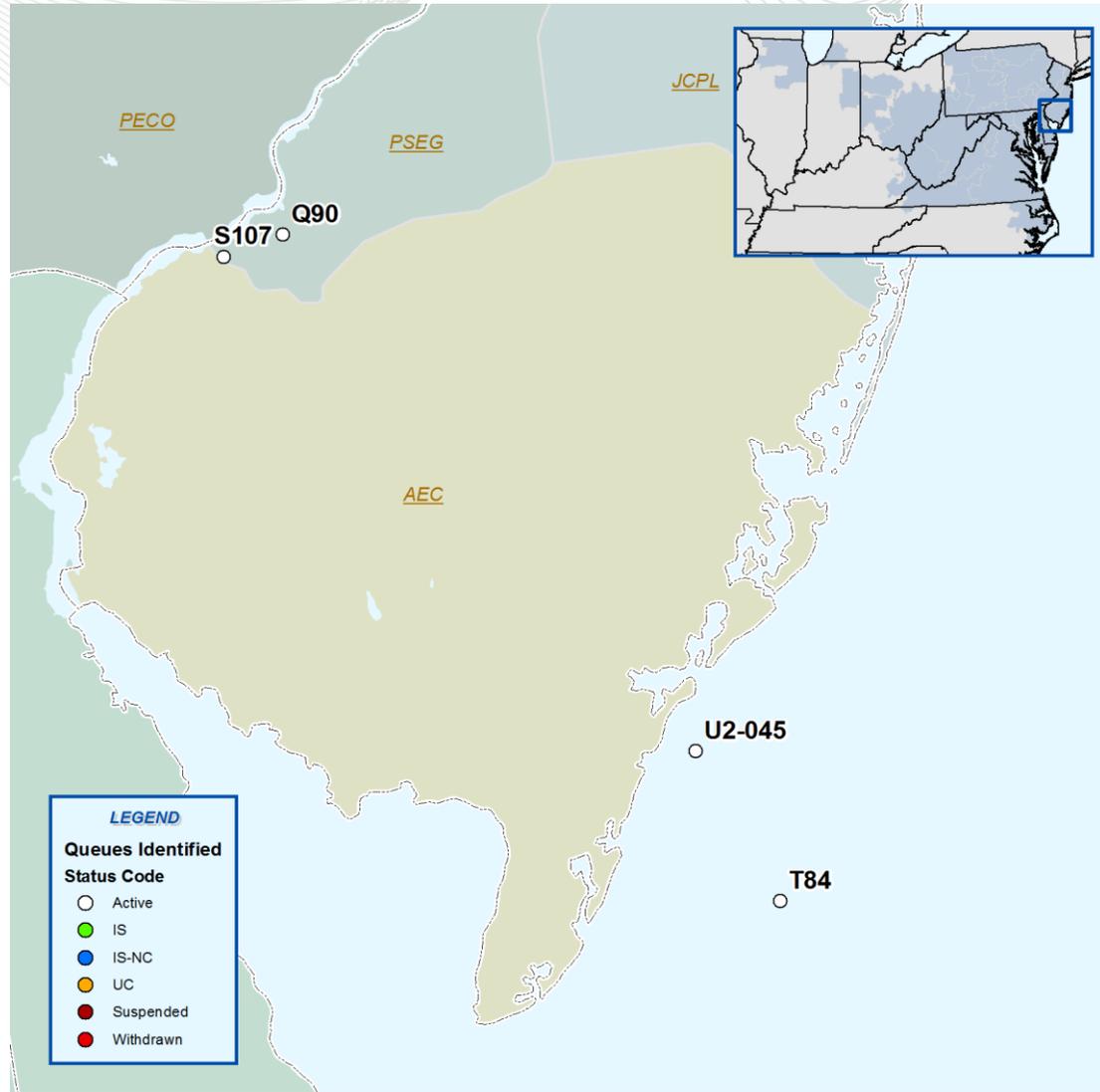


# Generation Interconnection Update

- The V1-queue, which closed on April 30, had 22 generation and MTX projects submitted.
  - Feasibility Studies are due by July 31
  - The U4 had 41 projects, of which 3 have now withdrawn
- Year to date, 88 of the Impact studies that were backlogged at the beginning of 2009 have been issued.
  - 183 impact studies were overdue at the beginning of 2009
  - PJM goal is to complete 146 studies by the end of June.
- Year to date, 83% of all new projects have been issued Feasibility Studies within the Tariff timelines.
- Year to date, 42% of all projects with Impact Studies due have received their Studies within the Tariff guidelines

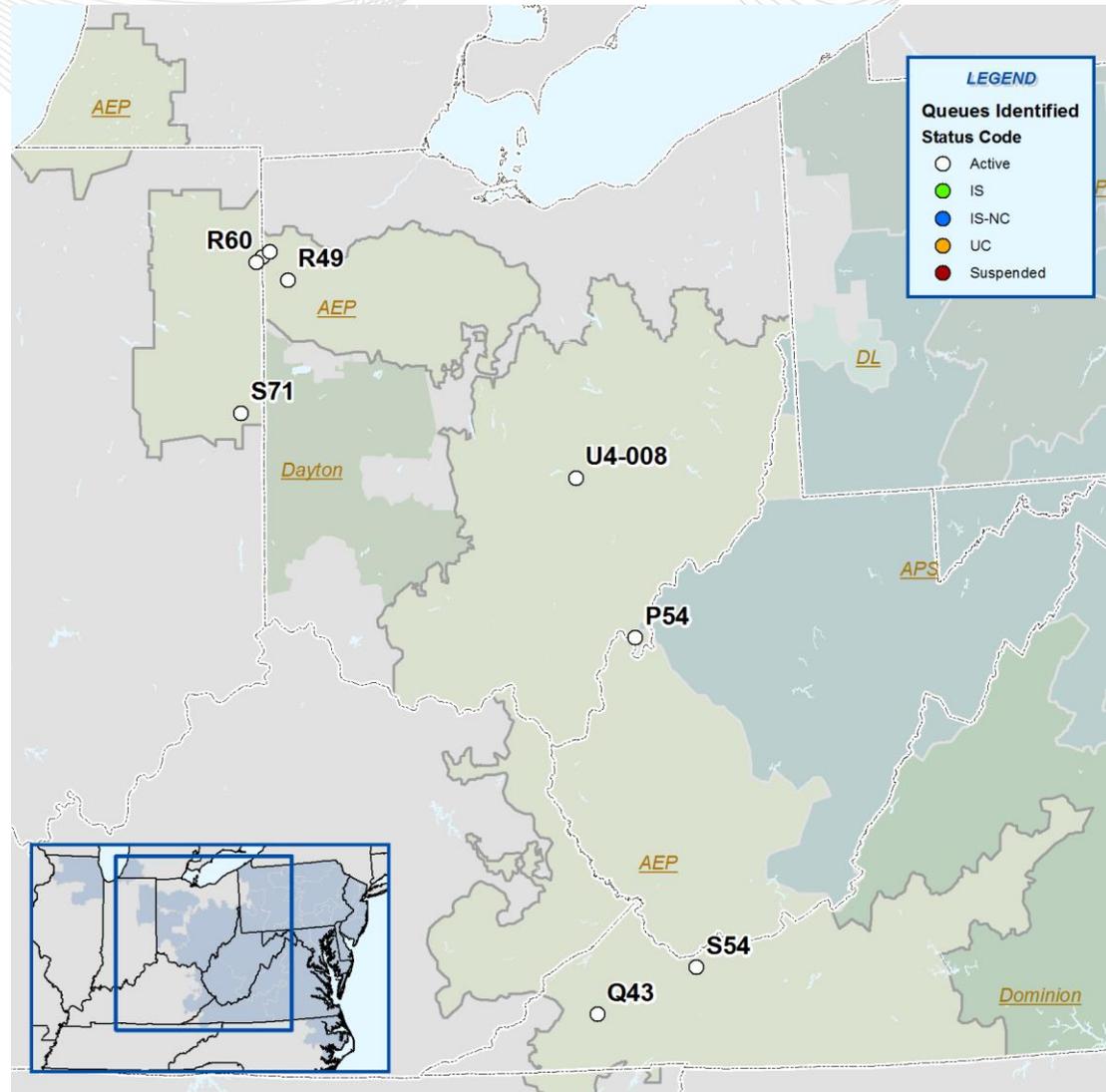
- Year to date, 138 Impact Studies of all types have been issued. This includes on-time, over-due and revised Impact Studies.
- To date, two projects have chosen to use the optional ISA process developed in the RPPWG.

Queue Number	Project Name	MWC	MWE	Fuel Type
Q90	Mickleton 230kV	650	650	Natural Gas
S107	Mickleton 230kV	580	580	Natural Gas
T84	Corson 138kV	70	350	Wind
U2-045	Huron 69kV	2.6	20	Wind



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1229	Mickelton - Replace 50kA breaker PCB U with 63kA breaker	6/30/2011	0.25	S107
n1230	Mickelton - Replace 50kA breaker PCB V with 63kA breaker	6/30/2011	0.25	S107
n1244	Corson - Replace 69kV breaker C	12/13/2012	0.3	T84
n1245	Middle Tap - Replace 138kV breaker G	12/13/2012	0.4	T84
n1184	Huron - Modify one terminal position and 69kV cable to substation fence line for interconnection to 69kV line	6/30/2011	1	U2-045

Queue Number	Project Name	MWC	MWE	Fuel Type
P54	Sporn - Waterford 345kV	1035	1035	Coal
Q43	Clinch River 138kV	534	614	Coal
R49	Haviland - Milan 138kV	30	150	Wind
R60	Convoy-East Lima 345kV	70	350	Wind
S54	Tazewell 138kV	26	130	Wind
S71	Bluff Point 138kV	24	120	Wind
U4-008	South Central Power	6.4	6.4	Methane



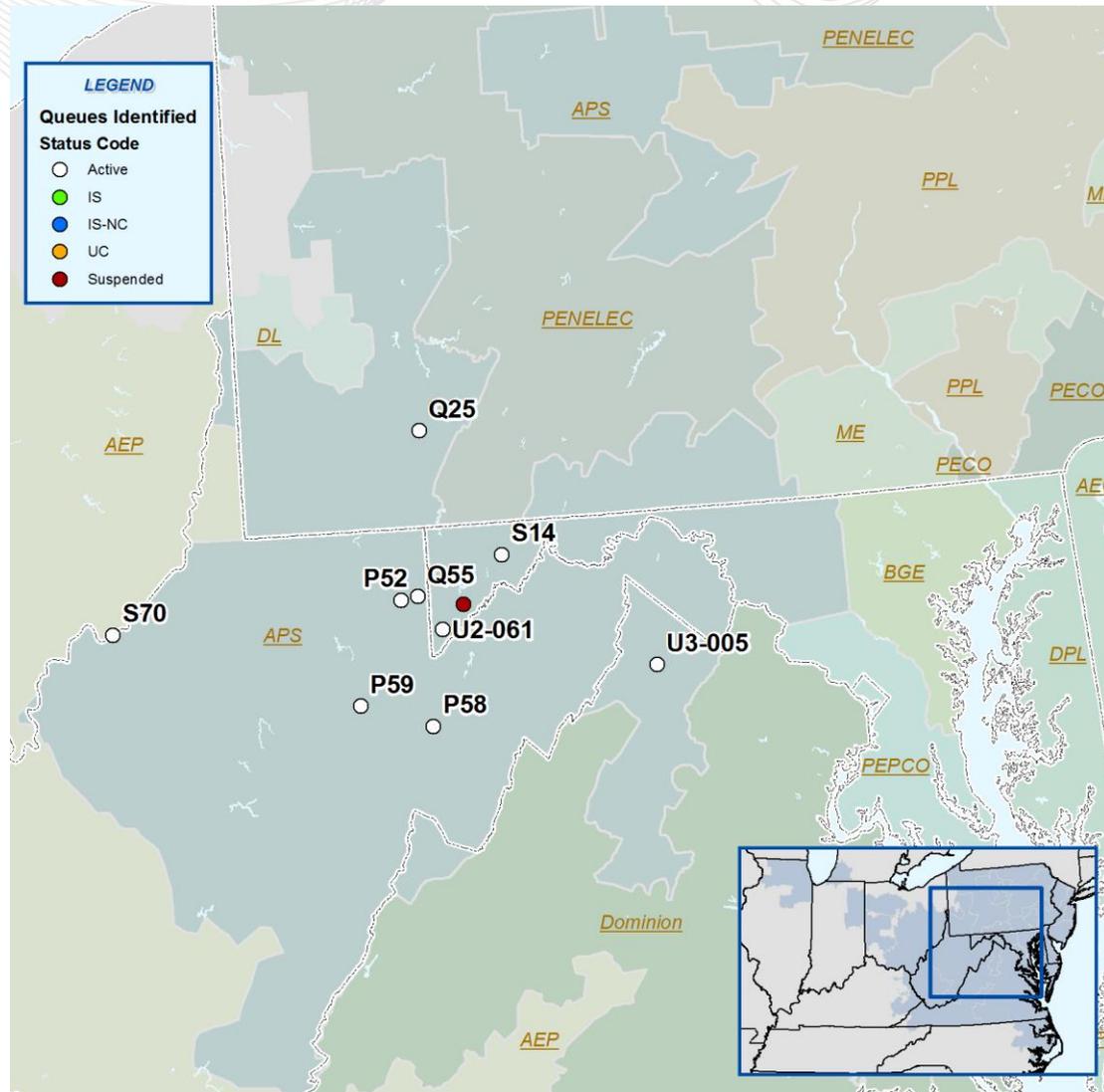
Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1098	Kyger Creek - Replace the "BB" 345kV circuit breaker associated with switches and P&C equipment	5/31/2012	1.4	P54
n1099	Sporn - Loop the Kyger Creek - Tristate line in an out of substation. Add 3-345kV circuit breakers, switches	5/31/2012	3.6	P54
n1100	Tristate - Replace 345kV protection and control equipment on the Kyger Creek terminal	5/31/2012	0.8	P54
n1101	Conemaugh -Install a 4th bay including two circuit breakers and 4 switches	5/31/2012	5.5	P54
n0850	Clinch River - Add 2 138kV circuit breakers to alleviate stability concerns	3/1/2012	2.2266	Q43
n0851	Clinch River - Replace "A" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0853	Clinch River - Replace "A1" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0854	Clinch River - Replace "A2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0855	Clinch River - Replace "B" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0856	Clinch River - Replace "B1" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0857	Clinch River - Replace "B2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0858	Clinch River - Replace "C" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n0859	Clinch River - Replace "C1" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0860	Clinch River - Replace "C2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0861	Clinch River - Replace "D" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0862	Clinch River - Replace "D1" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0863	Clinch River - Replace "D2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0864	Clinch River - Replace "E" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0865	Clinch River - Replace "E1" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0866	Clinch River - Replace "E2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n0867	Clinch River - Replace "F2" 138kV circuit breaker at substation	3/1/2012	1.1133	Q43
n1083	Payne-South Hicksville - Install a 3 breaker ring bus to interconnect the R48 project to the 69kV circuit	12/15/2008	2.5	R48
n1084	Payne - Replace relays on the South Hicksville circuit	12/15/2008	0.25	R48
n1085	South Hicksville - Replace relays on the Payne circuit	12/15/2008	0.25	R48

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1192	Payne - South Hicksville - Construct a new three breaker ring bus at the 69kV circuit	10/30/2010	2.5	R48
n1193	Payne - Replace line relays on South Hicksville 69kV circuit	10/30/2010	0.25	R48
n1222	Haviland - Milan - 3 breaker 138kV ring-bus interconnection substation	10/31/2010	4.5	R49
n1223	Milan - Replace line relaying with AEP standard package and upgrade station RTU	10/31/2010	0.68	R49
n1224	Haviland - Replace line relaying with AEP standard package and upgrade station RTU	10/31/2010	0.721	R49
n1225	Tillman - Replace line relaying with AEP standard package and upgrade station RTU	10/31/2010	0.37	R49
n1226	Tillman - Replace existing 138/34.5kV transformer with one rated 30 MVA and install high side circuit switcher and associated equipment	10/31/2010	1.85	R49
n1240	Bluefield Avenue - Tazewell - 3 Breaker 138kV ring bus at interconnection substation	12/31/2009	3	S54
n1241	Bluefield Avenue - Replace line relaying with AEP standard package and upgrade station RTU on tazewell terminal	12/31/2009	0.4	S54
n1242	Tazewell - Replace line relaying with AEP standard package and upgrade station RTU on Bluefield Avenue terminal	12/31/2009	0.4	S54
n1243	Bluefield Avenue - Tazewell - Construct .7 mile loop of 138kV transmission line to tie in the interconnection station	12/31/2009	1	S54
n1246	Bluff Point - Add 4 breaker ring bus	10/31/2011	3.35	S71

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1247	Jay - Replace line relaying with AEP standard package on College Corner terminal	10/31/2011	0.393	S71
n1248	College Corner - Replace line relaying with AEP standard package on Jay terminal	10/31/2011	0.472	S71
n1249	Randolph - Replace line relaying with AEP standard package	10/31/2011	0.395	S71
n1250	Hodgin - Replace line relaying with AEP standard package	10/31/2011	0.39	S71
n1194	New Lexington - Replace line relays on the South Fultonham 69kV circuit	9/30/2010	0.294	U4-008
N1195	South Fultonham - Replace line relays on the New Lexington 69kV circuit	9/30/2009	0.291	U4-008
N1196	Somerset - Add revenue metering and provide engineering and construction oversight to South Central Power work at the 69kV substation	9/30/2009	0.1985	U4-008

Queue Number	Project Name	MWC	MWE	Fuel Type
P52	Albright 138kV	16	80	Wind
P58	Canaan - Seneca 138kV	30	150	Wind
P59	Belington 138kV	25	125	Wind
Q25	Donegal- Iron City 138kV	16	80	Wind
S14	Dans Mountain	14	70	Wind
S70	Eureka 138kV	36.4	36.4	Hydro
U2-061	Garrett County	6.5	50	Wind
U3-005	Meadow Brook	200 MVAR Capacitor		

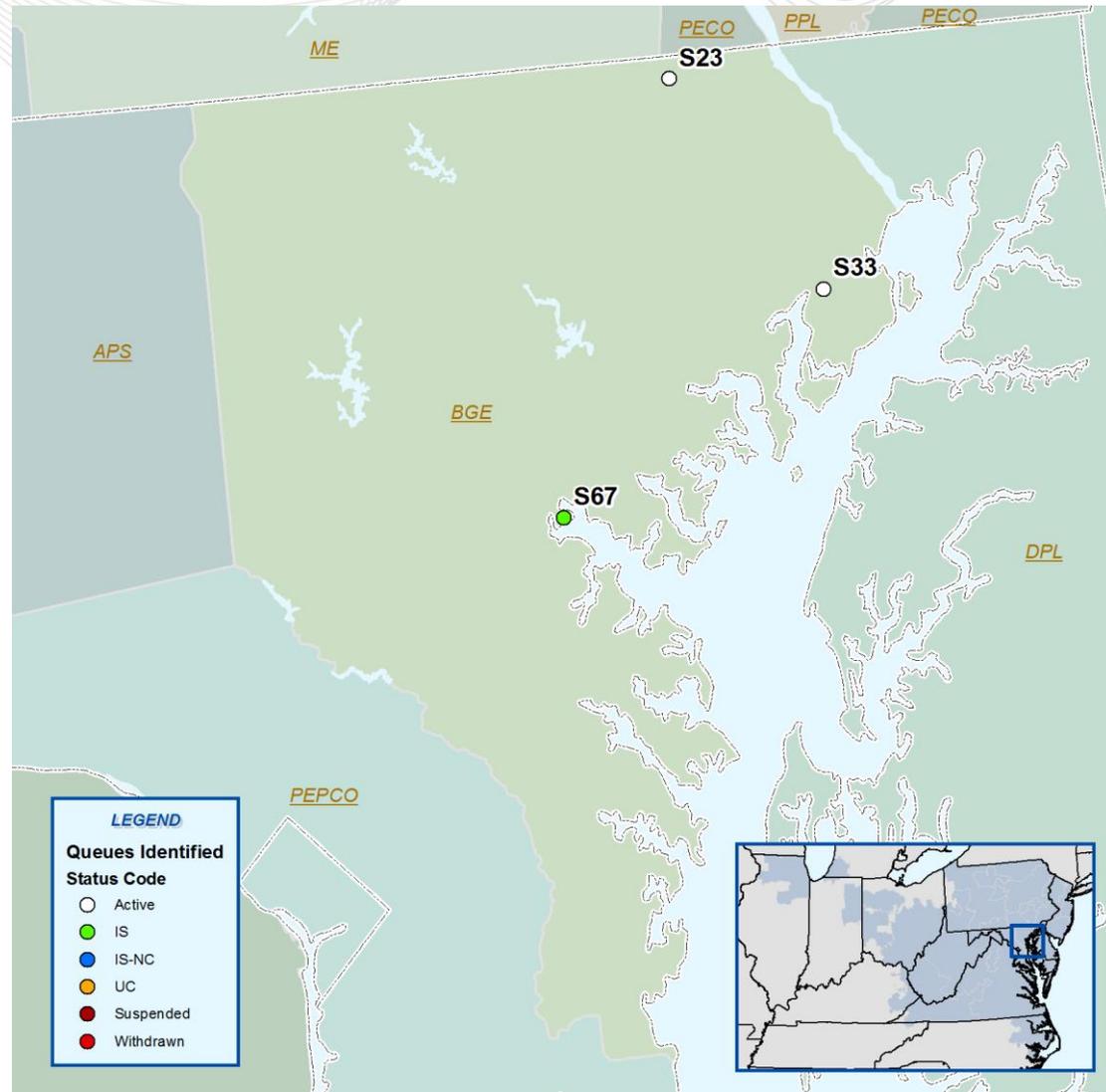


Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1086	Albright - Parr Run - Install 138kV relay scheme	12/1/2005	0.20692	H23_W70
n1103	Briery Mountain - Construct new Briery Mountain 138kV substation in a 3 breaker ring bus configuration	12/31/2008	3.2	P52
n1104	Albright - Install 138kV transfer trip facilities at substation	12/31/2008	0.202	P52
n1105	Williams - Install 138kV transfer trip facilities at substation	12/31/2008	0.258	P52
n1106	Albright - Briery - Upgrade conductor size from 954 ACRS to 1033 kcmil between substations	12/31/2008	0.65	P52
n1110	Harman - Construct new 138kV substation in a 3 breaker ring bus configuration	12/1/2007	3.3	P58
n1111	Seneca Caverns - Install Communication Equipment at 138kV transfer trip facilities	12/1/2007	0.125	P58
n1112	Williams - Install Communication Equipment at 138kV transfer trip facilities	12/1/2007	0.258	P58
n1113	Canaan Valley -William - Reconductor approximately 12.78 miles of circuit between 138kV substation wth 954 ACSR	12/1/2007	5.1	P58
n1114	William - Mettiki Tap - Reconductor approximately 3.42 miles of circuit between 138kV substation with high temp conductor	12/1/2007	1.6	P58
n1115	Seneca Caverns - Canaan Valley - Reconductor approximately 9 miles of circuit between Harman and Canaan Valley 138kV Substations with 954 ACSR	12/1/2007	3.5	P58
n1116	Hardy - Junction - Reconductor approximately 21.43 miles of circuit between Junction and Hardy 138kV substation with 954 ACSR	12/1/2007	7.4	P58

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1120	Leadsville - Construct new 138kV substation in a 3 breaker ring bus configuration	12/31/2008	3.44	P59
n1121	Loughs Lane - Install 138kV transfer trip facilities	12/31/2008	0.143	P59
n1122	Pruntytown - Install 138kV transfer trip facilities	12/31/2008	0.143	P59
n1123	Mettiki - Reconductor approx. 17.3 miles of circuit between P52 and Mettiki tap 138kV substation with high temperature conductor	12/31/2008	7.3	P59
n1080	Bullskin - Construct new 138kV substation in a 3 breaker ring bus configuration	12/15/2008	2.095	Q25
n1081	Iron Bridge - Install communication equipment redundant channel transfer trip scheme	12/15/2008	0.132	Q25
n1082	Donegal - Install a redundant channel transfer trip scheme	12/15/2008	0.132	Q25
n1207	Snowy Creek - Expand SS to accept second 138/69 transformer, breakers and relocate existing 69kV equipment	12/31/2009	4.2	Q55
n1208	Albright - Install 138kV transfer trip facilities	12/31/2009	0.154	Q55
n1209	Junction - Install 138kV transfer trip facilities	12/31/2009	0.154	Q55
n1210	Black Oak - Install second 500/138kV transformer; 500 kV breaker, two 138kV breakers	12/31/2009	9.6	Q55
n1174	Dans Mountain - Construct 138kV substation in a 3 breaker ring bus configuration and loop the Ridgeley-Carlos Junction circuit	12/31/2009	3.16	S14

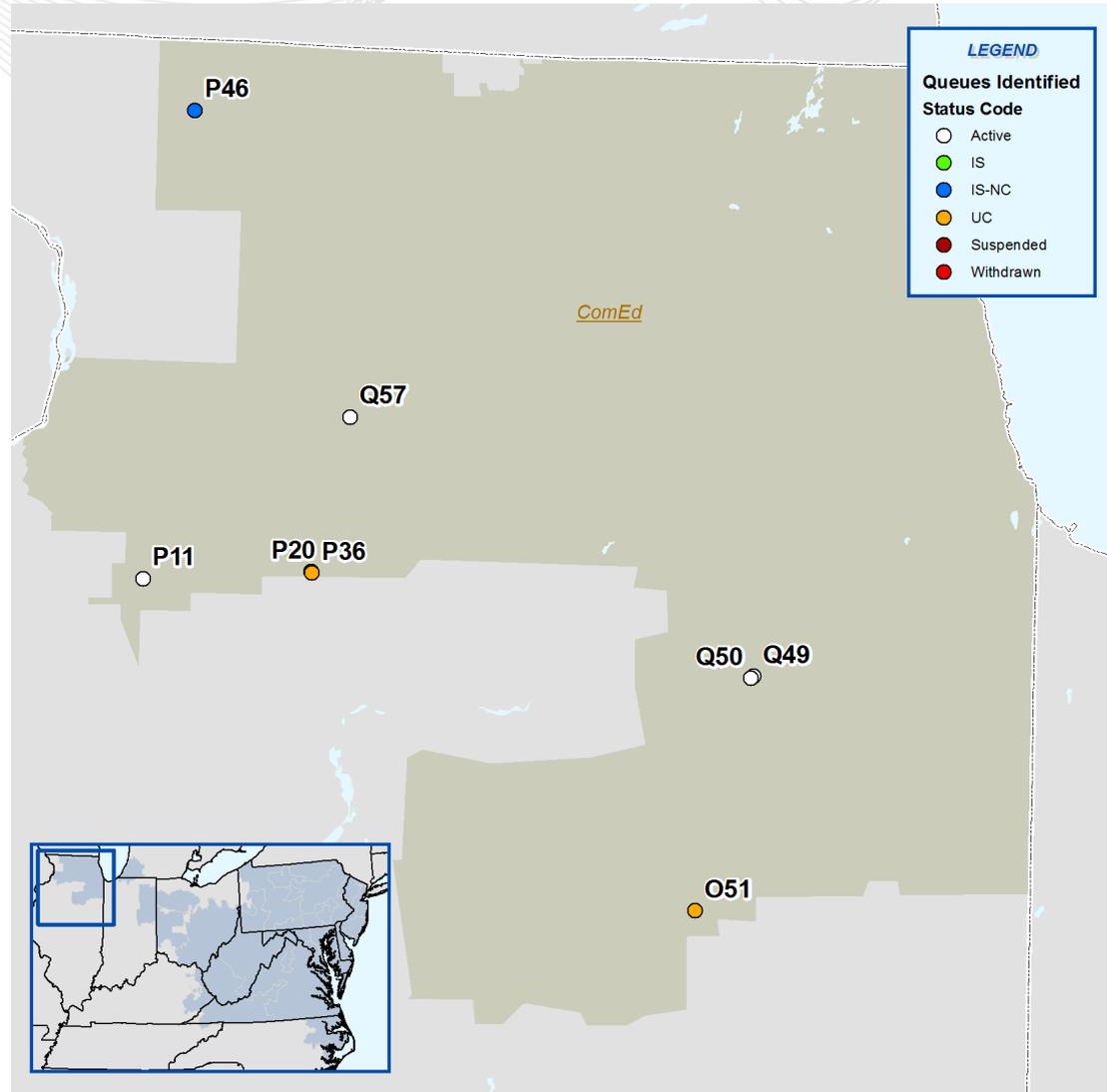
Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1175	Ridgeley - Install 138kV transfer trip facilities	12/31/2009	0.146	S14
n1177	Garrett - Install 138kV transfer trip facilities	12/31/2009	0.146	S14
n1178	Afton-Garrett - Reconductor approx. 9.2 miles of circuit between 138kV substations w/954 kcmil ACSR	12/31/2009	3.7	S14
n1179	Garrett - Upgrade the Albright 138kV line terminal equip. at the 138kV substation for 954 kcmil ACSR	12/31/2009	0.196	S14
n1180	Albright-Afton - Reconductor approx. 6.3 miles of circuit between 138kV substations with 954 kcmil ACSR	12/31/2009	2.38	S14
n1181	Albright - Upgrade the 138kV line terminal equip. at the 138kV substation for 954 kcmil ACSR	12/31/2009	0.115	S14
n1168	Belmont - Modify the 138kV substation to accept a new line terminal	9/30/2012	1.36	S70
n1251	Dutch Hill - Construct the new 46kV substation	12/31/2008	1.26	T39
n1252	Potter - Install 46kV transfer trip facilities at substation	12/31/2008	0.182	T39
n1060	Roth Rock - New 138kV single breaker interconnection substation. The new substation approximately 4.65 miles from Mettiki tap of Albright/William 138kV circuit	12/31/2009	1.7	U2-061
n1088	Meadow Brook - Install a 200 MVAR Capacitor	12/31/2008	6.1	U3-005

Queue Number	Project Name	MWC	MWE	Fuel Type
S23	Graceton 230kV	550	550	Natural Gas
S33	Riverside	85	120	Natural Gas
S67	Gould St.	101	101	Natural Gas



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1185	Graceton - Replace 2 230kV breakers (22008/2323) with 63kA, 3000A units	6/1/2011	0.6	S23
n1186	Graceton - Replace 2 230kV breakers (22008/2323) with 63kA, 3000A units	6/1/2011	0.6	S23
n1187	Conastone - North - Northwest - Construct a 21 mile 230kV line 1590kcmil 649/802, Construct a new single circuit 230kV line	6/1/2011	38	S23
n1188	North Northwest - Construct 230kV switching station	6/1/2011	21.9	S23
n1189	North Northwest - Northwest - Bundle existing 2311 & 2322 for ~1600MVA SE	6/1/2011	6	S23
n1190	Five Fork - Rock Ridge - Reconductor 110511 to achieve 255+ MVA (>1280A)	6/1/2011	7.5	S23
n1191	Bagley - Rapheal Road - Build 230kV circuit (6 mi.) to a double circuit rated 659 MVA normal / 800 MVA emergency on each circuit	6/1/2011	7	S23
n1197	Perryman - Construct two new 115kV substations	6/1/2010	2.839	S32
n1217	Riverside - Replace breaker 110501/110-1 T	5/1/2010	0.223	S33
n1218	Riverside - Replace breaker 110502/110-1 T	5/1/2010	0.223	S33
n1219	Riverside - Replace breaker 110503/110-1 T	5/1/2010	0.223	S33
n1220	Riverside - Replace breaker 110504/110-1 T	5/1/2010	0.223	S33
n1221	Gould St. - Upgrade Circuit 33871-2	5/1/2010	1.97	S67

Queue Number	Project Name	MWC	MWE	Fuel Type
O51	Pontiac Midpoint-Wilton Center 345kV	60	300	Wind
P11	Kewanee 138kV	40	200	Wind
P20	Nelson-Electric Junction 345kV	42	210	Wind
P36	Nelson - Lee Co. EC 345kV	48	240	Wind
P46	Lena 138kV	20	100	Wind
Q49	Dresden 345kV	70	70	Nuclear
Q50	Dresden 345kV	70	70	Nuclear

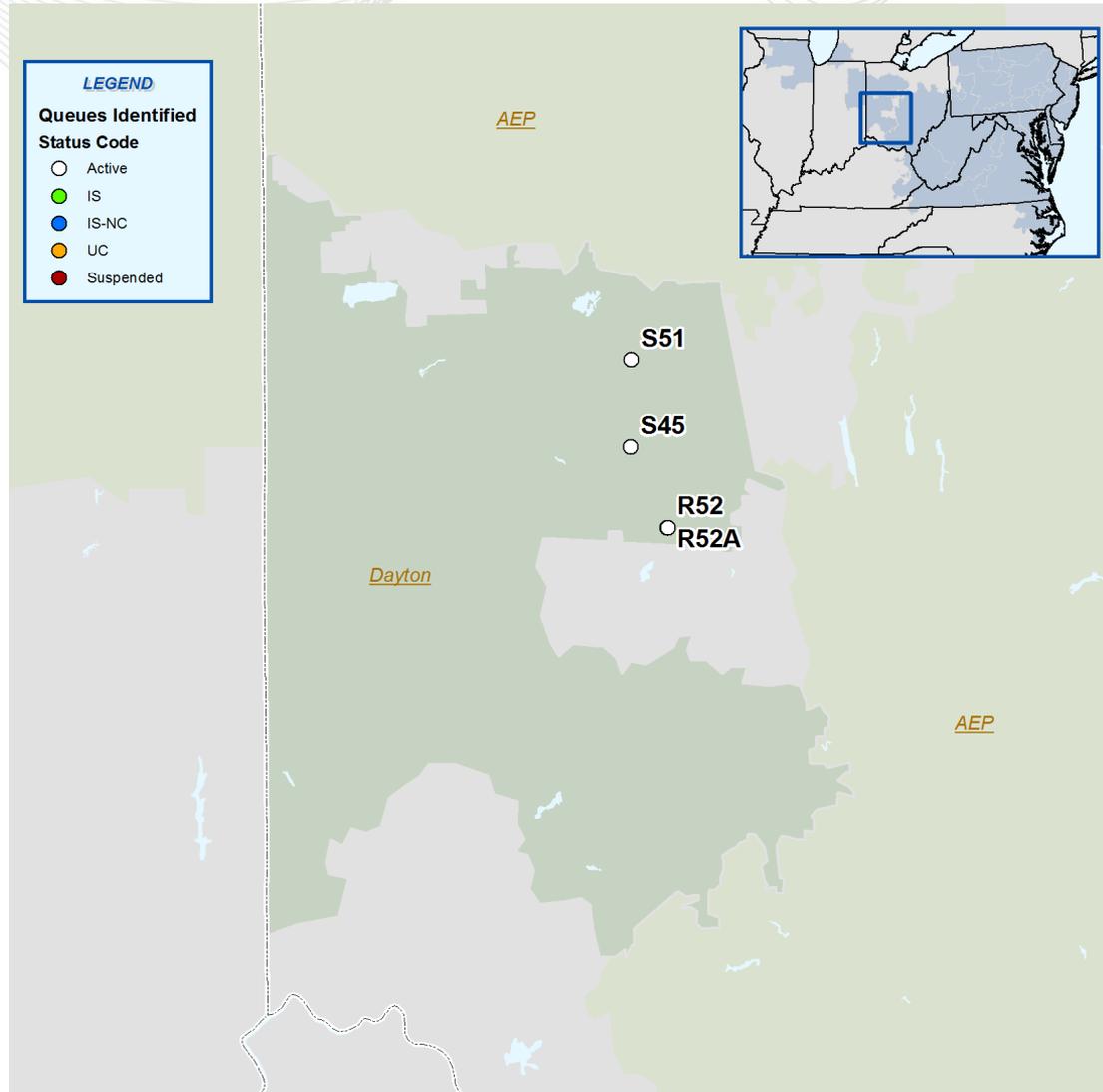


Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1079	Cayuga Ridge South TSS976 - Install 345kV structure(s) and taps to cut in new switching station on 345kV line 8012	12/1/2007	1.454	O51
n0846	TSS 74 Kewanee - Replace TSS 74 Kewanee 6101 Breaker	12/31/2006	0.771	P11
n0847	TSS 74 Kewanee - Replace TSS 74 Kewanee 7408 Breaker	12/31/2006	0.771	P11
n0848	TSS 74 Kewanee - Replace TSS 74 Kewanee 7423 Breakers	12/31/2006	0.771	P11
n0849	TSS 74 Kewanee - Replace TSS 74 Kewanee to Kewanee (Ameren) conductor and series equipment to Ameren owned Breaker 105	12/31/2006	0.015	P11
n1070	Walton Road TSS 184 - Engineer/Construction oversight	9/15/2007	0.248	P20
n1071	Nelson TSS 155 - Upgrade existing 15502 line relays to be compatible with TSS 184 Walton Road	9/15/2007	0.05	P20
n1072	Electric Junction TSS 111 - Upgrade existing 15502 Line Relays to be compatible with TSS 184 Walton Road	9/15/2007	0.05	P20
n1073	Walton Road TSS 184 - Upgrade existing microwave system to accommodate addition	9/15/2007	0.925	P20
n1063	Lancaster - Modify distribution line 17121/11902/11904 line reconfiguraton - (not at substation)	11/1/2007	2.05	P46
n1064	Wempletown TSS 171 - Upgrade relays	11/1/2007	0.0114	P46
n1065	Lancaster - Relay modifications at TSS119 associated with P46	11/1/2007	0.23	P46

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1119.1	Dresden Sta 12 - Replace breaker BT 1-7	10/31/2009	1.5	Q49
n1119.2	Dresden Sta 12 - Replace breaker BT 2-3	10/31/2009	1.5	Q49
n1119.3	Dresden Sta 12 - Replace breaker BT 3-4	10/31/2009	1.5	Q49
n1119.4	Dresden Sta 12 - Replace breaker BT 4-5	10/31/2009	1.5	Q49
n1119.5	Dresden Sta 12 - Replace breaker BT 5-6	10/31/2009	1.5	Q49
n1119.6	Dresden Sta 12 - Replace breaker BT 6-7	10/31/2009	1.5	Q49
n1066.1	Dresden - Sta12 Replace BT 8-9	10/31/2010	1.5	Q50
n1066.2	Dresden - Sta12 Replace BT 9-10	10/31/2010	1.5	Q50
n1066.3	Dresden - Sta12 Replace BT 10-11	10/31/2010	1.5	Q50
n1066.4	Dresden - Sta 12 Replace BT 11-14	10/31/2010	1.5	Q50
n1066.5	Dresden - Sta 12 Replace BT 8-15	10/31/2010	1.5	Q50
n1075	Hermard Road TSS 961 - Construct substation	12/31/2007	1.03	Q57

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1076	Steward TSS 186 - Upgrade existing 11323 Line Relays to be compatible with TSS961	12/31/2007	0.1	Q57
n1077	Waterman TSS 113 - Upgrade existing 11323 Line Relays to be compatible with TSS961	12/31/2007	0.1	Q57
n1078	Herman TSS 961 - Install new 138kV structure(s) and taps to cut-in new switching station on line 11323	12/31/2007	0.787364	Q57
n1211	Glidden - TSS 83 Upgrade existing 11323 line relays to be compatible with TSS 94 Haumesser Road	12/31/2007	0.1	Q57
n1212	11323 Line - Reconductor 1.9 miles of 11323 from TSS 94 Haumesser Road to West Dekalb tap	12/31/2007	3.8	Q57
n1213	11323 Line - Recondcutor 8 miles of 11323 from TSS 113 Waterman to TSS 83 Glidden	12/31/2007	16	Q57
n1214	TSS 113 Waterman - Replace BT 1-2 circuit breaker and series equipment	12/31/2007	0.5	Q57
n1215	TSS 113 Waterman - Replace BT 2-3 circuit breaker and series equipment	12/31/2007	0.5	Q57
n1216	11323 Line - Reconductor 3.9 miles of 11323 from TSS 113 Waterman to West Dekalb tap	12/31/2007	7.8	Q57

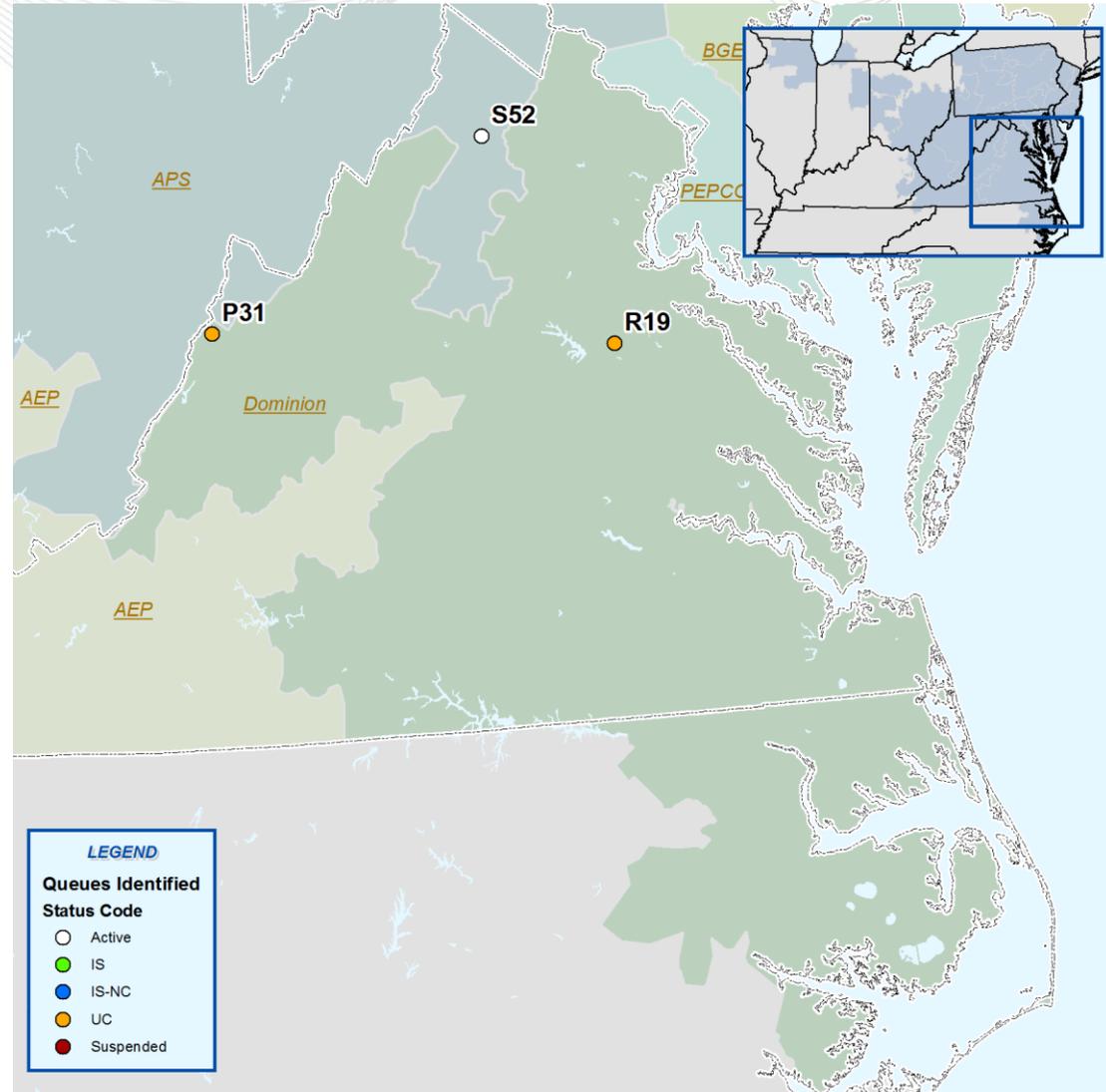
Queue Number	Project Name	MWC	MWE	Fuel Type
R52	Mechanicsburg - Darby	40	200	Wind
R52A	Kings Creek 69kV	20	100	Wind
S45	Mechanicsburg North	20	100	Wind
S51	E. Liberty-Blue Jacket 69kV	19.8	99	Wind



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1054	Urbana - Replace 3 breakers DB-BH3E 30kA breakers	10/1/2008	0.1	R52
n1055	Urbana - Replace 3 breakers DB-BH3W - 30kA breakers	10/1/2008	0.1	R52
n1056	Urbana - Replace 3 breakers DB-BH1 - 30kA breakers	10/1/2008	0.1	R52
n1158.1	Urbana - Johnson - Reconductor 636 ACSR w/ 795 ACSR	12/31/2009	0.9	R52
n1158.2	Urbana - Johnson - Upgrade 800A Line Trap on the 69kV Urbana line	12/31/2009	costs in n1158.1	R52
n1159.1	Johnson - Urbana - Reconductor 636 ACSR w/ 795 ACSR on the 69kV line	12/31/2009	0.65	R52
n1159.2	Johnson - Urbana - Upgrade Line Drop on the 69kV Urbana line	12/31/2009	costs in n1159.1	R52
n1160.1	Kingscreek - Logan - Upgrade 600A breaker/CT on the Logan 69kV line	12/31/2009	0.2	R52A
n1160.2	Kingscreek - Logan - Upgrade 600A switch on the Logan 69kV line	12/31/2009	costs in n1160.1	R52A
n1161	Wookstock - Marysville - Upgrade 400A Line Trap - Marysville 69kV line	12/31/2009	0.025	R52A
n1162.1	Kingscreek - Logan - Upgrade 600A Breaker/CT on the 69kV Logan line	12/31/2009	4.115	S45
n1162.2	Kingscreek - Logan - Upgrade 600A Switch on the Logan 69kV line	12/31/2009	costs in n1162.1	S45

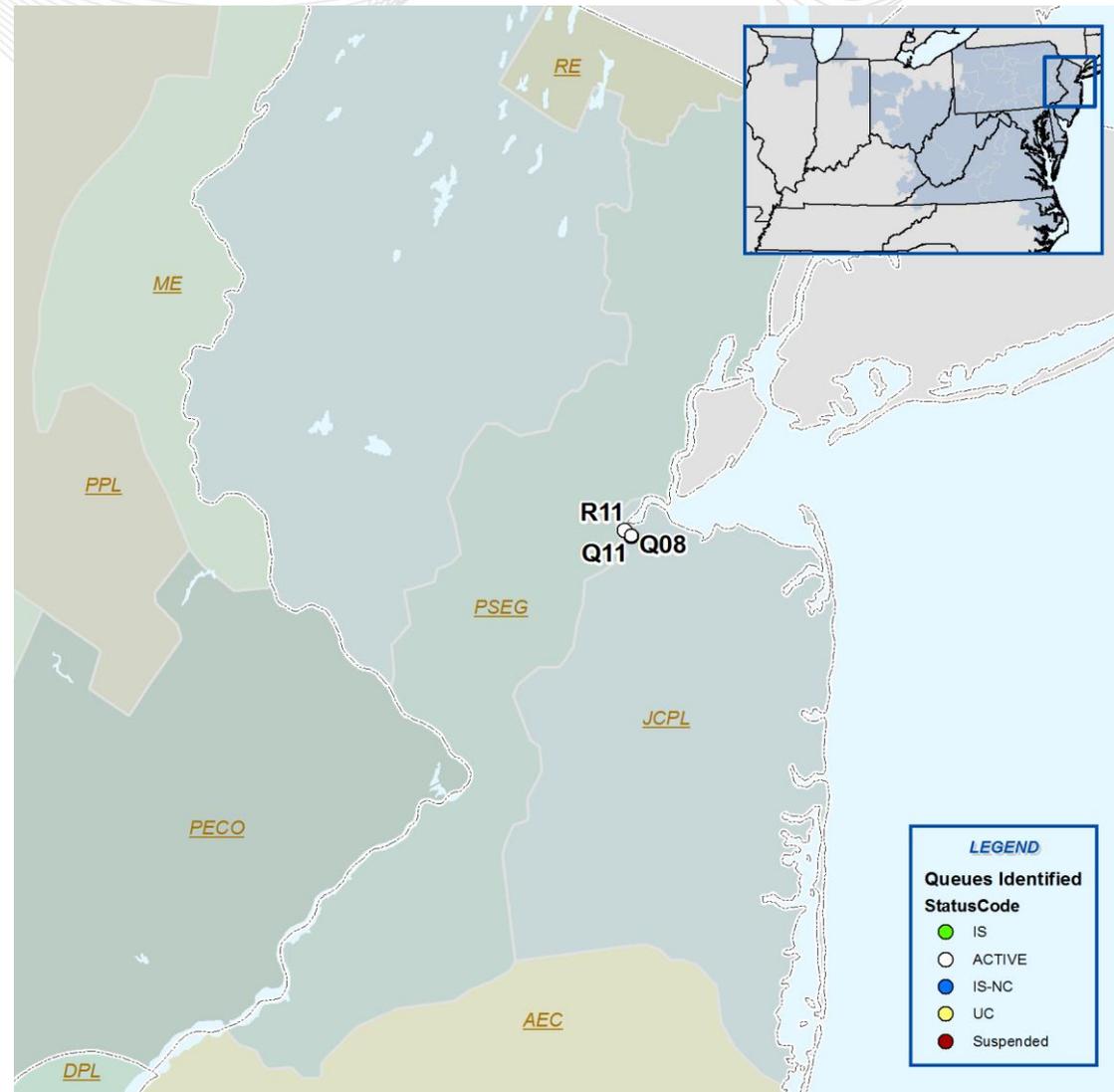
Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1162.3	Kingscreek - Logan - Upgrade 800A Line Trap on the Logan 69kV line	12/31/2009	costs in n1162.1	S45
n1162.4	Kingscreek - Logan - Upgrade 800A Line Trap on the Logan 69kV line	12/31/2009	costs in n1162.1	S45
n1162.5	Kingscreek - Logan - Upgrade Bus on the Logan 69kV line	12/31/2009	costs in n1162.1	S45
n1162.6	Kingscreek - Logan - Upgrade Relay Loadability at the Logan 69kV line	12/31/2009	costs in n1162.1	S45
n1162.7	Kingscreek - Logan - Reconductor 477 ACSR w/ 795 ACSR on the 69kV line	12/31/2009	costs in n1162.1	S45
n1162.8	Kingscreek - Logan - Upgrade Line Drops on the 69kV line	12/31/2009	costs in n1162.1	S45
n1182.1	Bellefontaine - Reconductor 477ACSR w/ 795 ACSR	6/1/2009	0.645	S51
n1182.2	Bellefontaine - Upgrade 600A Switch	6/1/2009	costs in 1182.1	S51
n1182.3	Bellefontaine - Upgrade Line Drop	6/1/2009	costs in 1182.1	S51
n1183.1	Logan - Bellefontaine - Reconductor 477 ACSR w/ 795 ACSR	6/1/2009	1.682	S51
n1183.2	Logan - Bellefontaine - Upgrade Line Drops	6/1/2009	costs in 1183.1	S51

Queue Number	Project Name	MWC	MWE	Fuel Type
P31	Bath County	SPS		
R19	Ladysmith 230kV	340	340	Natural Gas
S52	Morrisville 500kV	600	50	Natural Gas



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1239	Bath County - Lexington - Pumping SPS	5/1/2008	0.223	P31
n1061	Elmont -Replace/upgrade 230kV breaker 216T2075	12/31/2009	0.18	R19
n1062	Elmont - Replace/upgrade 230kV breaker 283T2075	12/31/2009	0.18	R19
n1074	Ladysmith - Install breaker position and associated equipment to new substation	9/15/2015	0.65	R19
n1087	Possum Point - Woodbridge - Reconductor 230kV line	6/1/2009	3	S102
n1198	Front Royal - Construct new 500kV substation	5/1/2010	6.44	S52
n1199	Front Royal - Connect line 580 into new 500kV substation	5/1/2010	1.96	S52
n1200	Front Royal - Install Relay at Morrisville	5/1/2010	0.084	S52
n1201	Brambleton - Upgrade 230kV line 201 Yukon conductor	5/1/2010	2.354	S52

Queue Number	Project Name	MWC	MWE	Fuel Type
Q08	Red Oak 230kV	50	50	Natural Gas
Q11	Red Oak 230kV	300	300	Natural Gas
R11	South River	440	440	Natural Gas

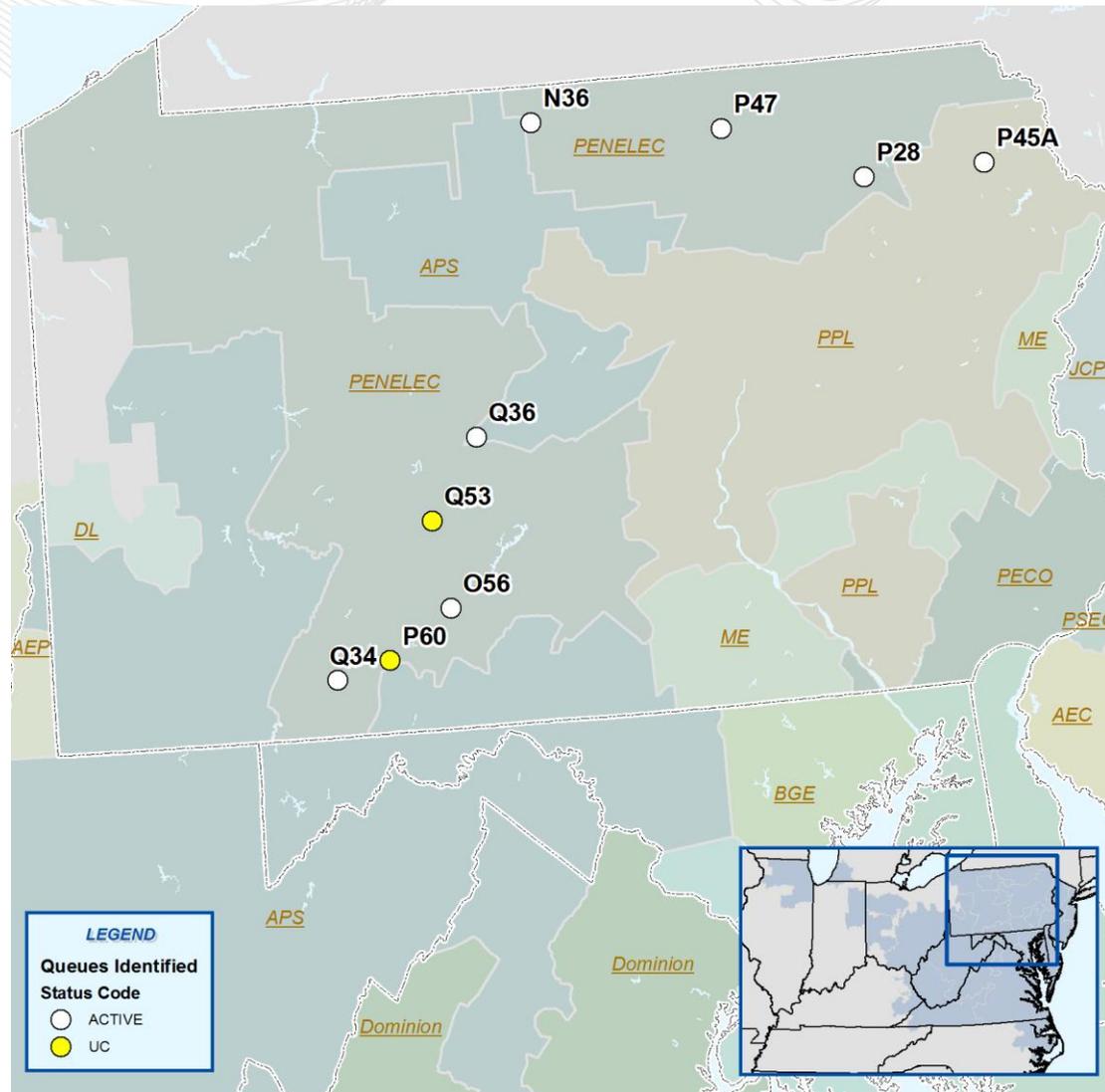


Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1204	Q11 - Install protective relays at the 34.5/115kV substation and provide engineering oversight and commissioning support	11/1/2007	0.064	Q08
n0727	Red Oak - Install New 3 Breaker Ring Bus with control building to be located along the South River to Raritan River 230kV line	2/23/2006	3.8	Q11
n0728	Red Oak - Install Protection relays, metering, SCADA and RTU facilities for new substation	2/23/2006	0.3	Q11
n0729	Raritan River - Red Oak - Reconductor 2.58 miles of 230kV conductor from Raritan River to Red Oak	2/23/2006	1.548	Q11
n0730	Raritan River - Replace drop loop and bus conductor in the 230kV substation	2/23/2006	0.03	Q11
n0731	Red Oak - Replace drop loop and bus conductor in the 230kV substation	2/23/2006	0.02	Q11
n0732	Raritan River - Red Oak - Reconductor 2.58 miles from Raritan River to Red Oak	2/23/2006	1.548	Q11
n0733	Raritan River - Replace drop loop and bus conductor at the 230kV substation	2/23/2006	0.03	Q11
n0734	Red Oak - Replace drop loop and bus conductor at the 230kV substation	2/23/2006	0.02	Q11
n1036	Raritan River - Upgrade gradient Capacitor - G1047E breaker at the 230kV Substation	6/1/2008	0.06	Q11
n1037	Raritan River - Upgrade gradient Capacitor - G1047F breaker at the 230kV Substation	6/1/2008	0.06	Q11
n1038	Raritan River - Upgrade gradient Capacitor - T1034E breaker at the 230kV Substation	6/1/2008	0.06	Q11

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1039	Raritan River - Upgrade gradient Capacitor - T1034F breaker at the 230kV Substation	6/1/2008	0.06	Q11
n1040	Raritan River - Upgrade gradient Capacitor - BK15 breaker at the 230kV Substation	6/1/2008	0.06	Q11
n1041	Red Oak - Upgrade gradient Capacitor - T1034 breaker at the 230kV Substation	6/1/2008	0.06	Q11
n1042	Red Oak - Replace MT1 breaker at 230kV Substation	6/1/2008	0.06	Q11
n1043	Red Oak - Replace MT2 breaker at 230kV Substation	6/1/2008	0.125	Q11
n1044	Red Oak - Replace MT3 breaker at 230kV Substation	6/1/2008	0.125	Q11
n1045	Red Oak - Replace MT4 breaker at 230kV Substation	6/1/2008	0.125	Q11
n1046	Raritan River - Upgrade gradient Capacitor - I1023E breaker at the 230kV Substation	6/1/2008	0.125	Q11
n1047	Raritan River - Upgrade gradient Capacitor - I1023F breaker at the 230kV Substation	6/1/2008	0.125	Q11
n1203	Q08 - Install protective relays at the 34.5/115kV substation and provide engineering oversight and commissioning support	11/1/2007	0.064	Q11

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1227	Raritan River - Upgrade to 50 kA interrupting capability with a TRV grading capacitor (Breaker W1037E)	6/30/2009	0.77	R11
n1228	Red Oak - Upgrade to 50kA interrupting capability with a TRV grading capacitor (Breaker G1047)	6/30/2009	0.77	R11
n1256	South River - Install 230kV 3 breaker ring bus substation. To include ring bus, control building, 1 terminal structure, relay protection, metering, RTU & SCADA	6/30/2009	3.2	R11
n1257	South River - Install 230kV 6 breaker ring bus substation. To include ring bus, control building, 1 terminal structure, relay protection, metering, RTU & SCADA	6/30/2009	7.1	R11
n1265	R11 - Provide engineering oversight and comissioning support of the Interconnection customer substation including support of protective relay installation	6/30/2009	0.082	R11
n1266	South River - Relay upgrades at existing substation	6/30/2009	0.26	R11
n1267	Q08 - Relay upgrades at Red Oak network substation	6/30/2009	0.181	R11
n1268	Q11 - Relay upgrades at Red Oak Network substation	6/30/2009	0.181	R11

Queue Number	Project Name	MWC	MWE	Fuel Type
N36	Gold-Sabinsville 115kV	10	50	Wind
O56	Osterburg East 115kV	15.2	76	Wind
P28	Mehoopany 115kV	30	150	Wind
P45A	Thompson 115kV	24	120	Wind
P47	Mansfield-S. Troy 115kV	20	100	Wind
P60	New Baltimore 115kV (Stony Creek)	10.5	52.5	Wind
Q34	Garrett 115kV	20	100	Wind
Q36	Tyrone N. - Philipsburg 115kV	10	50	Wind
Q53	Summit-West Fall 115kV	7.6	38	Wind

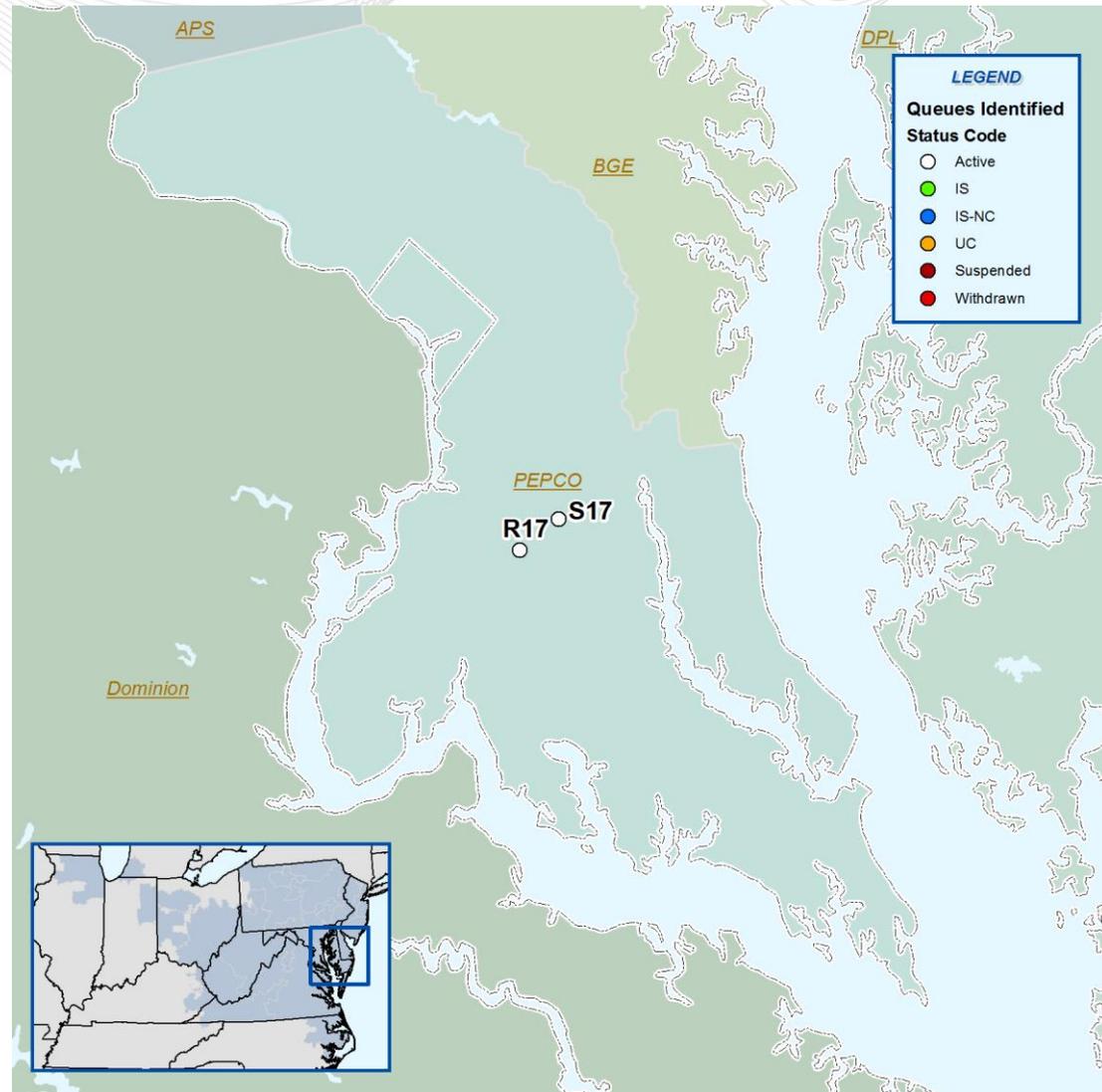


Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1102	Gold-Sabinsville - Install .1 miles of 115kV transmission line to new 3 breaker ring bus substation for N36	11/1/2006	0.25	N36
n1048	Allegheny - Somerset - Construct new 115kV, 3 breaker ring bus interconnection substation along 115kV line	11/1/2007	2.763	O52
n1049	Allegheny - Somerset - Install 115kV line attachment facilities (line tie in work) extending from Potter-Gold to new 3 breaker ring bus at O52 substation	11/1/2007	0.25	O52
n1050	Potter - Perform relay and control work at substation	11/1/2007	0.299	O52
n1051	Gold-Sabinsville - Perform relay and control work at the N36 Network substation for O52	11/1/2007	0.376	O52
n1052	Gold-Potter -Sabinsville 115kV - Install fiber optic cable between the N36 and O52 Substations for O52	11/1/2007	0.6	O52
n1053	Niles Valley - Perform relay and control work at the substation of O52	11/1/2007	0.4	O52
n1269	O56 - Provide engineering oversight and commissioning support of the Interconnection customer substation including support of protective relay installation	12/31/2007	0.064	O56
n1202	P28 - Install protective relays at the 34.5/115kV substation and provide engineering oversight and commissioning support	11/1/2007	0.064	P28
n1205	P45A - Install protective relays at the 34.5/115kV substation and provide engineering oversight and commissioning support	12/1/2009	0.064	P45A
n0974.1	Mansfield-S. Troy - Provide engineering support and oversight for the installation of the new 3 breaker ring bus being installed under Option to Build (P47)	12/1/2009	0.224	P47
n0979.1	South Troy - Replace substation conductor at substation	12/1/2009	0.125	P47

Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1206	P60 - Install line loop from existing Allegheny-Bedford North 115kV line to new 115kV Penelec 3 breaker ring bus	9/1/2007	0.25	P60
n1124	Garrett -115kV 3 breaker ring bus substation along the Rockwood-Somerset 115kV line approx 1 mile NE of Rockwood substation, disconnect switches, bus structure and control hours with relaying/SCADA	11/30/2008	2.763	Q34
n1125	Garrett - Install Newtap structure in Rockwood-Somerset 115kV line	11/30/2008	0.25	Q34
n1126	Rockwood - Modify relay and control at 115kV substation for Garrett	11/30/2008	0.25	Q34
n1127	Somerset - Modify relay and control at 115kV substation for Garrett	11/30/2008	0.25	Q34
n1128	Rockwood - Install fiber optic cable from substation to new interconnection substation being installed for Q34 (Garrett)	11/30/2008	0.15	Q34
n1262	Q34 - Provide engineering oversight and comissioning support of the Interconnection customer substation including support of protective relay installation	11/30/2008	0.224	Q34
n1129	Tyrone North - 3 breaker ring bus substation along the Philipsburg 115kV line approx 6.5 mi NE of Tyrone North substation, disconnect switches, bus structure and control hours with relaying/SCADA	11/30/2008	3.263	Q36
n1130	Philipsburg - Tyrone North - Install new tap structure on 115kV line for Q36 (Tyrone North - Phillipsburg)	11/30/2008	0.25	Q36
n1131	Westfall - Modify relay and control work at 115kV substation, includes installation of new line trap	11/30/2008	0.295	Q36

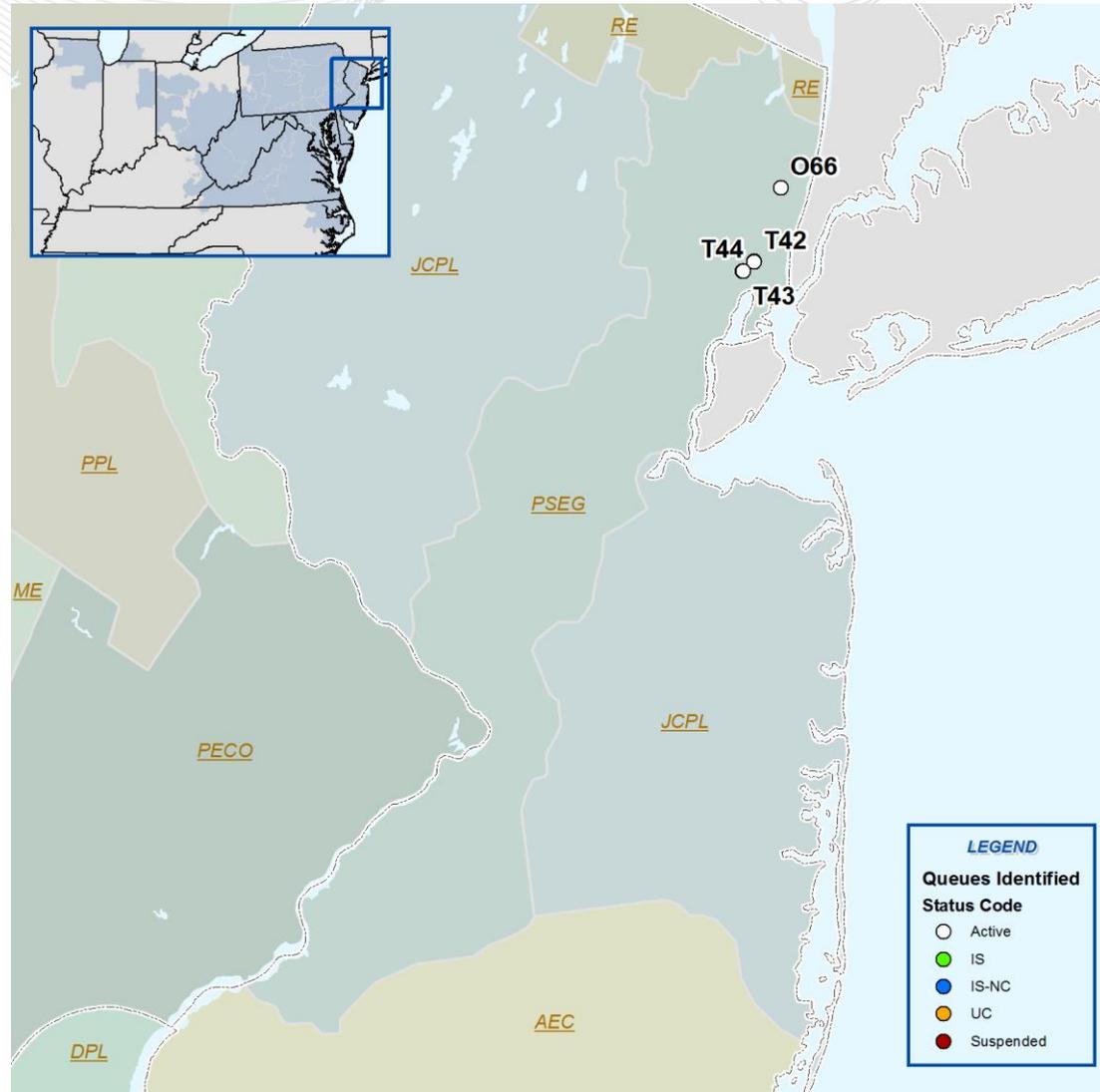
Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1132	Philipsburg - Modify relay and control work at 115kV substation, includes installation of new line trap	11/30/2008	0.295	Q36
n1133.1	Shawville - Replace CT circuit at the 115kV substation	11/30/2008	0.125	Q36
n1133.2	Shawville - Replace substation conductor at 115kV substation	11/30/2008	0.125	Q36
n1263	Q36 - Provide engineering oversight and comissioning support of the Interconnection customer substation including suppor tof protective relay installation	12/31/2008	0.064	Q36
n1093	Q53 - Construct new 115kV 3 breaker ring bus to include disconnect switches, line traps, bus structures and a control house w/ relaying and SCADA	12/15/2008	2.763	Q53
n1094	Summit - Upgrade relay and control equipment at the Summit 115kV substation for Q53	12/15/2008	0.253	Q53
n1095	Westfall - Upgrade relay and control equipment at the Westfall 115kV substation for Q53	12/15/2008	0.253	Q53
n1096	Summit - Q53 - Westfall - Install Fiber Optic cable from Summit 115kV substation to Q53 interconnection substatin and from Q53 to Westfall 115kV substation	12/15/2008	0.985	Q53
n1097	Summit - Westfall - Loop 115kV line into Q53 interconnection substation	12/15/2008	0.25	Q53
n1264	Q53 - Provide engineering oversight and commissioning support of the Interconnection customer substation including support of protective relay installation	12/31/2008	0.064	Q53

Queue Number	Project Name	MWC	MWE	Fuel Type
R17	Morgantown - Oak Grove 230kV	645	645	Natural Gas
S17	Talbert 230kV	225	225	Natural Gas



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1169	Kelson Ridge - Construct new 230kV substation	6/1/2012	0.75	R17
n1170	Kelson Ridge - Connect PEPCO feeders 23084 and 23086 into new 230kV substation	6/1/2012	1.96	R17
n1270	R17 - Remote relay, communications & distributed RTU work	6/1/2012	2.2	R17
n1258	Talbert - Convert to a nine breaker, breaker & 1/2 substation	12/31/2010	15	S17
n1259	Talbert - Install 2 deadends in the tower line and route the 230kV lines	12/31/2010	1	S17
n1260	Talbert - Install 12 remote terminal relays	12/31/2010	1.2	S17
n1261	Talbert - Install Telecommunications for relays	12/31/2010	1	S17

Queue Number	Project Name	MWC	MWE	Fuel Type
O66	Bergen 230kV	670	670	
T42	Kearny 138kV	79	79	Natural Gas
T43	Essex 230kV	178	178	Natural Gas
T44	Essex 230kV	205	205	Natural Gas



Upgrade ID	Description	In-Service Date	Cost Estimate \$M	Driver
n1035	Athenia - Bergen - build new 230 kV Parallel Circuit	6/1/2010	100	O66
n1231	Linden1 - Replace 138kV Breaker 1APA with 63 kA Symmetrical Breaker (including disconnect switches)	6/1/2010	0.5	T41
n1232	Essex34 - Replace 138kV Breaker 3PM with 80 kA Symmetrical Breaker	6/1/2010	1	T41
n1233	Essex34 - Replace 138kV Breaker 1PM with 80 kA Symmetrical Breaker	6/1/2010	1	T41
n1234	Linden1 - Replace 138kV Breaker 2BPB with 63 kA Symmetrical Breaker (including disconnect switches)	6/1/2010	1	T41
n1235	Essex - Replace 138kV Breaker 3LM with 80 kA Symmetrical Breaker	6/1/2011	1	T42
n1236	Essex - Replace 230kV Breaker 4LM with 80 kA Symmetrical Breaker	6/1/2010	1	T43
n1237	Essex - Replace 230kV Breaker 22H with 80 kA Symmetrical Breaker	6/1/2010	1	T43
n1238	North Milford - Replace 230kV Breaker 20H with 63 kA Symmetrical Breaker (including disconnect switches)	6/1/2011	0.5	T44

- Wrap up retool work for 2010 through 2013
- 2014 Analysis
  - Generation deliverability testing – in progress
  - Load deliverability testing – in progress
  - N-1-1
- Long-term planning will be completed once 2014 deliverability testing complete
- Subregional RTEP Committee meetings and TEAC meetings will be scheduled as we get through the 2014 analysis

# Questions or Issues?