

# December 31, 2017

<b>Projects Completed</b>	
<b>Project No.</b>	<b>Description</b>
432	Close the Cane Run Switching-Mill Creek 69 kV line by installing a 69kV breaker between West Co MSD #1 and #2
928	Change all of the LG&E 345/138 transformer voltage tap settings flat.
408	Increase the maximum operating temperature of the 336.4 MCM 19X AA conductor in the Ethel to Nachand 69 kV line (circuit 6670) to 212 deg. F.
448	Replace the 1590 MCM ACSR terminal equipment associated with breaker 117-754 at Brown Plant on the Brown Plant to Brown CT to Brown North 138 kV line with bundled 1590 MCM ACSR conductors
866	Replace the 600 amp hooksticks at West Cliff on the West Cliff to Shakertown 69kV line with 1200 amp equipment.
914 => 926	Install a 1% reactor at West Lexington on the West Lexington to Viley Rd to Haeffling 138 kV line, with a minimum 1200 amp Summer Emergency and 1500 amp winter emergency rating
913 => 925	Install a 1% reactor at West Lexington on the West Lexington to Haeffling 138 kV line, with a minimum 1200 amp Summer Emergency and 1500 amp winter emergency rating
75	Replace 69kV equipment rated less 690 amps summer emergency at Boyle Co associated with the Boyle Co to Lancaster 69kV line (breaker 101-604) with equipment capable of a minimum of 993 amps summer emergency.
881	Replace the 161kV terminal equipment rated equal to or less than 1200 amps WE at Elihu associated with breaker (096-814) on the Elihu to Alcalde 161 kV line with equipment capable of a minimum of 1363.
917	Replace the existing 138/69kV transformer at Hardin Co with a 138/69 kV, 185 MVA transformer. Replace the 69 kV Breaker and terminal equipment rated less than 2000 amps WE associated with breaker 178-608 at Hardin County with equipment at minimum capable of 2686 amps WE.
921	Increase the MOT of the 3.29 mile of 795 MCM 26X7 SSAC in the Ghent to Fairview 138 kV line from 195°F to 240°F.
924	Replace 138/69 kV, with a 90 MVA transformer at Rodburn; put existing Rodburn 60 MVA at Farmers; replace two breakers at Roduburn due to breaker duty overloads.
928	Change all of the LG&E 345/138 kV transformer voltage tap settings flat.
1054	Disable reclosing on multiple lines throughout the system to remove angular and voltage instability.
1055	The clearing time of several breakers on the system to be checked to ensure that they are 4.5 cycles or below.
1060	For several locations throughout the system it has been found that multiple facilities will have voltage and stability issues under certain disturbances. These issues can be resolved by disabling reclosing on the associated protective devices. It is recommended that the protective devices on these facilities have the reclosing disabled if it is not already. This will need to occur on both ends of the line.
1072	Disable reclosing on both ends of outlined facilities if not already disabled.
929	Replace the Farmers 138/69 kV transformer, using the Transformer removed from service at Rodburn (base 60 MVA). The Rodburn transformer is expected to be available in Spring 2017, after it is replaced with a 90 MVA transformer.

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<b>Construction Status</b>		
Project Number	DESCRIPTION	Notes
524	Replace 138kV terminal equipment rated less than or equal to 993 Amps (237 MVA) summer emergency rating associated with the Hardinsburg to Black Branch 138kV line with equipment capable of a minimum of 1109 Amps (265 MVA) summer emergency rating.	Equipment did not arrive when scheduled, project delayed till 1st quarter 2018
667	Replace 138kV terminal equipment rated less than or equal to 1200 Amps (287 MVA) winter emergency rating associated with the Hardinsburg to Black Branch 138kV line with equipment capable of a minimum of 1363 Amps (326 MVA) winter emergency rating.	Equipment did not arrive when scheduled, project delayed till 1st quarter 2018
865	Replace 69kV terminal equipment rated less than or equal to 600 Amps (72 MVA) winter emergency rating associated with the Bonds Mill to Lawrenceburg Tap 69kV line with equipment capable of a minimum of 806 Amps (96 MVA) winter emergency rating.	Due to the 2018 TEP need date post poned to beyond 10 years, project put into idle status.
894	Increase the MOT of the 397.5 ACSR in the Hardesty A to Princeton section of the Princeton to Walker 69 kV line from 130F to 140F (15.12 mi)	Expect Completion Date October 2018
895	Increase the MOT of the 397.5 ACSR in the Hardesty A to Walker section of the Princeton to Walker 69 kV line from 130F to 140F (7.94 mi)	Expect Completion Date October 2018
882	Replace the 69 kV terminal equipment rated less than or equal to 791 Amps (95 MVA) summer emergency rating associated with the Watterson #1 138/69 kV transformer capable of a minimum of 1078 Amps (129 MVA) summer emergency rating.	Expect Completion date February 2018
406	Install a 69 kV, 9 MVAR capacitor bank at Paint Lick.	Expect Completion November 2018
345	Increase the MOT of the 266 kCM 26X7 ACSR in the Greensburg-Campbellsville EKPC section of the Green County EKPC-Taylor County 69 kV line from 176F to 212F (8.9 miles).	Expect Completion May 2019
756	Increase the MOT of the 397.5 MCM 26X7 ACSR conductor (2.27 mi. @ 125°F ) in the Clinton - Clinton 581 section of the Clinton - Wickliff 69 kV line, to a minimum of 135 deg.F.	Expect Completion May 2019
694	Replace the 69 kV terminal equipment rated equal to or less than 688 amps SE at Georgetown with equipment capable of a minimum of 992 amps SE, and increase the MOT of the 556.5 ACSR line conductor in the Adams to Georgetown section of the Adams to Haefling 69 kV line to 212°F.	Expect Completion May 2019
932	Replace 1.94 miles of 266.8 MCM 18X1 ACSR and 0.27 miles of 266.8 MCM 26X7 ACSR conductors in the Loudon Avenue to Hume Road Tap section of the Loudon Avenue - Winchester 69 kV line, with 397 MCM 26X7 ACSR or better conductor.	Expect Completion November 2019

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<b>Construction Status</b>		
Project Number	DESCRIPTION	Notes
1050	Add redundant protection system to Brown Plant 138kV bus or reduce back up clearing time on both Brown Plant-West Cliff 138 kV lines to 25 cycles	Expect completion 1/31/2018
1056	Confirm or shorten the clearing time to 12 cycles if there is a Single-phase-to-ground fault on the Brown 138/345kV transformer and breaker 152-708 fails to open.	Expect completion 1/31/2018
1057	Confirm or shorten the clearing time to 15 cycles if there is a Single-phase-to-ground fault on Ghent – Trimble 345kV line (close in on Ghent 345kV bus) and breaker 165-932 fails to open.	Expect completion 1/31/2018
1058	Confirm or shorten the clearing time to 15 cycles if there is a Single-phase-to-ground fault on Ghent – Trimble 345kV line (close in on Ghent 345kV bus) and breaker 165-934 fails to open.	Expect completion 1/31/2018
1059	Take circuit 4541 circuit out of service no later than 20 cycles after fault occurs; if there is a Bus differential failure (Single-line-to-ground) with protection failure on Trimble County 345kV bus.	Expect completion 1/31/2018
1062	Take Trimble circuits 4544 and 4572 out of service no later than 20 cycles after fault occurs; if there is a bus differential failure (Single-line-to-ground) with protection failure on Trimble County 345kV bus.	Expect completion 1/31/2018
1066	Reduce over speed clearing time for Brown CT Units.	Expect completion 1/1/2019
1067	Reduce over speed clearing time for Ghent Units	Expect completion 1/1/2019
1068	Add redundant bus differential and lockout relays at Cane Run 138 kV buses. A fault on 138 kV bus followed by relay or protection failure causes low voltage violations and generators to slip a pole.	Expect completion 1/1/2019
1070	Add redundant bus differential and lockout relays at West Lexington 138 kV buses. A fault on 138 kV bus followed by relay or protection failure causes low voltage violations and generator instability.	Expect completion 1/1/2019
1073	Add redundant bus differential and lockout relays at the Middletown 345 kV bus. A fault on 345 kV bus followed by relay or protection failure causes low voltage violations and overloads.	Expect completion 1/1/2019
1074	Add redundant bus differential and lockout relays at Trimble Co. 345 kV bus. A fault on 345 kV bus followed by relay or protection failure causes low voltage violations and overloads.	Expect completion 1/1/2019
1050	Reduce clearing time on both Brown Plant – West Cliff 138 kV lines to 25 cycles after failure of bus differential relay.	Expect completion 1/31/2018

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Construction Status		
Project Number	DESCRIPTION	Notes
931	Install a 0.66% 345 kV reactor at Trimble County in the Trimble County - Clifty 345 kV line.	Expect Completion May 2019