PECO Expansion Plan for DOM Window 2023

General Information

Proposing entity name	PE
Does the entity who is submitting this proposal intend to be the Designated Entity for this proposed project?	Yes
Joint proposal ID	660
Company proposal ID	
PJM Proposal ID	344
Project title	PECO Expansion Plan for DOM Window 2023
Project description	This proposal has been designed to 1) bring the significant generation interconnected at or near PECO's Peach Bottom substation through the BGE territory 2) direct the power flow around BGE'S territory toward High Ridge substation in the west and Riverside substation in the east to aid in sending power towards the new load areas and 3) provide reactive support in PEPCO with a new STATCOM at Brighton amongst other upgrades and 4) enhance the existing FirstEnergy, PEPCO and Dominion seam through a collaboratively developed Joint Proposal. In particular, the Joint Solution between PEPCO, Dominion, and FirstEnergy rebuilds the Doubs to Goose Creek corridor to allow for an additional 500kV line from Doubs to Goose Creek and an additional 230kV circuit from Dickerson Station H to Ed's Ferry. Exelon MidAtlantic has developed West Cooper Max, including the Joint Solution, to not only compliment Dominion's and FirstEnergy's proposals (PJM proposal ids 2022-W3-129 & 2022-W3-129, but the Exelon MidAtlantic, Dominion, and FirstEnergy proposals together are designed to address all the PJM identified flow-gate violations in the three collective zones. Notwithstanding the collaboration, the West Cooper Max proposal maximizes the use of Exelon MidAtlantic's existing transmission right-of-way such that of the 120+ miles of new or rebuilt transmission facilities envisioned for proposal, there is less than 2 miles of new ROW needed. Essentially, 98.3% of the new or rebuilt transmission facilities within this proposal is within existing ROW. This new ROW, primarily in the PECO zone is adjacent to existing Exelon owned transmission lines and substations near Cooper and Peach Bottom. Separately, this option does come with one alternative approach for establishing three (3) 500kV paths from Peach Bottom area toward BGE footprint.
Email	Proprietary Information
Project in-service date	12/2029

Tie-line impact	Yes
Interregional project	No
Is the proposer offering a binding cap on capital costs?	Yes
Additional benefits	Proprietary Information

Project Components

1. New 500kV 4 Leg BAAH Substation (West Cooper): PECO
2. New 230kV Line from Cooper to West Cooper: PECO
3. Peach Bottom North Expansion: PECO
4. Peach Bottom North (PECO) - Graceton (BGE) New 500kV Line: PECO Portion
5. West Cooper - Peach Bottom South New 500kV Line: PECO
6. Rebuild 5012 500kV Line and Cut-in West Cooper (Peach Bottom South - West Cooper): PECO
7. Rebuild 5012 500kV Line and Cut-in West Cooper (Graceton - West Cooper): PECO Portion
8. New BAAH Leg at Peach Bottom North: PECO
9. Peach Bottom North (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion
10. West Cooper (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion
11. New Peach Bottom West Substation: PECO
12. Cooper - Peach Bottom West New 230 kV Line: PECO
13. Peach Bottom South Substation Upgrades: PECO
14. Calpine-Peach Bottom South 500 kV Line Cut In: PECO
15. Peach Bottom South Substation Bypass: PECO
16. Rebuild 5012 Peach Bottom South (PECO)- Conastone (BGE) 500 kV Line: PECO Portion
17. Cut into 22007 Peach Bottom North-Muddy Run 230 kV Line: PECO

Greenfield Substation Component

Component title	New 500kV 4 Leg BAAH Substation (West Cooper): PECO
Project description	New 500 kV 4 leg BAAH Substation named West Cooper. Refer to substation/equipment descriptions for more details.

Substation name	West Cooper
Substation description	New 4 leg BAAH Substation to tie into two existing 500 kV lines and one existing 230 kV line in the area. Additionally create two new 500 kV lines to BGE and one new 500 kV line to Peach Bottom South. New 500 kV lines to BGE will be in existing ROW, new 500 kV line to Peach Bottom South will be in new ROW alongside existing routes.
Nominal voltage	AC
Nominal voltage	500

Transformer Information

	Name	Capacity (MVA)
Transformer	AT 1	200

	High Side	Low Side	Tertiary
Voltage (kV)	500	230	13

Major equipment description	14 - 5000A 500 kV live tank breakers. 34 - 500 kV disconnect switches. Autotransformer feeding Cooper distribution substation.

	Normal ratings	Emergency ratings
Summer (MVA)	3900.000000	4350.000000
Winter (MVA)	4612.000000	5025.000000

Environmental assessment	Minimal environmental impact associated with new substation. All oil containing equipment would be mitigated in accordance with established company processes.
Outreach plan	External affairs will reach out to neighboring properties and discuss any potential impacts of the new substation.
Land acquisition plan	Real estate will engage property owners in geographical area near Cooper substation to find adequate property.
Construction responsibility	PECO

Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$68,753,954.72
Component cost (in-service year)	$82,092,221.95

Greenfield Transmission Line Component

Component title	New 230kV Line from Cooper to West Cooper: PECO
Project description	New 230 kV line in new easement from Cooper to West Cooper. Line is fed from new autotransformer in West Cooper and will travel through new property purchased in fee and new easement to become the second feed to Cooper distribution substation. Existing second feed is being removed to provide path for new 500 kV lines to BGE.
Point A	Cooper
Point B	West Cooper
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	677.000000	865.000000

Winter (MVA)	721.000000	904.000000
Conductor size and type	958kcm 26/19 ACCR/TW “Suwannee” conductor	
Nominal voltage	AC	
Nominal voltage	230	
Line construction type	Overhead	
General route description	Short 230 kV line running from existing Cooper substation to new West Cooper substation. Line is fed from new autotransformer in West Cooper and will travel through new property purchased in fee and new easement to become the second feed to Cooper distribution substation.	
Terrain description	Hilly farm fields.	
Right-of-way width by segment	Substation land owned in fee.	
Electrical transmission infrastructure crossings	N/A	
Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.	
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.	
Tower characteristics	H-Frame Horizontal Build.	
Construction responsibility	PECO	
Benefits/Comments	Proprietary Information	
Component Cost Details - In Current Year $		
Engineering & design	detailed cost	
Permitting / routing / siting	detailed cost	
ROW / land acquisition	detailed cost	
Materials & equipment	detailed cost	

Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$1,964,398.70
Component cost (in-service year)	$2,211,912.94

Substation Upgrade Component

Component title	Peach Bottom North Expansion: PECO
Project description	Expand Peach Bottom North yard to accommodate two new 500kV circuits to BGE. Refer to substation upgrade scope and new equipment description below.
Substation name	Peach Bottom North
Substation zone	PECO
Substation upgrade scope	Add an additional Breaker and a Half leg at Peach Bottom North with four breakers. Add two end bus sectionalizing breakers. Create two new 500 kV terminals for lines to BGE. Replace bus support structures where new BAAH leg ties in. Expand and upgrade ground grid and build new control house large enough to move entire substation into.

Transformer Information

None

New equipment description	500 kV live tank breakers (6), 500 kV disconnect switches (13), new equipment will be constructed with 6" IPS.
Substation assumptions	Additional land is assumed.
Real-estate description	6 Acres of additional space needed for substation expansion. Real estate team will work to acquire additional land needed.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$33,000,663.02
Component cost (in-service year)	$39,095,620.71

Greenfield Transmission Line Component

Component title	Peach Bottom North (PECO) - Graceton (BGE) New 500kV Line: PECO Portion
Project description	New 500 kV line on monopole single circuit vertical build structures within new ROW between Peach Bottom North and Cooper transitioning to existing ROW from Cooper to Graceton. One of two new 500 kV lines to BGE.
Point A	Peach Bottom North
Point B	Graceton
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase

Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	Within new ROW to Cooper between Peach Bottom North and Cooper. Within existing ROW between Cooper and Graceton.
Terrain description	Hilly farm fields within or next to existing ROW.
Right-of-way width by segment	ROW will have 275 ft of existing ROW in the majority of the path and require an additional 250 ft of new ROW alongside existing ROW between Cooper and Peach Bottom North.
Electrical transmission infrastructure crossings	N/A
Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.
Tower characteristics	Monopole single circuit vertical build.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost

Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$13,054,422.11
Component cost (in-service year)	$15,824,417.91

Greenfield Transmission Line Component

Component title	West Cooper - Peach Bottom South New 500kV Line: PECO
Project description	New 500 kV line on single circuit structures within new ROW between Peach Bottom North and West Cooper. Will repurpose existing tie #1 transmission line between Peach Bottom north and Peach Bottom South. This is an additional feed line to West Cooper.
Point A	West Cooper
Point B	Peach Bottom South
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	New ROW along existing 5012 ROW and repurposing existing Peach Bottom Tie line #1.
Terrain description	Hilly farm fields next to existing ROW between Peach Bottom North and West Cooper.
Right-of-way width by segment	250 ft expansion on 5012 ROW for 1.25 miles. Utilizes existing transmission structures between Peach Bottom North and Peach Bottom South.

Electrical transmission infrastructure crossings	230 kV Cooper - Nottingham (22008)
Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.
Tower characteristics	Monopole single circuit vertical build.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$5,500,316.38
Component cost (in-service year)	$6,374,866.68

Transmission Line Upgrade Component

Component title	Rebuild 5012 500kV Line and Cut-in West Cooper (Peach Bottom South - West Cooper): PECO
Project description	Rebuild 5012 500 kV line on single circuit structures within existing ROW and cut into West Cooper Substation.

Impacted transmission line	Peach Bottom South (PECO) - Conastone (BGE) 500kV Line
Point A	Peach Bottom South
Point B	West Cooper
Point C	
Terrain description	Hilly farm fields within existing ROW.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2493 KCMIL 54/37 ACAR
Hardware plan description	Install new toughened glass insulators and standard connection hardware.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures are 52 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase
Shield wire size and type	19 #9 Alomoweld and OPGW (Optical ground wire)
Rebuild line length	2 Miles
Rebuild portion description	Rebuild entire portion of 5012 line between Peach Bottom South and West Cooper. All structure will be replaced, new structures will be horizontal build lattice towers.
Right of way	Existing ROW will be used.

Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$7,857,594.82
Component cost (in-service year)	$9,381,968.22

Transmission Line Upgrade Component

Component title	Rebuild 5012 500kV Line and Cut-in West Cooper (Graceton - West Cooper): PECO Portion
Project description	Rebuild 5012 500 kV line on single circuit structures within existing ROW and cut into West Cooper Substation.
Impacted transmission line	Peach Bottom (PECO) - Conastone (BGE) 500kV Line
Point A	Graceton
Point B	West Cooper
Point C	
Terrain description	Hilly farm fields in existing ROW.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2493 KCMIL 54/37 ACAR
Hardware plan description	Install new toughened glass insulators and standard connection hardware.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures are 52 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase
Shield wire size and type	19 #9 Alomoweld and OPGW (Optical ground wire)
Rebuild line length	6 Miles
Rebuild portion description	Rebuild entire portion of 5012 line between West Cooper and Graceton up to the PA/MD state line. All structure will be replaced, new structures will be single circuit steel monopoles.
Right of way	Existing ROW will be used.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost

ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$29,858,860.34
Component cost (in-service year)	$35,651,479.25

Substation Upgrade Component

Component title	New BAAH Leg at Peach Bottom North: PECO
Project description	New BAAH leg will be added at Peach Bottom North to accommodate a new 500 kV line from Peach Bottom to Graceton.
Substation name	Peach Bottom North
Substation zone	PECO
Substation upgrade scope	New three breaker BAAH leg at Peach Bottom North substation. A new control house will be constructed. Expansion of the station and associated infrastructure.

Transformer Information

None

New equipment description	500 kV live tank breakers (3), 500 kV disconnect switches (8), all new equipment will be constructed with 6" IPS.
Substation assumptions	Additional land is assumed.
Real-estate description	6 Acres of additional space needed for substation expansion. Real estate team will work to acquire additional land needed.
Construction responsibility	PECO

Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$25,930,062.93
Component cost (in-service year)	$30,960,495.14

Greenfield Transmission Line Component

Component title	Peach Bottom North (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion
Project description	New 500 kV line on single circuit structures within existing ROW between High Ridge and Cooper and within new ROW between Cooper and Peach Bottom North.
Point A	Peach Bottom North
Point B	High Ridge
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	Within new ROW between Peach Bottom North and Cooper. Within existing ROW from Cooper-High Ridge.
Terrain description	Hilly farm fields.
Right-of-way width by segment	ROW will have 275 ft of existing ROW and 250 ft of new ROW.
Electrical transmission infrastructure crossings	N/A
Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.
Tower characteristics	Monopole single circuit vertical build.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost

Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$13,054,422.11
Component cost (in-service year)	$15,824,417.91

Greenfield Transmission Line Component

Component title	West Cooper (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion
Project description	New 500 kV line on single circuit structures within existing ROW between new West Cooper 500 kV substation and High Ridge.
Point A	West Cooper
Point B	High Ridge
Point C	

	Normal ratings	Emergency ratings
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	795 kcmil “Mallard” ACSS Three bundle per Phase
Nominal voltage	AC
Nominal voltage	500
Line construction type	Overhead
General route description	Within existing 5012 ROW.
Terrain description	Hilly farm fields within existing ROW.
Right-of-way width by segment	ROW width is 275 ft.
Electrical transmission infrastructure crossings	N/A

Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.
Tower characteristics	Monopole single circuit vertical build.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$13,357,911.20
Component cost (in-service year)	$15,949,345.98

Greenfield Substation Component

Component title	New Peach Bottom West Substation: PECO
Project description	New Peach Bottom West substation will be a three breaker 230 kV ring bus located to the West of Peach Bottom. This will cut into existing 230 kV lines to provide second feed to Cooper distribution substation. Existing second feed from BGE is being removed to provide space for new 500 kV lines in existing ROW.

Substation name	Peach Bottom West
Substation description	New 230 kV three breaker ring bus located near Peach Bottom. New substation will be cut into 22007 Peach Bottom-Muddy run 230 kV line.
Nominal voltage	AC
Nominal voltage	230

Transformer Information

None

Major equipment description	3-230 kV dead tank breakers, 9-230 kV disconnect switches.

	Normal ratings	**Emergency ratings**
Summer (MVA)	731.000000	885.000000
Winter (MVA)	822.000000	978.000000

Environmental assessment	Minimal environmental impact associated with new substation. All oil containing equipment would be mitigated in accordance with established company processes.
Outreach plan	External affairs will reach out to neighboring properties and discuss any potential impacts of the new substation.
Land acquisition plan	Real estate will engage property owners in geographical area near Peach Bottom North substation to find adequate property.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost

Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$27,748,153.75
Component cost (in-service year)	$31,769,237.98

Greenfield Transmission Line Component

Component title	Cooper - Peach Bottom West New 230 kV Line: PECO
Project description	New 230 kV line running from New Peach Bottom West substation to Cooper distribution substation. New line will be routed in a mix of existing and new ROW alongside existing 230 kV line.
Point A	Cooper
Point B	Peach Bottom West
Point C	

	Normal ratings	**Emergency ratings**
Summer (MVA)	731.000000	885.000000
Winter (MVA)	822.000000	978.000000

Conductor size and type	LC 1590 KCMIL 54/19 ACSR (Falcon)
Nominal voltage	AC
Nominal voltage	230
Line construction type	Overhead
General route description	Within a mix of new and existing ROW between Peach Bottom West and Cooper.

Terrain description	Hilly farm fields.
Right-of-way width by segment	Existing ROW width is 275 ft
Electrical transmission infrastructure crossings	23006, 5007, New 500 kV line out of Peach Bottom North
Civil infrastructure/major waterway facility crossing plan	Secondary Roadways crossings following company standard roadway clearances.
Environmental impacts	The study area is primarily agricultural. PECO will begin coordination with local, state and federal agencies in the early stages of the project to identify potential mitigation and/or avoidance measures. Additionally, the majority of the project parallels existing extra-high voltage lines which will minimize new environmental impacts.
Tower characteristics	Monopole double circuit vertical build.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$4,587,966.68
Component cost (in-service year)	$5,317,453.37

Substation Upgrade Component

Component title	Peach Bottom South Substation Upgrades: PECO
Project description	Peach Bottom South Substation upgrades. See Substation scope/equipment description for more details.
Substation name	Peach Bottom South
Substation zone	PECO
Substation upgrade scope	Upgrade bus equipment and disconnects at Peach Bottom South to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.

Transformer Information

None

New equipment description	7 - Disconnect Switches, 12 - Breaker drops, 1 - Breaker, 21 - Free Standing CTs
Substation assumptions	No Substation Assumptions Made.
Real-estate description	Upgrades will not require any additional real-estate.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost

Total component cost	$12,286,571.40
Component cost (in-service year)	$14,893,569.80

Transmission Line Upgrade Component

Component title	Calpine-Peach Bottom South 500 kV Line Cut In: PECO
Project description	Cut into the 5034 Calpine-Peach Bottom South 500 kV line and have line terminate at new West Cooper substation.
Impacted transmission line	Calpine - Peach Bottom South
Point A	Calpine
Point B	West Cooper
Point C	
Terrain description	Hilly farm fields within existing ROW.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2493 KCMIL 54/37 ACAR
Hardware plan description	New toughened glass insulators and standard connection hardware at location of cut in.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures are 13 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	2920.000000	3707.000000
Winter (MVA)	3592.000000	4403.000000

Conductor size and type	2493 KCMIL 54/37 ACAR
Shield wire size and type	20 #9 Alomoweld and OPGW (Optical ground wire)
Rebuild line length	1.5 Miles
Rebuild portion description	Cut into the existing 5034 500 kV line and tie into the new West Cooper substation.
Right of way	Utilizing existing ROW.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$1,571,518.97
Component cost (in-service year)	$1,821,390.48

Transmission Line Upgrade Component

Component title	Peach Bottom South Substation Bypass: PECO

Project description	Tie Calpine-Peach Bottom South line and Peach Bottom South-Rock Springs line together removing Peach Bottom South terminations from each line. West Cooper will be cut into the Calpine-Peach Bottom South line (Separate Component). Final line configuration will be Calpine-West Cooper and West Cooper-Rock Springs bypassing Peach Bottom South substation.
Impacted transmission line	Calpine-Peach Bottom South 500 kV Line/ Peach Bottom South-Rock Springs 500 kV line
Point A	West Cooper
Point B	Rock Springs
Point C	
Terrain description	Line runs through hilly Farm Fields and crosses over the Schuylkill River. Only impacted part of the lines is near Peach Bottom South substation.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2493 KCMIL 54/37 ACAR
Hardware plan description	New toughened glass insulators and standard connection hardware at location of bypass.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures on the 5034 line are 13 years old. Structures on the 5014 line are 52 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	2920.000000	3707.000000
Winter (MVA)	3592.000000	4403.000000
Conductor size and type	2493 KCMIL 54/37 ACAR	
Shield wire size and type	21 #9 Alomoweld and OPGW (Optical ground wire)	

Rebuild line length	8 Miles
Rebuild portion description	Connect the 500 kV 5034 and 500 kV 5014 lines to bypass Peach Bottom South Substation allowing Peach Bottom South terminals to be reconfigured.
Right of way	New 0.1-mile ROW required around southern edge of Peach bottom South.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information
Component Cost Details - In Current Year $	
Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$785,759.48
Component cost (in-service year)	$884,765.18

Transmission Line Upgrade Component

Component title	Rebuild 5012 Peach Bottom South (PECO)- Conastone (BGE) 500 kV Line: PECO Portion
Project description	Rebuild 5012 Peach Bottom South-Conastone 500 kV line to achieve higher ratings required to alleviate facilities that were identified as overloaded in this window.
Impacted transmission line	5012 Peach Bottom South - Conastone: PECO
Point A	Peach Bottom South

Point B	Conastone
Point C	
Terrain description	Hilly farm fields.

Existing Line Physical Characteristics

Operating voltage	500
Conductor size and type	2493 KCMIL 54/37 ACAR
Hardware plan description	New toughened glass insulators and standard connection hardware.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures are 52 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	500.000000	500.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	4427.000000	5165.000000
Winter (MVA)	4644.000000	5387.000000

Conductor size and type	3 x 795kcm 30/19 ACSS/TW
Shield wire size and type	19 #9 Alomoweld and OPGW (Optical ground wire)
Rebuild line length	6.2 Miles
Rebuild portion description	Rebuild entire portion of 5012 line between Peach Bottom South and Conastone. All structure will be replaced, new structures will be single circuit steel monopoles.
Right of way	Utilizing existing 275 ft of ROW.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost
Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$43,002,999.90
Component cost (in-service year)	$52,127,494.29

Transmission Line Upgrade Component

Component title	Cut into 22007 Peach Bottom North-Muddy Run 230 kV Line: PECO
Project description	Cut into 22007 Peach Bottom North-Muddy Run 230 kV Line and tie in new Peach Bottom West substation.
Impacted transmission line	Peach Bottom North-Muddy Run 230 kV line
Point A	Peach Bottom North
Point B	Muddy Run
Point C	
Terrain description	Hilly farm fields.

Existing Line Physical Characteristics

Operating voltage	230

Conductor size and type	LC 1590 KCMIL 54/19 ACSR (Falcon)
Hardware plan description	New toughened glass insulators and standard connection hardware.
Tower line characteristics	Horizontal build lattice tower with shield wire. Structures are 27 years old.

Proposed Line Characteristics

	Designed	**Operating**
Voltage (kV)	230.000000	230.000000
	Normal ratings	**Emergency ratings**
Summer (MVA)	731.000000	885.000000
Winter (MVA)	822.000000	978.000000

Conductor size and type	LC 1590 KCMIL 54/19 ACSR (Falcon)
Shield wire size and type	Shield wire will not need to be replaced.
Rebuild line length	4.6 Miles
Rebuild portion description	Cut into 22007 line and tie in new Peach Bottom West 230 kV substation.
Right of way	Using existing ROW transitioning into new property purchased for Peach Bottom West.
Construction responsibility	PECO
Benefits/Comments	Proprietary Information

Component Cost Details - In Current Year $

Engineering & design	detailed cost
Permitting / routing / siting	detailed cost
ROW / land acquisition	detailed cost
Materials & equipment	detailed cost

Construction & commissioning	detailed cost
Construction management	detailed cost
Overheads & miscellaneous costs	detailed cost
Contingency	detailed cost
Total component cost	$539,995.00
Component cost (in-service year)	$635,384.76

Congestion Drivers

None

Existing Flowgates

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-ST249	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-LD-ST11	200004	CNASTONE	200064	PCHBTM1S	1	500/500	232/230	Load Deliverability	Included
2022W3-N1-ST248	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-W38	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S177	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S119	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-LD-ST13	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S203	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST250	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1	Included
2022W3-GD-W93	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-LD-ST12	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-GD-S281	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Summer Gen Deliv	Included
2022W3-GD-W85	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-N1-ST64	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-LD-ST5	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST4	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST7	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Load Deliverability	Included
2022W3-LD-ST6	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST8	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Load Deliverability	Included
2022W3-GD-S1682	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-N1-ST2462	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S1652	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W1382	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S1692	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S1691	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-N1-ST1782	208069	PPL-BGE TIE	220964	GRACETON	1	230/230	229/232	Summer N-1 Thermal	Included
2022W3-N1-ST2472	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1	Included
2022W3-GD-S73	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S72	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-W942	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S135	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W1002	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-W949	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W73	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W50	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S84	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W74	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W51	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S139	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S85	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W132	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD-S1772	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-ST106	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S127	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-N1-ST65	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD_128	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD-W987	200065	PCHBTM2S	200064	PCHBTM1S	Z2	500	230	Winter Gen Deliv	Included
2022W3-GD_122	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Light Load Gen Deliv	Included
2022W3-GD-W65	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-N1-ST101	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W68	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W995	200065	PCHBTM2S	200064	PCHBTM1S	Z1	500	230	Winter Gen Deliv	Included
2022W3-N1-ST102	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-W67	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-N1-ST103	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S1662	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST104	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Summer N-1 Thermal	Included
2022W3-N1-ST105	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Summer N-1 Thermal	Included
2022W3-GD-S147	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W831	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W832	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S326	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W1024	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S155	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S95	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S2038	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S96	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W1022	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S312	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-N1-ST109	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S170	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S166	213869	PCHBTMTP	214087	COOPER2	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W101	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-N1-ST231	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Summer N-1 Thermal	Included
2022W3-GD-W100	223938	DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-GD-S91	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S90	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S179	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S164	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-S179	220962	NWEST311	220972	GRANITE1	1	230	232	Summer Gen Deliv	Included
2022W3-GD-W86	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-N1-ST129	221092	FIVE.FOR	221096	ROCKRGE1	1	115/115	232/232	Summer N-1 Thermal	Included
2022W3-GD-S171	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W887	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S171	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W841	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W842	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S170	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-W81	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W115	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S181	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S181	223938	DICKH230	223937	DICK 230	2	230	233	Summer Gen Deliv	Included
2022W3-GD-S103	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W883	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-S104	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S204	221092	FIVE.FOR	221096	ROCKRGE1	1	115	232	Summer Gen Deliv	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-S2052	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S1721	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W93	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S1720	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S2062	221090	GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-GD-S1741	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W95	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S1712	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-GD-W138	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W79	223938	DICKH230	223937	DICK 230	2	230	233	Winter Gen Deliv	Included
2022W3-GD-W891	208071	SAHA34TP	208069	PPL-BGE TIE	1	230	229	Winter Gen Deliv	Included
2022W3-GD-W892	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S1822	220961	NWEST326	220973	GRANITE6	1	230	232	Summer Gen Deliv	Included
2022W3-GD-S1728	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S1727	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-WT1922	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S1882	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-LD-ST15	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-N1-WT2021	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S2053	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-LD-ST14	200064	PCHBTM1S	200004	CNASTONE	1	500/500	230/232	Load Deliverability	Included
2022W3-N1-WT1923	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST17	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-WT2023	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST16	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-N1-WT2022	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S3462	200065	PCHBTM2S	200066	PCHBTM1N	2	500	230	Summer Gen Deliv	Included
2022W3-N1-ST184	208071	SAHA34TP	208069	PPL-BGE TIE	1	230/230	229/229	Summer N-1 Thermal	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-GD-W96	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-W900	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W97	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-S232	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-N1-WT192	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-N1-WT192	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Winter N-1 Thermal	Included
2022W3-GD-S173	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-W798	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S201	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W160	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-S202	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-W794	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-GD-S247	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Summer Gen Deliv	Included
2022W3-GD-S105	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Summer Gen Deliv	Included
2022W3-GD-W108	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Winter Gen Deliv	Included
2022W3-GD-W799	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Winter Gen Deliv	Included
2022W3-GD-W15	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Winter Gen Deliv	Included
2022W3-GD-S214	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-GD-W910	213869	PCHBTMTP	214087	COOPER2	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W16	213846	NOTTREAC	213869	PCHBTMTP	1	230	230	Winter Gen Deliv	Included
2022W3-GD-W795	223938	DICKH230	223937	DICK 230	1	230	233	Winter Gen Deliv	Included
2022W3-GD-S260	208048	OTCR	208047	PPL-BGE TIE	1	230	229	Summer Gen Deliv	Included
2022W3-GD-W956	214084	COOPER	220964	GRACETON	1	230	230/232	Winter Gen Deliv	Included
2022W3-GD-S2063	221090	GLENARM2	221089	WINDYED1	1	115	232	Summer Gen Deliv	Included
2022W3-LD-ST19	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included
2022W3-GD-W906	208069	PPL-BGE TIE	220964	GRACETON	1	230	229/232	Winter Gen Deliv	Included
2022W3-N1-WT202	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST18	200004	CNASTONE	200003	BRIGHTON	1	500/500	232/233	Load Deliverability	Included

FG #	Fr Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type	Status
2022W3-N1-WT2021	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST21	200003	BRIGHTON	200004	CNASTONE	1	500/500	233/232	Load Deliverability	Included
2022W3-LD-ST20	208047	PPL-BGE TIE	220963	CONASTON	1	230/230	229/232	Load Deliverability	Included
2022W3-N1-WT2021	223938	DICKH230	223937	DICK 230	1	230/230	233/233	Winter N-1 Thermal	Included
2022W3-LD-ST22	208048	OTCR	208047	PPL-BGE TIE	1	230/230	229/229	Load Deliverability	Included
2022W3-GD-S81N	200004	CNASTONE	200003	BRIGHTON	1	500	233/232	Summer Gen Deliv	Included
2022W3-GD-S221	214084	COOPER	220964	GRACETON	1	230	230/232	Summer Gen Deliv	Included
2022W3-GD-S1682	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-W920	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-GD-S1688	223938	DICKH230	223937	DICK 230	1	230	233	Summer Gen Deliv	Included
2022W3-GD-S1658	213844	NOTTNGHM	213846	NOTTREAC	1	230	230	Summer Gen Deliv	Included
2022W3-GD-S1738	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-GD-S1738	223937	DICK 230	314290	6EDFERRY	1	230	233/345	Summer Gen Deliv	Included
2022W3-LD-ST1	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-LD-ST3	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-GD-W114	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Winter Gen Deliv	Included
2022W3-LD-ST2	223938	DICKH230	223937	DICK 230	2	230/230	233/233	Load Deliverability	Included
2022W3-GD-W8062	208047	PPL-BGE TIE	220963	CONASTON	1	230	229/232	Winter Gen Deliv	Included
2022W3-GD-S76N	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-GD-S1651	200064	PCHBTM1S	200004	CNASTONE	1	500	232/230	Summer Gen Deliv	Included
2022W3-N1-ST201	223937	DICK 230	314290	6EDFERRY	1	230/230	233/345	Summer N-1 Thermal	Included

New Flowgates

None

Financial Information

Capital spend start date 01/2024

Construction start date	11/2025
Project Duration (In Months)	71

Cost Containment Commitment

Cost cap (in current year)	Proprietary Information
Cost cap (in-service year)	Proprietary Information

Components covered by cost containment

1. New 500kV 4 Leg BAAH Substation (West Cooper): PECO - PECO
2. New 230kV Line from Cooper to West Cooper: PECO - PECO
3. Peach Bottom North Expansion: PECO - PECO
4. Peach Bottom North (PECO) - Graceton (BGE) New 500kV Line: PECO Portion - PECO
5. West Cooper - Peach Bottom South New 500kV Line: PECO - PECO
6. Rebuild 5012 500kV Line and Cut-in West Cooper (Peach Bottom South - West Cooper): PECO - PECO
7. Rebuild 5012 500kV Line and Cut-in West Cooper (Graceton - West Cooper): PECO Portion - PECO
8. New BAAH Leg at Peach Bottom North: PECO - PECO
9. Peach Bottom North (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion - PECO
10. West Cooper (PECO) - High Ridge (BGE) New 500 kV Line: PECO Portion - PECO
11. New Peach Bottom West Substation: PECO - PECO
12. Cooper - Peach Bottom West New 230 kV Line: PECO - PECO
13. Peach Bottom South Substation Upgrades: PECO - PECO
14. Calpine-Peach Bottom South 500 kV Line Cut In: PECO - PECO
15. Peach Bottom South Substation Bypass: PECO - PECO
16. Rebuild 5012 Peach Bottom South (PECO)- Conastone (BGE) 500 kV Line: PECO Portion - PECO
17. Cut into 22007 Peach Bottom North-Muddy Run 230 kV Line: PECO - PECO

Cost elements covered by cost containment

Engineering & design	Yes

Permitting / routing / siting	Yes
ROW / land acquisition	Yes
Materials & equipment	Yes
Construction & commissioning	Yes
Construction management	Yes
Overheads & miscellaneous costs	Yes
Taxes	Yes
AFUDC	Yes
Escalation	Yes
Additional Information	Proprietary Information
Is the proposer offering a binding cap on ROE?	No
Is the proposer offering a Debt to Equity Ratio cap?	Proprietary Information

Additional Comments

None