

Reconductor 220-13 and 220-14 Whitpain-Plymouth 230 kV lines

General Information

Proposing entity name	PE
Company proposal ID	03
PJM Proposal ID	735
Project title	Reconductor 220-13 and 220-14 Whitpain-Plymouth 230 kV lines
Project description	Replace the 220-13 and 220-14 line conductor and terminal equipment inside Whitpain and Plymouth substations to increase the ratings of the 220-13/220-14 Whitpain-Plymouth 230 kV line facilities
Project in-service date	06/2025
Tie-line impact	No
Interregional project	No
Is the proposer offering a binding cap on capital costs?	No
Additional benefits	

Project Components

1. Replace terminal equipment inside Whitpain substation
2. Replace terminal equipment inside Plymouth substation
3. Reconductor 220-13 Whitpain-Plymouth 230 kV line
4. Reconductor 220-14 Whitpain-Plymouth 230 kV line

Substation Upgrade Component

Component title	Replace terminal equipment inside Whitpain substation
Substation name	Whitpain

Substation zone	PECO
Substation upgrade scope	Replace three sections of conductor and six meters inside Whitpain substation
Transformer Information	
None	
New equipment description	Three sections of conductor and six meters inside Whitpain substation will be replaced. Along with the substation terminal equipment being replaced at Plymouth and reconductoring 220-13 and 220-14 lines, this will increase the 220-13 and 220-14 Whitpain-Plymouth 230 kV line facility ratings to 761 MVA normal / 884 MVA emergency (summer) and 798 MVA normal / 921 MVA emergency (winter)
Substation assumptions	New terminal equipment will replace existing terminal equipment without requiring additional space.
Real-estate description	
Construction responsibility	PECO
Additional comments	
Component Cost Details - In Current Year \$	
Engineering & design	Company Confidential
Permitting / routing / siting	Company Confidential
ROW / land acquisition	\$.00
Materials & equipment	Company Confidential
Construction & commissioning	Company Confidential
Construction management	Company Confidential
Overheads & miscellaneous costs	Company Confidential
Contingency	\$.00
Total component cost	\$444,352.00
Component cost (in-service year)	\$468,771.00

Substation Upgrade Component

Component title	Replace terminal equipment inside Plymouth substation
Substation name	Plymouth
Substation zone	PECO
Substation upgrade scope	Replace six meters, five sections of station conductor and four disconnect switches inside Plymouth substation

Transformer Information

None	
New equipment description	Six meters, five sections of station conductor and four disconnect switches inside Plymouth substation will be replaced. Along with the substation terminal equipment being replaced at Whitpain and reconductoring 220-13 and 220-14 lines, this will increase the 220-13 and 220-14 Whitpain-Plymouth 230 kV line facility ratings to 761 MVA normal / 884 MVA emergency (summer) and 798 MVA normal / 921 MVA emergency (winter)
Substation assumptions	New terminal equipment will replace existing terminal equipment without requiring additional space.
Real-estate description	
Construction responsibility	PECO
Additional comments	

Component Cost Details - In Current Year \$

Engineering & design	Company Confidential
Permitting / routing / siting	Company Confidential
ROW / land acquisition	\$.00
Materials & equipment	Company Confidential
Construction & commissioning	Company Confidential
Construction management	Company Confidential

Overheads & miscellaneous costs	Company Confidential
Contingency	\$.00
Total component cost	\$971,808.00
Component cost (in-service year)	\$1,025,212.00

Transmission Line Upgrade Component

Component title	Reconductor 220-13 Whitpain-Plymouth 230 kV line
Impacted transmission line	220-13 Whitpain-Plymouth 230 kV line
Point A	Whitpain
Point B	Plymouth
Point C	
Terrain description	Varies from level to sloping

Existing Line Physical Characteristics

Operating voltage	230 kV
Conductor size and type	795 kcmil 30/19 ACSR
Hardware plan description	New hardware will be used. OPGW will be installed for the length of the line, type AFL DNO 8338 AC-92/614
Tower line characteristics	The existing structures are 90 years old, but there are no known condition issues that would prevent replacement of the existing conductor.

Proposed Line Characteristics

	Designed	Operating
Voltage (kV)	230.000000	230.000000
	Normal ratings	Emergency ratings

Summer (MVA)	761.000000	884.000000
Winter (MVA)	798.000000	921.000000
Conductor size and type	959.6 kcmil 22/7 Type 16 ACSSTW	
Shield wire size and type	2 203 2 MCM 16/19 ACSR	
Rebuild line length	Line will be reconducted, not rebuilt. Line length is 5.1 miles	
Rebuild portion description	The entire length of the line will be reconducted, not rebuilt.	
Right of way	New ROW will not be required and the ROW will not need to be expanded to implement the reconductoring.	
Construction responsibility	PECO	
Additional comments		

Component Cost Details - In Current Year \$

Engineering & design	Company Confidential
Permitting / routing / siting	Company Confidential
ROW / land acquisition	\$.00
Materials & equipment	Company Confidential
Construction & commissioning	Company Confidential
Construction management	Company Confidential
Overheads & miscellaneous costs	Company Confidential
Contingency	\$.00
Total component cost	\$6,389,832.00
Component cost (in-service year)	\$6,740,973.00

Transmission Line Upgrade Component

Component title	Reconductor 220-14 Whitpain-Plymouth 230 kV line
Impacted transmission line	220-14 Whitpain-Plymouth 230 kV line
Point A	Whitpain
Point B	Plymouth
Point C	
Terrain description	Varies from level to sloping
Existing Line Physical Characteristics	
Operating voltage	230 kV
Conductor size and type	795 kcmil 30/19 ACSR
Hardware plan description	New hardware will be used. OPGW will be installed for the length of the line, type AFL DNO 8338 AC-92/614
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Rebuild line length	Line will be reconducted, not rebuilt. Line length is 5.1 miles	

Rebuild portion description The entire length of the line will be reconducted, not rebuilt.

Right of way New ROW will not be required and the ROW will not need to be expanded to implement the reconductoring.

Construction responsibility PECO

Additional comments

Component Cost Details - In Current Year \$

Engineering & design Company Confidential

Permitting / routing / siting Company Confidential

ROW / land acquisition \$.00

Materials & equipment Company Confidential

Construction & commissioning Company Confidential

Construction management Company Confidential

Overheads & miscellaneous costs Company Confidential

Contingency \$.00

Total component cost \$6,389,832.00

Component cost (in-service year) \$6,740,973.00

Congestion Drivers

CD #	From Bus No.	From Bus Name	To Bus No.	To Bus Name	CKT	Voltage	TO Zone	Analysis type
ME-6	213906	PLYMTG 1	214035	WHITPAN1	1	230	230	Market Efficiency

Existing Flowgates

None

New Flowgates

None

Financial Information

Capital spend start date 04/2022

Construction start date 07/2022

Project Duration (In Months) 38

Additional comments

None