Transmission Expansion Advisory Committee – PECO Supplemental Projects

October 31, 2023

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

M-3 ProcessPECO Transmission Zone

Need Number: PE-2023-011

Process Stage: Need Meeting 10/31/23

Project Driver:

- Operational Flexibility and Efficiency

Specific Assumption Reference:

- Enhancing system functionality, flexibility, visibility, or operability
- Increasing system capacity
- Addressing recurring operational issues

Problem Statement:

- PJM issued a post contingency local load relief warning for the loss of the 220-52 Whitpain – Jarrett 230 kV line which would overload the 875 circuit breaker at Warrington 230 kV Bus Tie 7-8 facility.
- PECO Operations is requesting that the facility at Warrington be updated to alleviate the cause of the potential overload.

Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

M-3 Process PECO Transmission Zone
220-47 Plymouth Meeting – Flint 230 kV Line Rebuild

Need Number: PE-2023-009

Process Stage: Solutions Meeting 10/31/23

Previously Presented: Need Meeting 10/3/223

Project Driver:

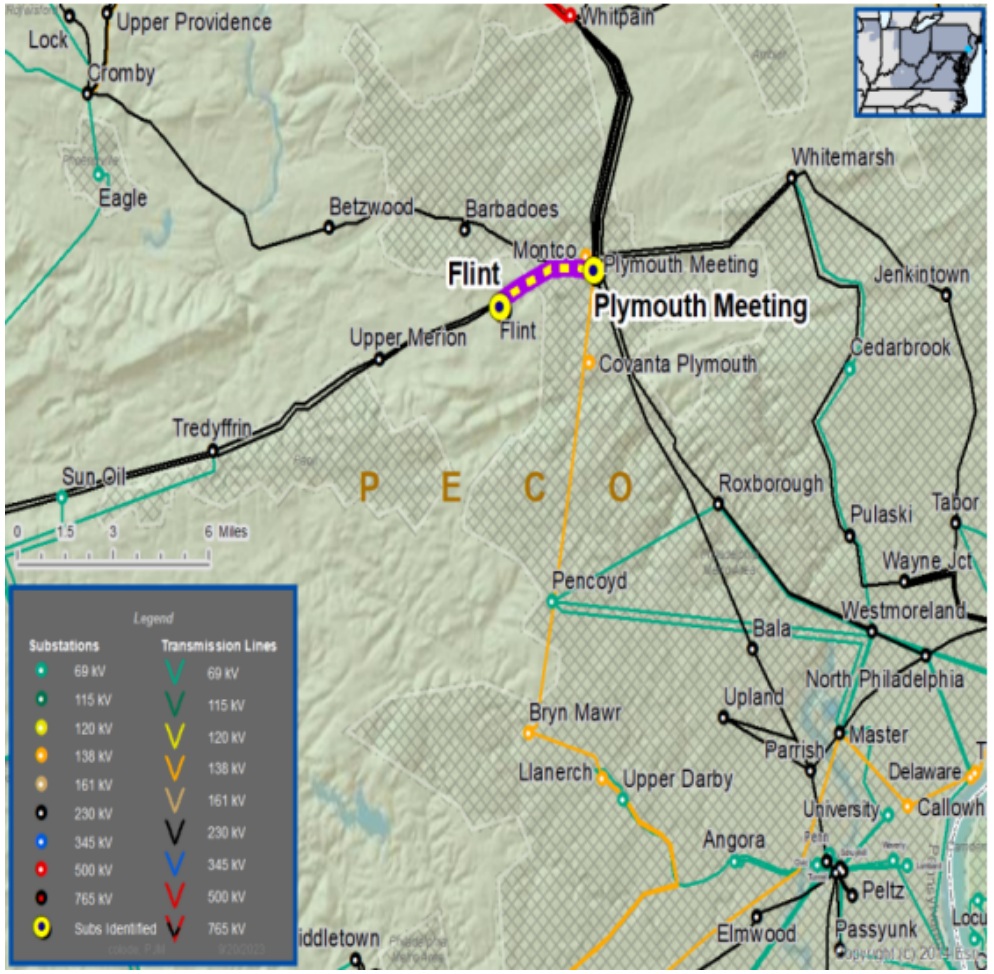
- Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

- Transmission infrastructure replacements (EOL/condition/obsolescence) that are consistent with efficient asset management decisions

Problem Statement:

- The 230 kV line 220-47 Plymouth Meeting – Flint is a 2.5 mile line with 795 kcmil 30/19 ACSR conductor and 184 kcmil ACSR static wire that was constructed in 1927. This line is 96 years old and nearing end of useful life.
- There are 16 structures along this ROW, 13 of which that are the original steel lattice towers erected in 1927, which are showing signs of corrosion on the tower members, wear to vang plates, insulators, and insulator hardware.
- Inspections of the static and phase conductors identified that they were in poor condition and need to be replaced.



M-3 Process PECO Transmission Zone
220-47 Plymouth Meeting – Flint 230 kV Line Rebuild

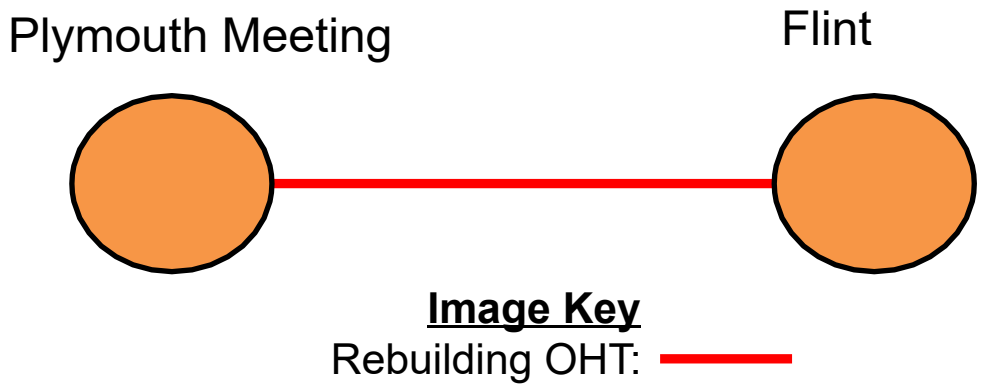
Need Number: PE-2023-009

Process Stage: Solution Meeting 10/31/23

Proposed Solution:

- Rebuild approx. 2.5 miles with new dual circuit, weathering steel monopole structures and 959.6 kcmil ACSS conductor.
- Replace various substation equipment at Plymouth Meeting and Flint substations to make the conductor the limiting element.

Existing ratings (MVA):	SN/SE	WN/WE
220-47 Plymouth – Flint	418/519	518/597
New ratings (MVA):	SN/SE	WN/WE
220-47 Plymouth – Flint	762/884	799/922



Estimated cost: $18.2M

Alternatives Considered: Replacing only the static wire, conductors, insulators, and hardware.

- This alternative was not pursued since most of the current structures are 96 years old, in deteriorating condition, and wouldn't be able to support the lifespan of the replacement conductor.

Projected In-Service: 12/31/25

Project Status: Engineering

Model: 2028 RTEP

M-3 Process PECO Transmission Zone
220-69 Plymouth Meeting – Upper Merion 230 kV Line Rebuild

Need Number: PE-2023-010

Process Stage: Solutions Meeting 10/31/23

Previously Presented: Need Meeting 10/3/223

Project Driver:

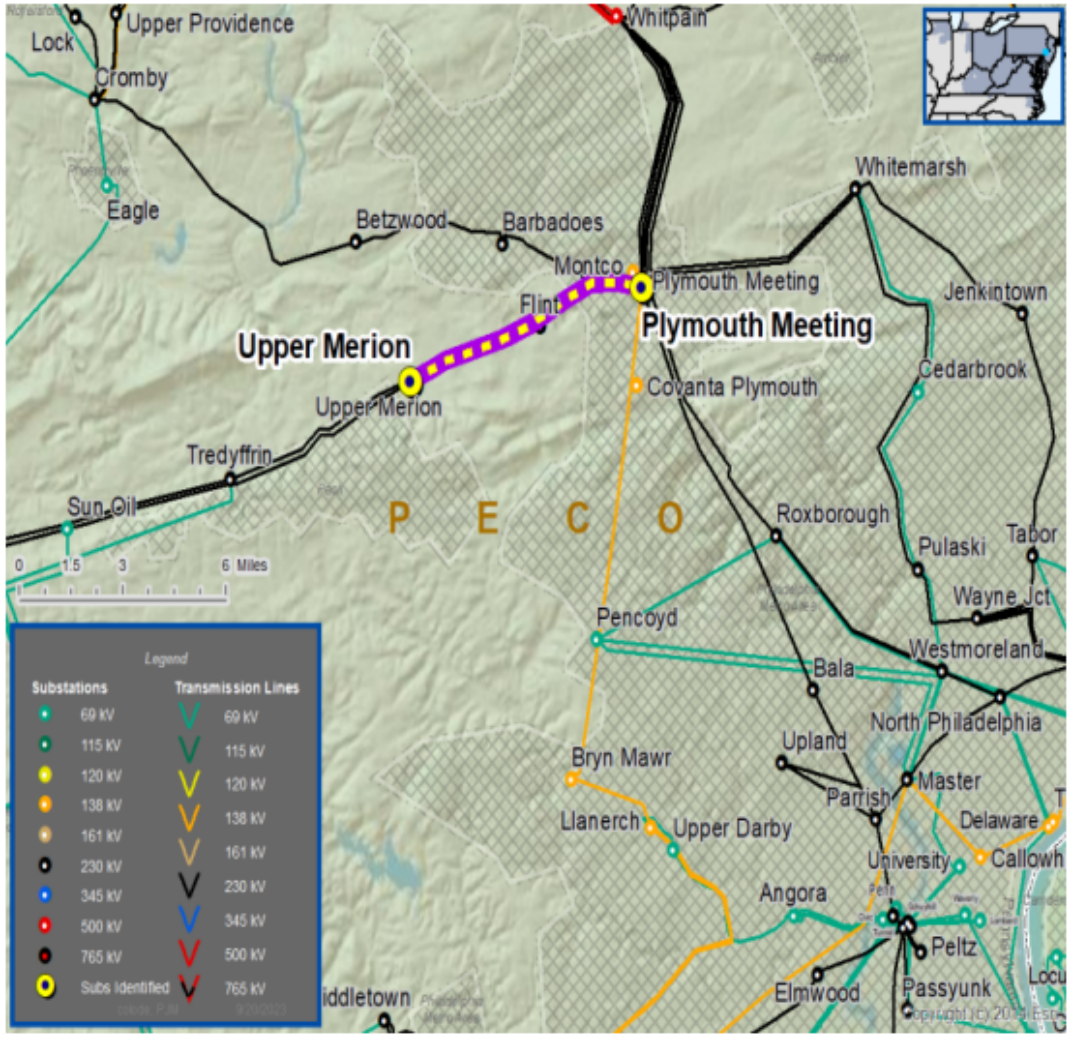
- Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

- Transmission infrastructure replacements (EOL/condition/obsolescence) that are consistent with efficient asset management decisions

Problem Statement:

- The 230 kV line 220-69 Plymouth Meeting – Upper Merion is a 4.5 mile line with 795 kcmil 30/19 ACSR conductor and 184 kcmil ACSR static wire that was constructed in 1927. This line is 96 years old and nearing end of useful life.
- There are 34 structures along this ROW, 25 of which that are the original steel lattice towers erected in 1927, which are showing signs of corrosion on the tower members, wear to vang plates, insulators, and insulator hardware.
- Inspections of the static and phase conductors identified that they were in poor condition and need to be replaced.



M-3 Process PECO Transmission Zone

220-69 Plymouth Meeting – Upper Merion 230 kV Line Rebuild

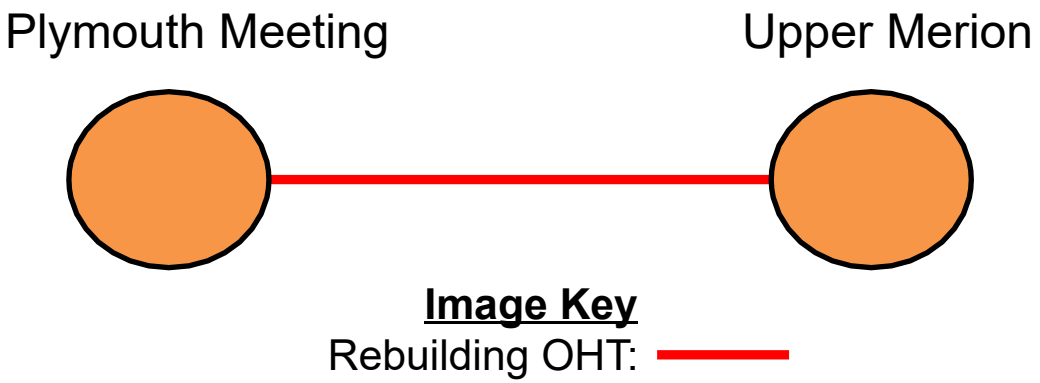
Need Number: PE-2022-010

Process Stage: Solution Meeting 10/31/23

Proposed Solution:

- Rebuild approx. 4.5 miles with new dual circuit, weathering steel monopole structures and 959.6 kcmil ACSS conductor.
- Replace various substation equipment at Plymouth Meeting and Upper Merion substations to make the conductor the limiting element.

Existing ratings (MVA):	SN/SE	WN/WE
220-69 Plymouth – Merion	418/519	518/597
New ratings (MVA):	SN/SE	WN/WE
220-69 Plymouth – Merion	762/884	799/922



Estimated cost: $29.2M

Alternatives Considered: Replacing only the static wire, conductors, insulators, and hardware.

This alternative was not pursued since most of the current structures are 96 years old, in deteriorating condition, and wouldn't be able to support the lifespan of the replacement conductor.

Projected In-Service: 12/31/26

Project Status: Engineering

Model: 2028 RTEP

Questions?

Appendix

High level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

10/21/2023 - V1 – Original version posted to pjm.com
10/30/2023 – V2 – updated slide #3 (need # changed), 6 and 8