Transmission Expansion Advisory Committee
FirstEnergy Supplemental Projects

Penelec Transmission Zone

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

Penelec Transmission Zone M-3 Process
Johnstown - Seward 230 kV Line

Need Number: PN-2025-007

Process Stage: Need Meeting 10/8/2025

Project Driver:

Equipment Condition, Performance and Risk

Specific Assumption Reference:

System Performance Global Factors

- System reliability and performance
- Substation/line equipment limits

Line Condition Rebuild/Replacement

- Age/condition of wood pole transmission line structures

Problem Statement:

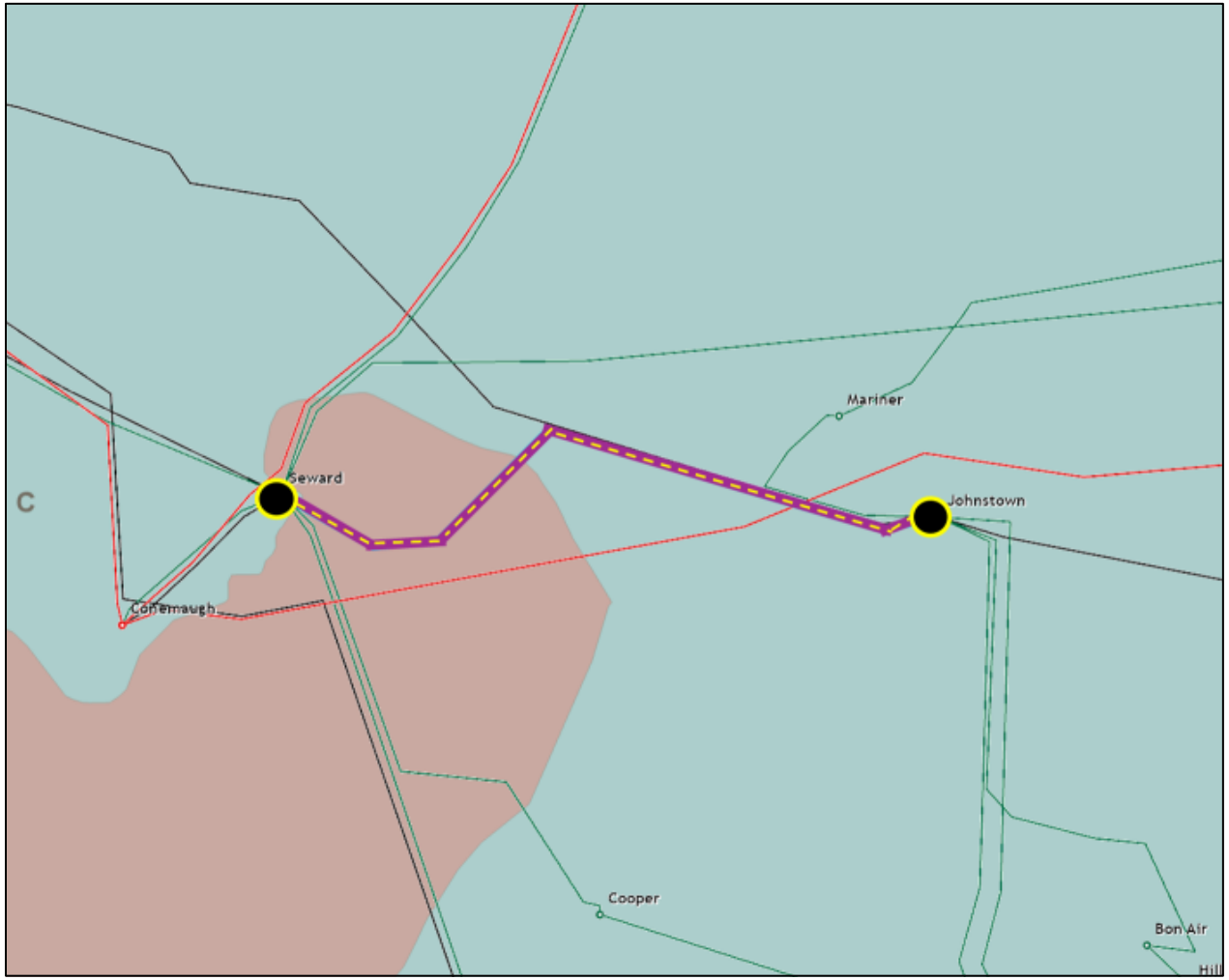
The Johnstown - Seward 230 kV Line was constructed approximately 64 years ago and is approaching end of life. The transmission line is 6.7 miles long with 129 wood pole structures.

Recent inspections have determined the line is exhibiting deterioration. Inspection findings include cracked wood poles and cross arms, woodpecker holes, and broken insulator bells occurring on 46% of the structures.

Since 2015, the line has had five unscheduled, sustained outages.

Existing Transmission Line Ratings:

- 548/666/619/790 MVA (SN/SE/WN/WE)



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

Penelec Transmission Zone M-3 Process
Forest - Glade 230 kV FG Line

Need Numbers: PN-2024-014

Process Stage: Solution Meeting – 10/08/2025

Previously Presented: Need Meeting – 04/30/2024

Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

System Performance Global Factors

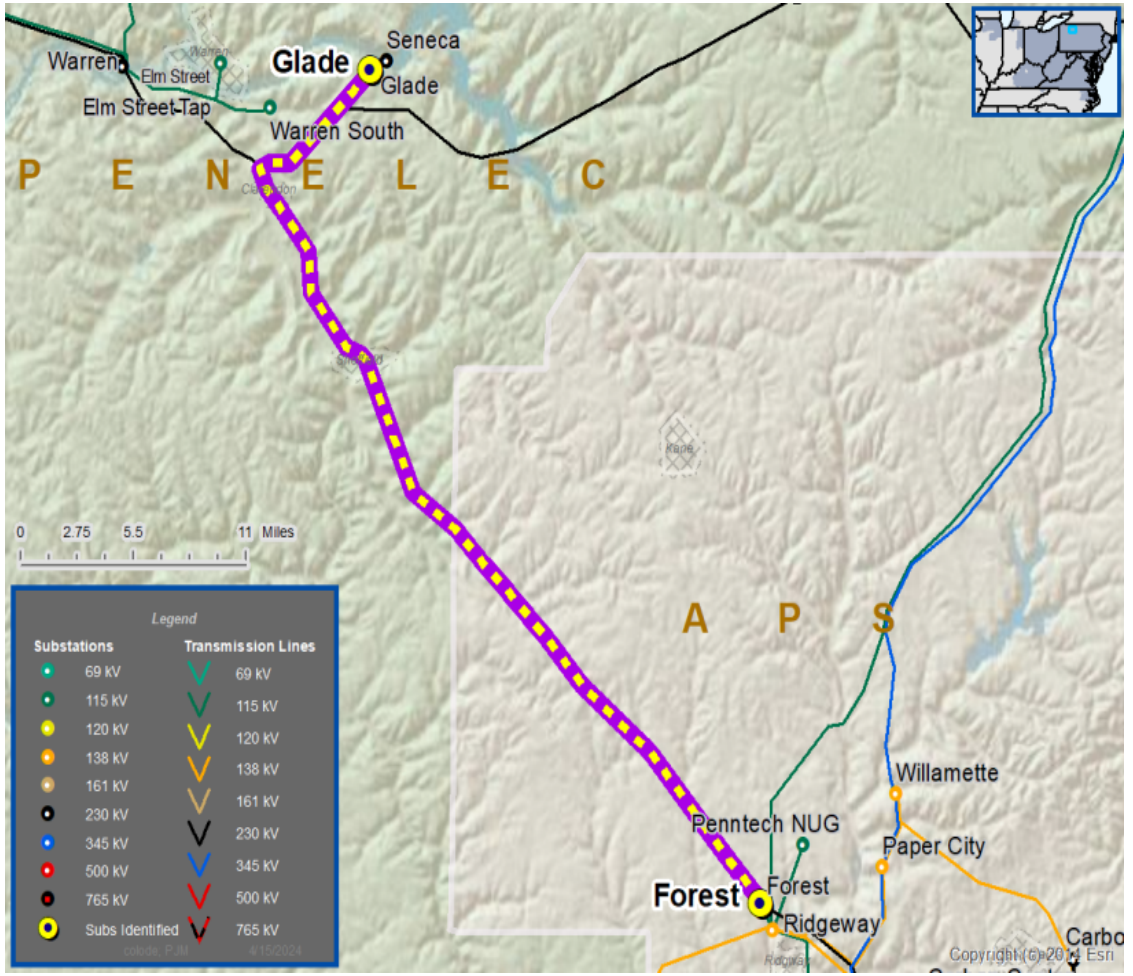
- Past system reliability/performance
- Substation/Line equipment limits

Line Condition Rebuild/Replacement

- Age/condition of wood pole transmission line structures

Problem Statement:

- The Forest – Glade 230 kV FG Line was constructed approximately 65 years ago and is approaching end of life. The line is approximately 36 miles long with 306 wood pole transmission line structures.
- Per recent inspections, the line is exhibiting deterioration. Inspection findings include cracked/deteriorated wood poles and components and sound test failure.
  - 54 structures require replacement.
  - 37 active repair conditions on structures for broken insulators and/or cracked/deteriorated wood pole components.
- Structures from structure 289 to Glade Substation (approximately two miles) were rebuilt in 2009.
- Since 2020, the line has had one unscheduled outage due to a pole failure.
- The line is currently limited by terminal equipment.
- Existing Ratings:
  - 541 / 659 / 612 / 781 MVA (SN/SE/WN/WE)



Penelec Transmission Zone M-3 Process
Forest - Glade 230 kV FG Line

Need Number: PN-2024-014
Process Stage: Solution Meeting - 10/08/2025

Proposed Solution:

Forest – Glade 230 kV Line

- Rebuild approximately 34.1 miles of 230 kV line from Forest Substation to structure 288

Glade Substation

- Replace the 1033 ACSR bus conductor

Transmission Line Ratings:

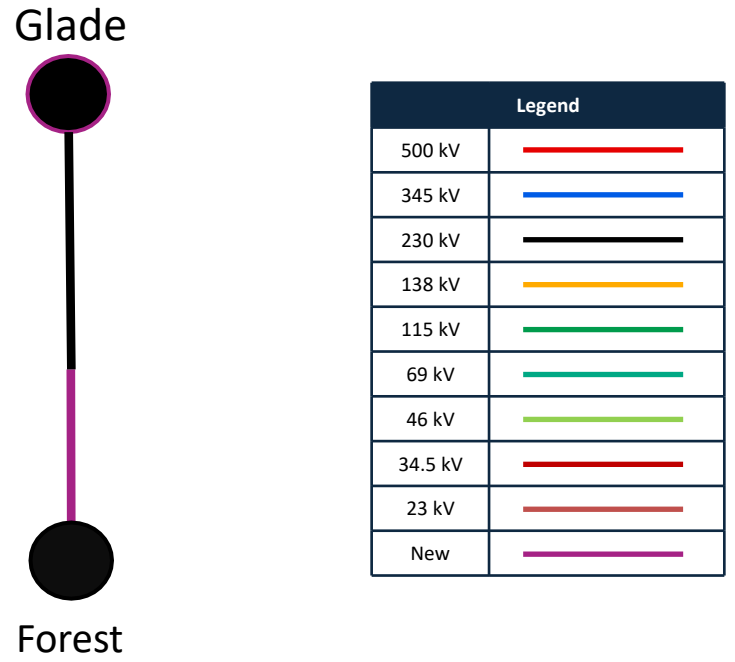
Forest – Glade 230 kV Line

- Before Proposed Solution: 541 / 659 / 612 / 781 MVA (SN/SE/WN/WE)
- After Proposed Solution: 546 / 666 / 619 / 790 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain existing condition with elevated risk of failure due to equipment condition.

Estimated Project Cost: $ 156.72M
Projected In-Service: 05/31/2029
Project Status: Conceptual
Model: 2024 RTEP - 2029 Summer 50/50



Penelec Transmission Zone M-3 Process
Shelocta 230/115 kV Substation

Need Number: PN-2025-002

Process Stage: Solution Meeting - 10/08/2025

Previously Presented: Need Meeting - 06/05/2025

Project Driver:

Operational Flexibility and Efficiency

Specific Assumption Reference:

System Performance Global Factors

- Substation/line equipment limits

Problem Statement:

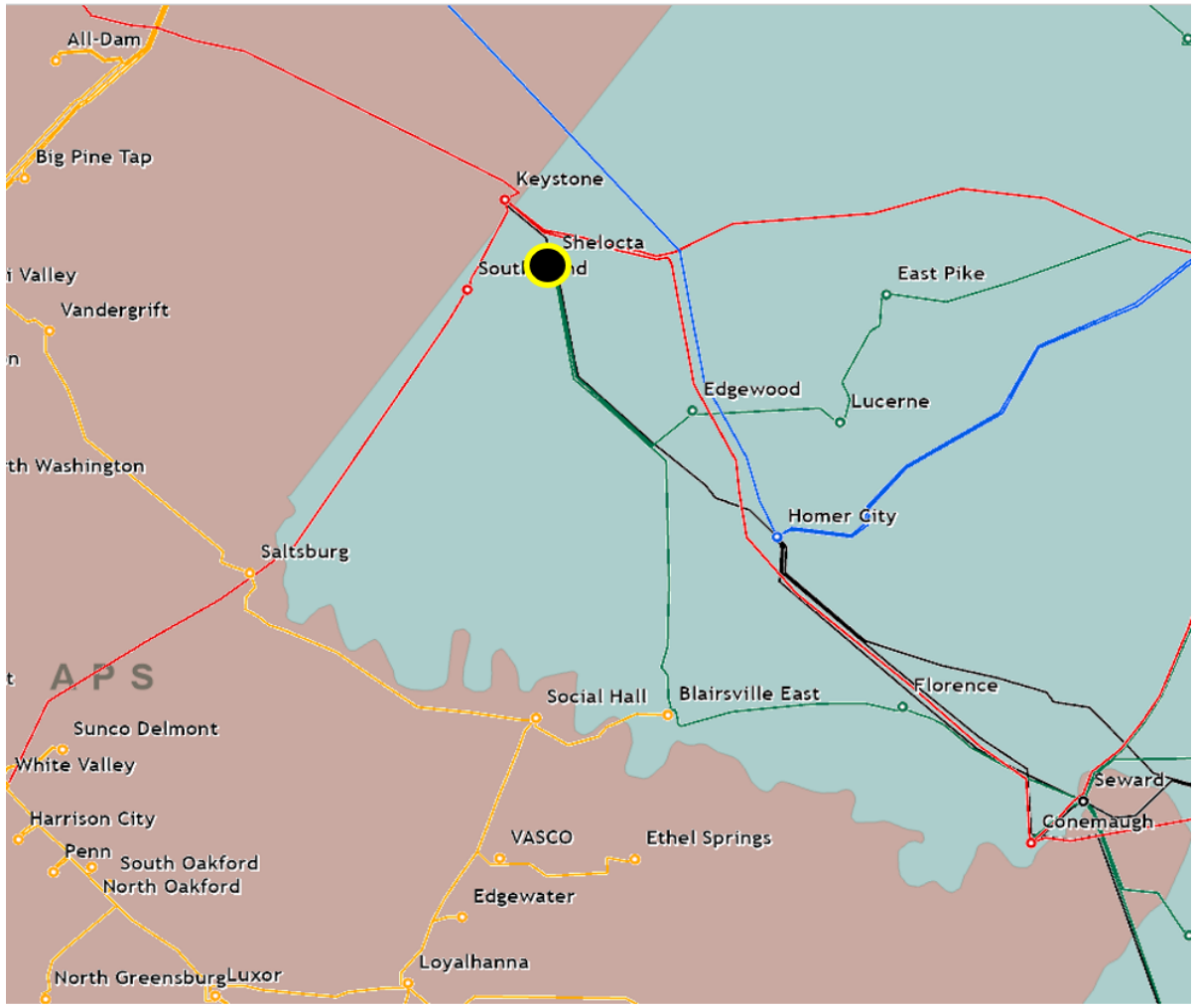
Upon field inspection, limiting bus conductor was found on the Shelocta No. 2 230/115 kV Transformer. The bus conductor has derated the capacity of the transformer circuit.

Existing Ratings:

- 146/190/209/236 MVA (SN/SSTE/WN/WSTE)

Transformer Ratings:

- 226/241/274/297 MVA (SN/SSTE/WN/WSTE)



Penelec Transmission Zone M-3 Process
Shelocta 230/115 kV Substation

Need Number: PN-2025-002

Process Stage: Solution Meeting - 10/08/2025

Proposed Solution:

Shelocta Substation

- Replace the limiting substation conductor on the Shelocta No. 2 230/115 kV Transformer.

Ratings:

Shelocta No. 2 230/115 kV Transformer Circuit

- Before Proposed Solution: 146 / 190 / 209 / 236 MVA (SN/SE/WN/WE)
- After Proposed Solution: 221 / 228 / 274 / 283 MVA (SN/SE/WN/WE)

Alternatives Considered:

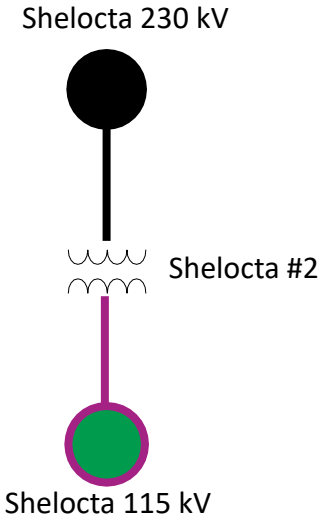
Keep limiting conductor with reduced ratings and increased risk of overload.

Estimated Project Cost: $ 0.25M

Projected In-Service: 05/06/2026

Project Status: Conceptual

Model: 2024 RTEP - 2029 Summer 50/50



Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

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

09/26/2025 – V1 – Original version posted to pjm.com