

Transmission Expansion Advisory Committee FirstEnergy Supplemental Projects

Penelec Transmission Zone

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

Need Number: PN-2023-022

Process Stage: Solution Meeting – TEAC – 07/07/2026

Previously Presented: Need Meeting – TEAC – 10/31/2023

Project Driver:

Operational Flexibility and Efficiency

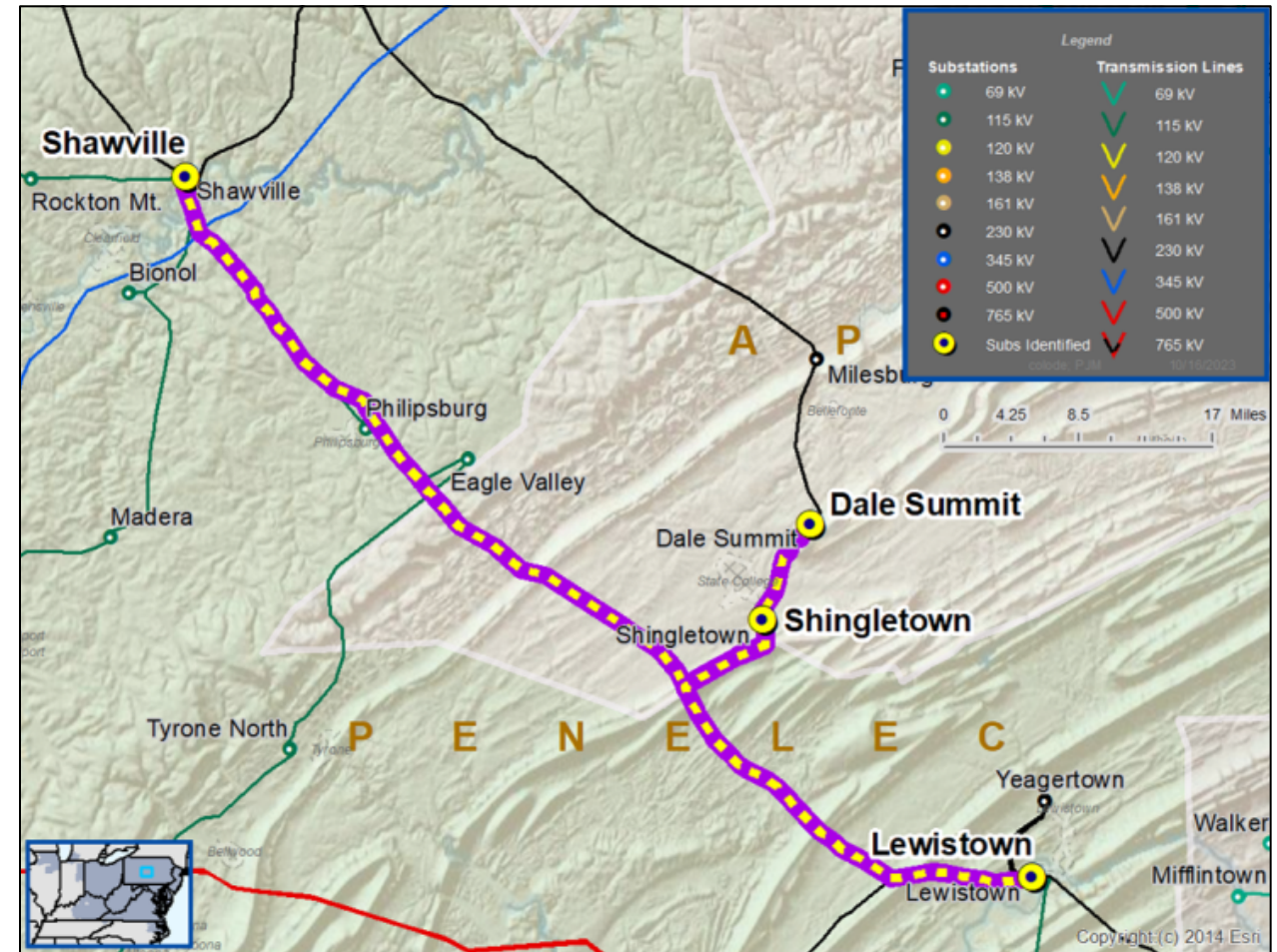
Specific Assumption Reference:

- System Performance Projects
 - Add/Expand Bus Configuration
 - Load at risk in planning and operational scenarios
 - Reduce the amount of exposed potential local load loss during contingency conditions
 - Eliminate simultaneous outages to multiple networked elements

Problem Statement:

The existing 230 kV yard at Shingletown is configured as a straight bus. Shingletown serves approximately 82.7 MW of load and 1,152 customers. With a stuck breaker contingency, the entire Shingletown substation will be outaged.

Cont'd on next slide...

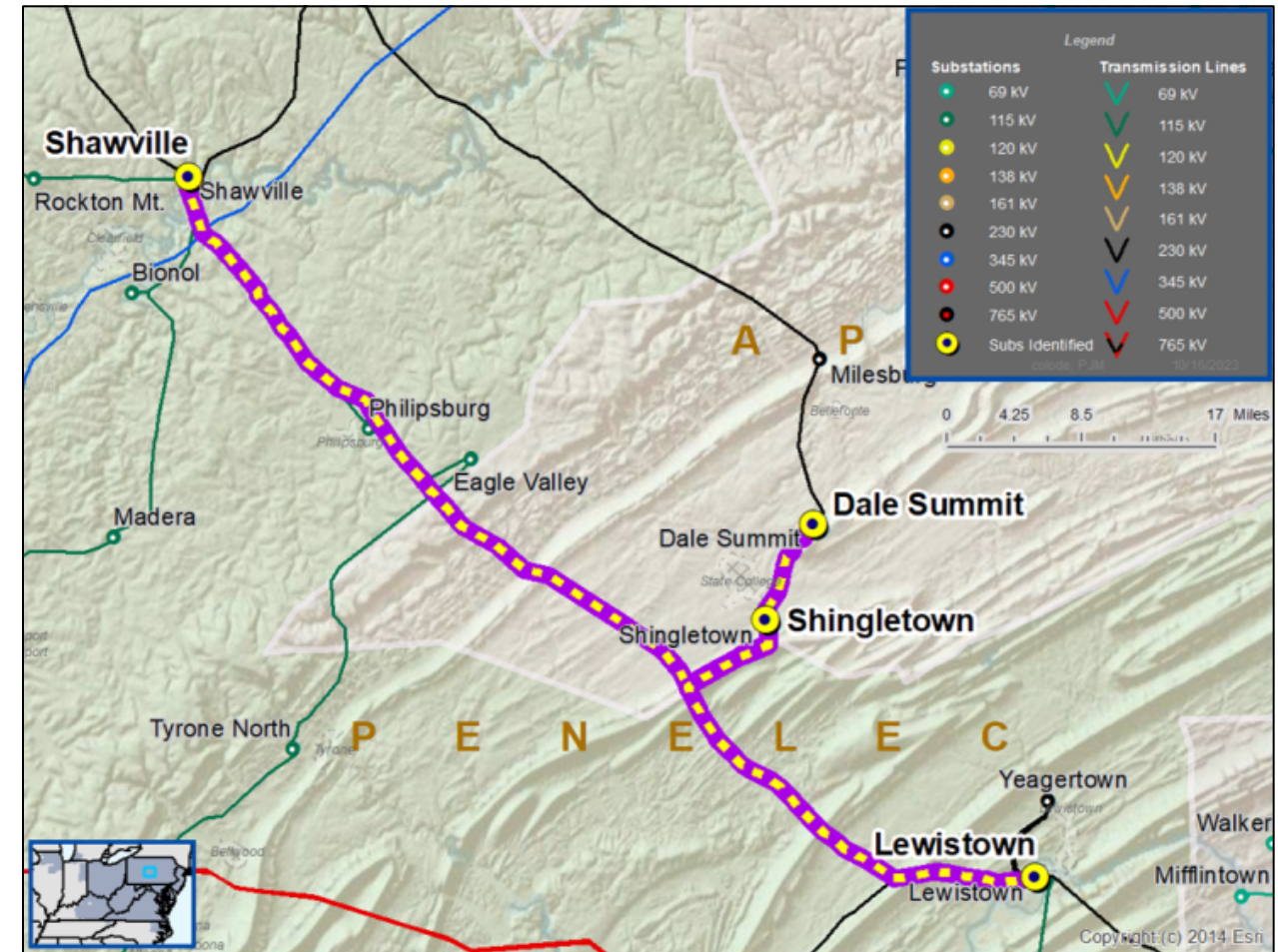


Need Number: PN-2023-022

Problem Statement: *(Cont'd from previous slide)*

Transmission line ratings are limited by terminal equipment.

- Dale Summit – Shingletown 230 kV Line:
 - Existing line rating: 486 / 523 MVA (SN / SE)
 - Existing Transmission Conductor Rating: 617 / 754 MVA (SN / SE)
- Lewistown – Shingletown 230 kV Line:
 - Existing line rating: 512 / 612 MVA (SN / SE)
 - Existing Transmission Conductor Rating: 546 / 666 MVA (SN / SE)
- Shawville – Shingletown 230 kV Line:
 - Existing line rating: 445 / 587 MVA (SN / SE)
 - Existing Transmission Conductor Rating: 546 / 666 MVA (SN / SE)



Penelec Transmission Zone M-3 Process Shawville and Lewistown 230 kV Terminal Upgrades, PA

Need number: PN-2023-022

Process Stage: Solution Meeting – TEAC – 07/07/2026

Proposed Solution:

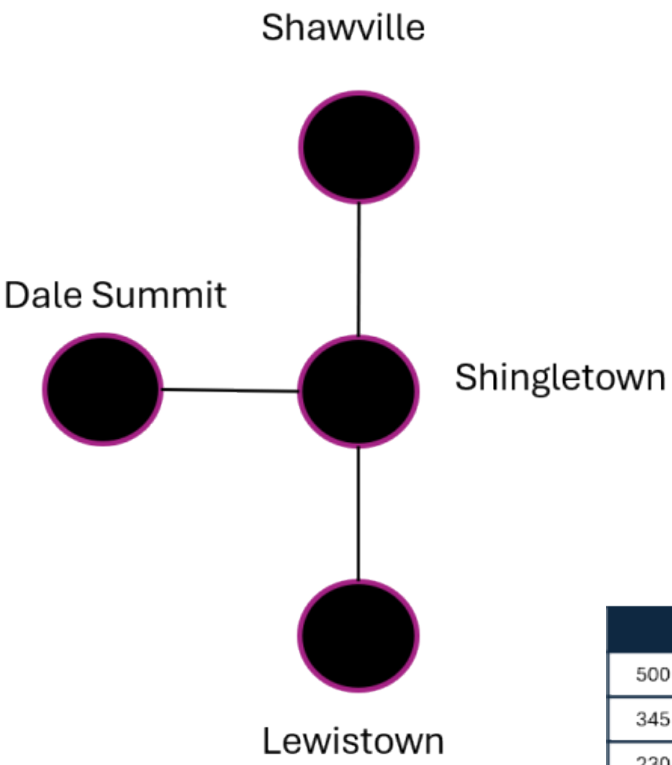
Convert Shingletown Substation into a six-breaker 230 kV ring bus. (APS-2023-059)
 At Shawville Substation (PN-2023-022): Replace substation conductor and revise relay settings.
 At Lewistown Substation (PN-2023-022): Replace line trap and revise relay settings.
 This project is concurrent with APS-2023-059.

Ratings:

- Lewistown - Shingletown 230 kV Line:
 - Before Proposed Solution: 512 / 612 / 619 / 700 MVA (SN/SE/WN/WE)
 - After Proposed Solution: 546 / 666 / 619 / 790 MVA (SN/SE/WN/WE)
- Shawville - Shingletown 230 kV Line:
 - Before Proposed Solution: 442 / 582 / 619 / 700 MVA (SN/SE/WN/WE)
 - After Proposed Solution: 546 / 666 / 619 / 790 MVA (SN/SE/WN/WE)
- Dale Summit - Shingletown 230 kV Line:
 - Before Proposed Solution: 486 / 523 / 542 / 571 MVA (SN/SE/WN/WE)
 - After Proposed Solution: 617 / 754 / 699 / 894 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain the existing configuration with risk of customer interruptions under contingency scenarios.



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



Penelec Transmission Zone M-3 Process Shawville and Lewistown 230 kV Terminal Upgrades, PA

Need number: PN-2023-022

Process Stage: Solution Meeting – TEAC – 07/07/2026

Estimated Project Cost: \$4.97M

Projected In-Service: 06/15/2028

Project Status: Conceptual

Model: 2024 RTEP model for 2029 Summer (50/50)

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

06/26/2026 – V1 – Original version posted to pjm.com