

# Subregional RTEP Committee - Mid-Atlantic FirstEnergy Supplemental Projects

# 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

**Need Number:** PN-2024-002

**Process Stage:** Need Meeting 02/15/2024

**Project Driver:**

*Operational Flexibility and Efficiency*

*Equipment Material Condition, Performance, and Risk*

**Specific Assumption Reference:**

System Performance Projects Global Factors

- System reliability and performance
- Substation and line equipment limits

System Performance

- Reconductor / Rebuild Transmission Line

**Problem Statement:**

The Summit – SGC Tap section of the Summit – SGC Tap – Ashville 46 kV Line is 73 years old and 1.36 miles long.

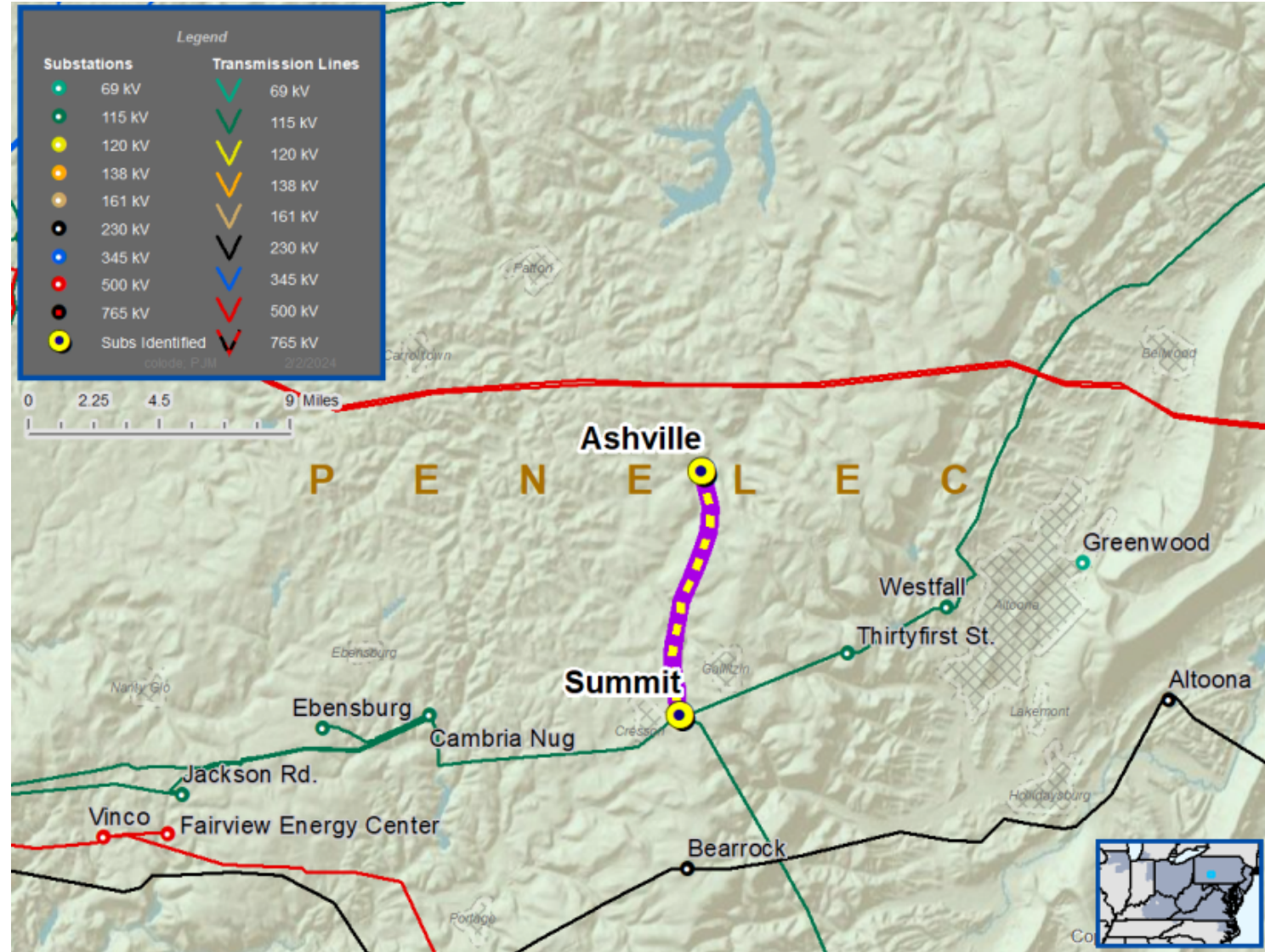
Within the last five years, the line has experienced nine unscheduled outages due to a combination of storm damage, deteriorating cross-arms, and insulators. In addition, there have been five operational outages on this line to avoid thermal overloads.

The SGC Tap – Summit 46 kV Line section is currently limited by terminal equipment, including vintage electromechanical relaying.

Existing Ratings

26/33 MVA SN/SE

33/33 MVA WN/WE



**Need Number:** PN-2024-006

**Process Stage:** Need Meeting 02/15/2024

**Project Driver:**

*Equipment Material Condition, Performance and Risk*

**Specific Assumption Reference:**

System Performance Projects Global Factors

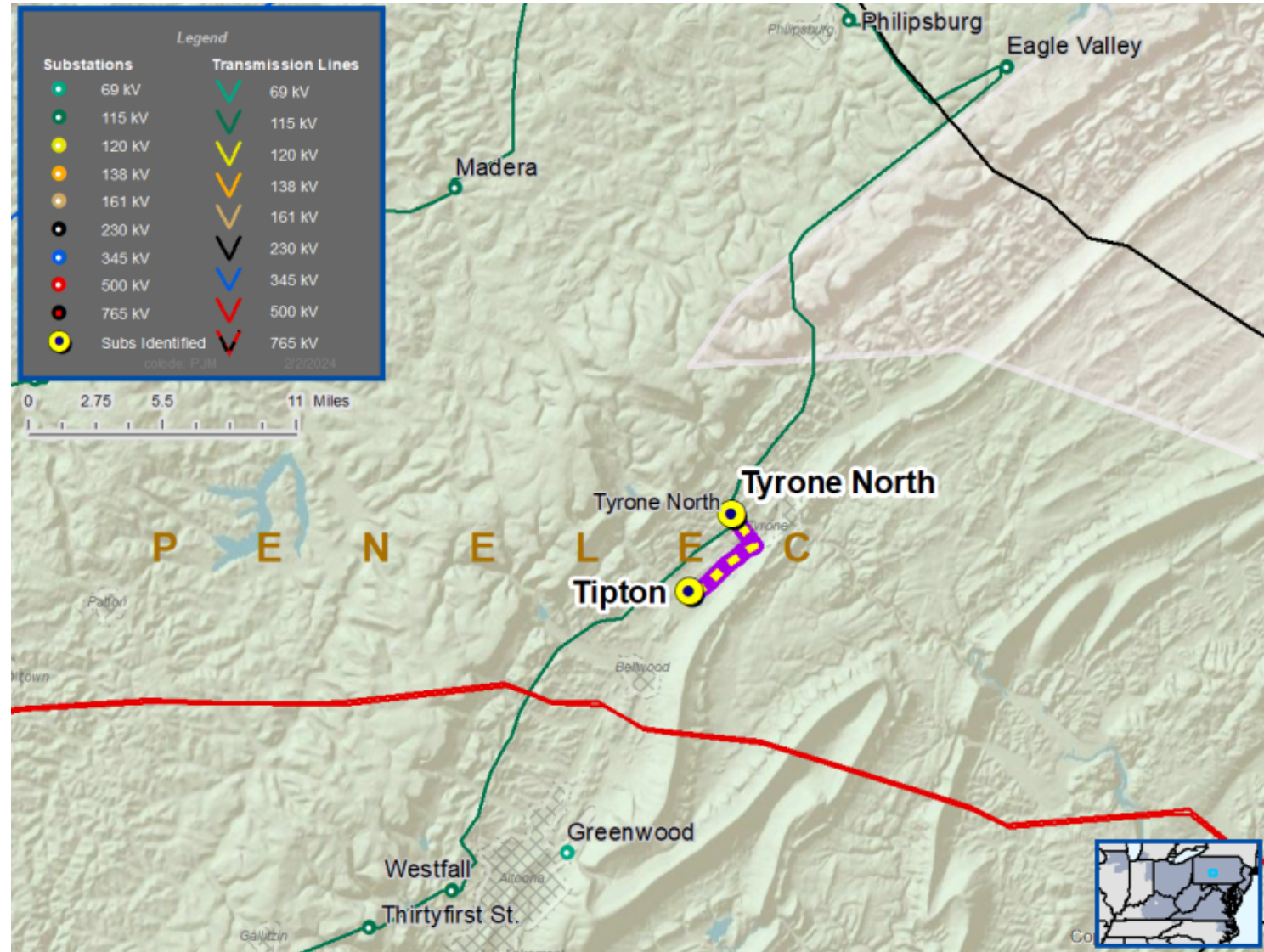
- System reliability and performance
- Substation/line equipment limit

Upgrade Relay Schemes

- Obsolete and difficult to repair communication equipment
- Communication technology upgrades

**Problem Statement:**

- The Tyrone North – Tipton 46 kV Line has electromechanical relays with directional tripping.
- The relays limit the line and cause errors in operational monitoring.
- Substation conductor limits the line rating.
- Existing line ratings:
  - 34/44 MVA (SN/SE)
  - 49/55 MVA (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

**Need Number:** PN-2023-005

**Process Stage:** Solution Meeting 02/15/2024

**Previously Presented:** Need Meeting 07/20/2023

**Project Driver:**

*Operational Flexibility and Efficiency*

**Specific Assumption Reference:**

Add/Expand Bus Configuration

- Eliminate simultaneous outages to multiple network elements

System Performance Projects

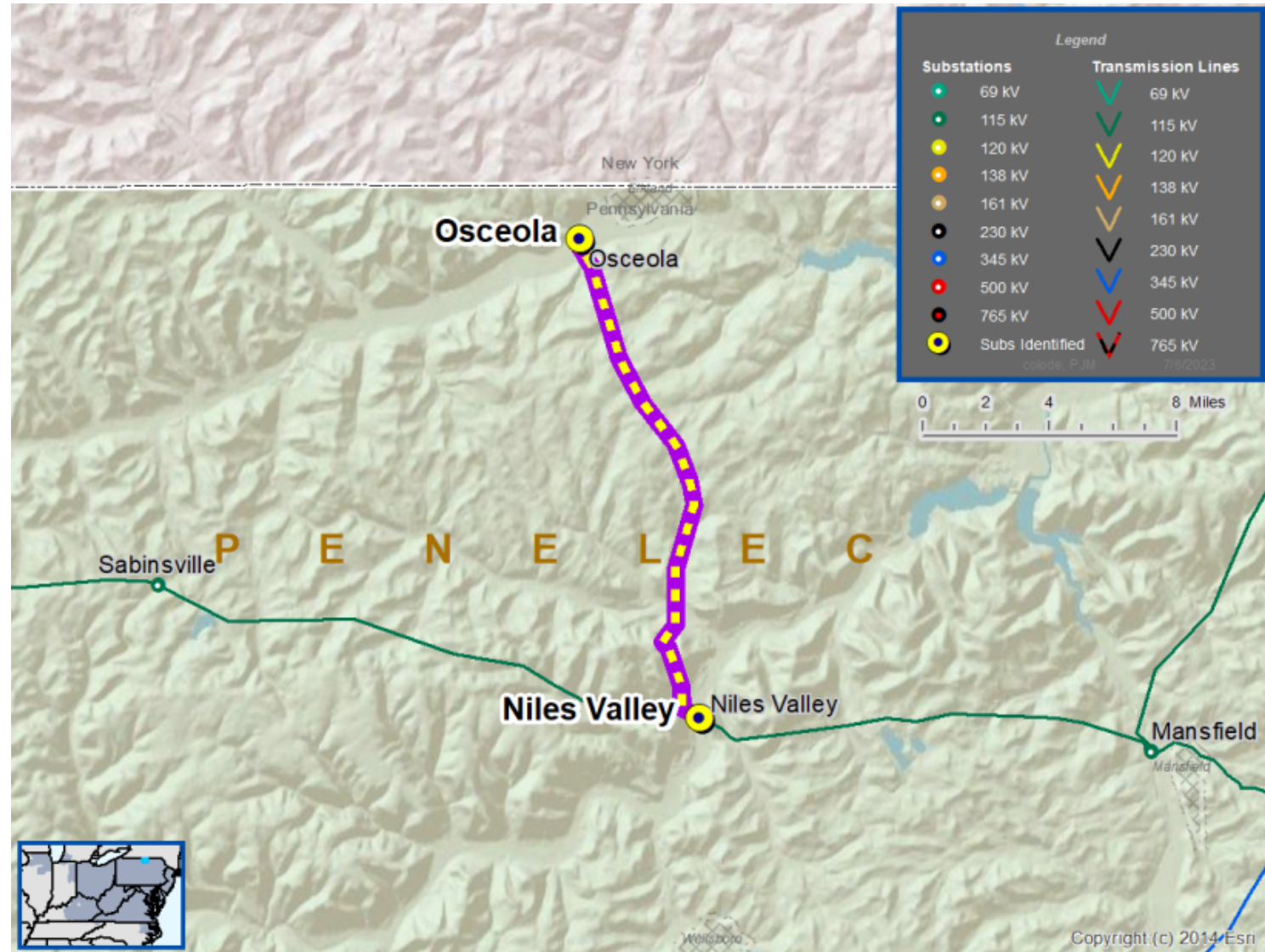
- Substation/line equipment limits

System Performance Projects Global Factors

- Load and/or customers at risk on single transmission line

**Problem Statement:**

- Niles Valley Substation serves approximately 30 MW of load and 331 customers, including one large electric distribution company (Wellsboro).
- An additional 12 MW of load and 2,746 customers are served radially from Niles Valley at Osceola Substation.
- The existing Niles Valley Substation contains two networked 115 kV lines, two radial 115 kV lines, two 115-34.5 kV transformers, and one 115 kV capacitor bank.
- There are straight busses separated by a bus tie breaker. The distribution transformers do not have high side protection devices. During breaker maintenance (a potential two day outage), the Wellsboro 115 kV service point would be interrupted with no backup service (26 MVA of load).



# Penelec Transmission Zone M-3 Process Niles Valley 115 kV Ring Bus

**Need Number:** PN-2023-005

**Process Stage:** Solution Meeting 02/15/2024

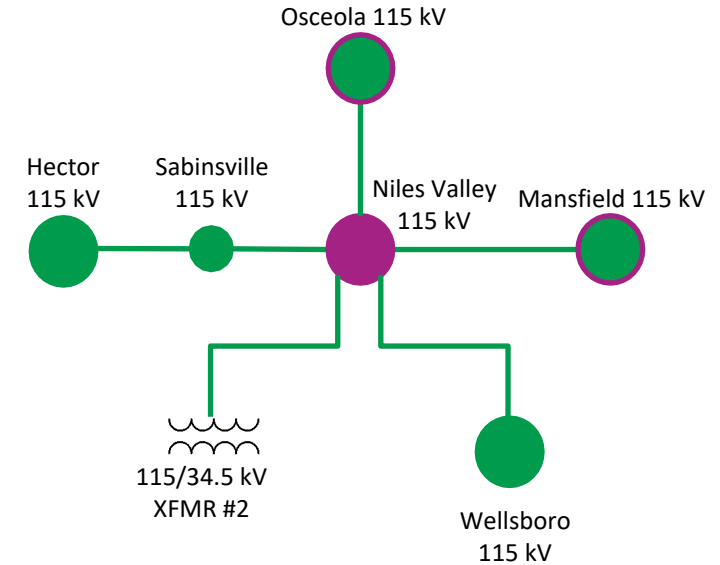
**Proposed Solution:**

At Niles Valley Substation:

- Construct a 115 kV, six breaker ring bus
- Remove Niles Valley No. 1 115-34.5 kV Transformer
- Remove the 115 kV bypass switch between the Wellsboro and Mansfield line exits (s2835) upon ring bus completion
- Adjust relay settings

**Transmission Line Ratings:**

- Niles Valley – Sabinsville/Hector 115 kV Line:
  - Before Proposed Solution:
    - 147/191 MVA SN/SE
    - 211/237 MVA WN/WE
  - After Proposed Solution:
    - 202/245 MVA SN/SE
    - 228/290 MVA WN/WE
- Niles Valley – Mansfield 115 kV Line:
  - Before Proposed Solution:
    - 147/174 MVA SN/SE
    - 181/190 MVA WN/WE
  - After Proposed Solution:
    - 202/245 MVA SN/SE
    - 228/290 MVA WN/WE



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 Niles Valley 115 kV Ring Bus

**Need Number:** PN-2023-005

**Process Stage:** Solution Meeting 02/15/2024

**Transmission Line Ratings (continued):**

- Niles Valley – Wellsboro 115 kV Line:
  - Before Proposed Solution:
    - 147/191 MVA SN/SE
    - 211/237 MVA WN/WE
  - After Proposed Solution:
    - 232/282 MVA SN/SE
    - 263/334 MVA WN/WE
- Niles Valley – Osceola 115 kV Line:
  - Before Proposed Solution:
    - 147/191 MVA SN/SE
    - 211/237 MVA WN/WE
  - After Proposed Solution:
    - 232/282 MVA SN/SE
    - 263/334 MVA WN/WE

**Alternatives Considered:**

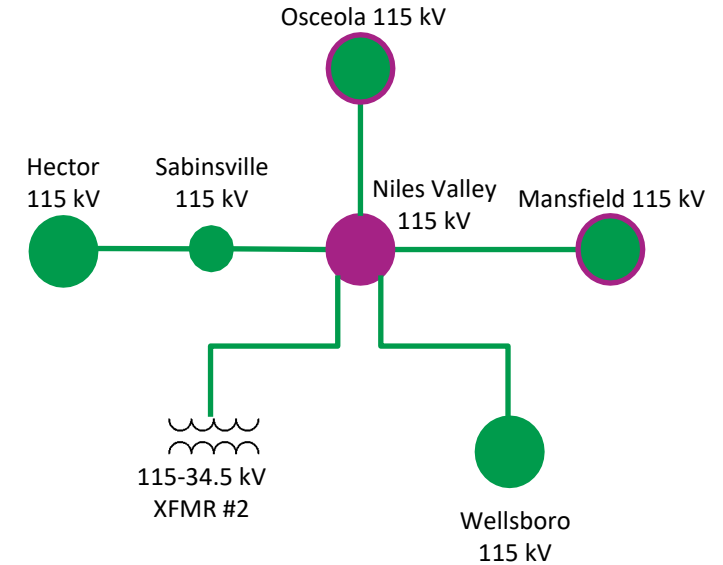
Maintain existing substation configuration with elevated risk of customer outages under contingency conditions.

**Estimated Project Cost:** \$16.0M

**Projected In-Service:** 11/04/2028

**Project Status:** Engineering

**Model:** 2023 RTEP model for 2028 Summer (50/50)



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 Warren – Falconer 115 kV Line: New Customer

**Need Number:** PN-2023-007

**Process Stage:** Solution Meeting – 02/15/2024

**Previously Presented:** Need Meeting – 07/20/2023

**Project Driver:**

*Customer Service*

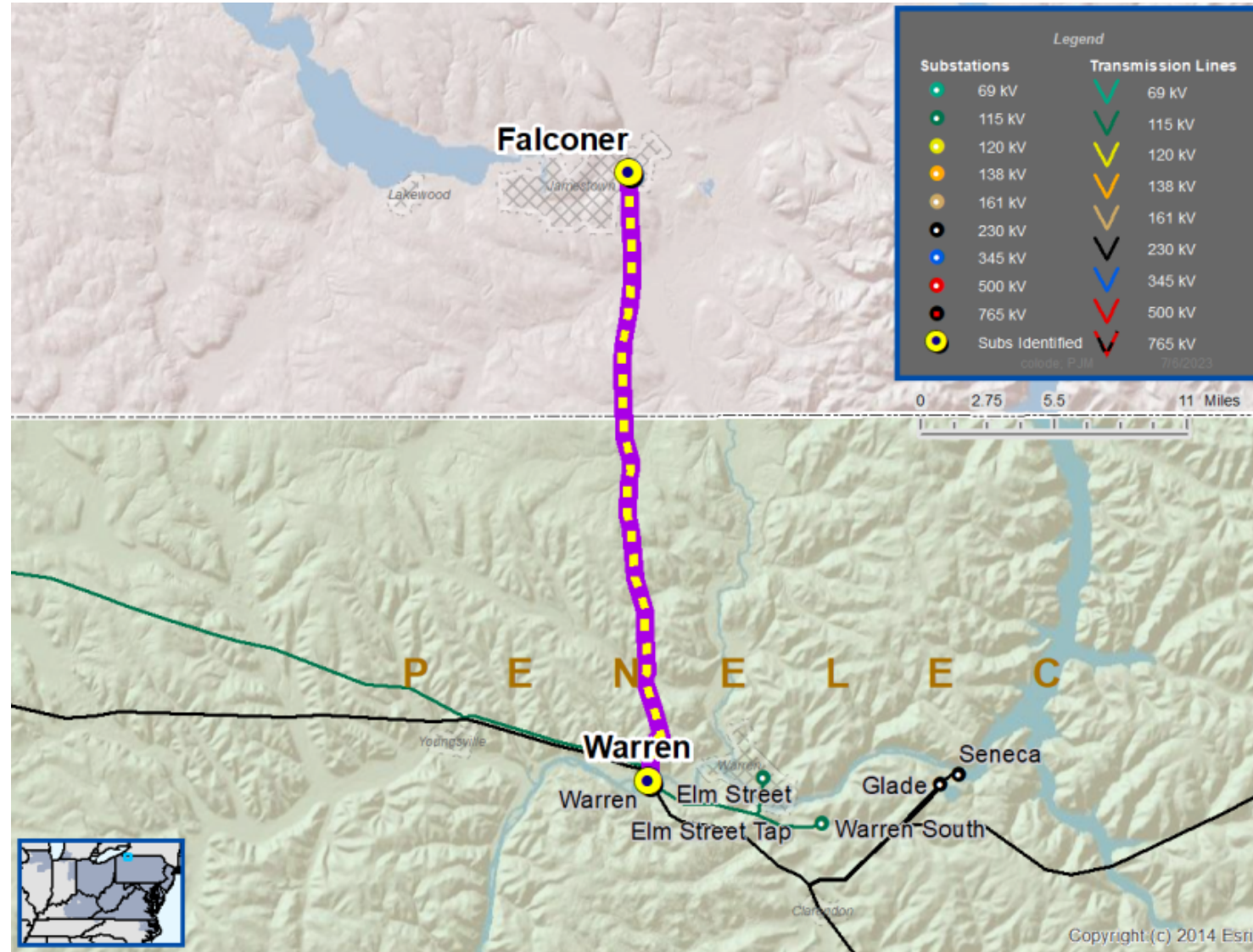
**Specific Assumption Reference:**

New customer connection requests will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

**Problem Statement:**

New Customer Connection – A customer requested 115 kV service with an anticipated load of 22.4 MVA near the Warren – Falconer 115 kV Line.

Requested in-service date is 12/31/2024.



# Penelec Transmission Zone M-3 Process Warren – Falconer 115 kV Line: New Customer

**Need Number:** PN-2023-007  
**Process Stage:** Solution Meeting – 02/15/2024

**Proposed Solution:**

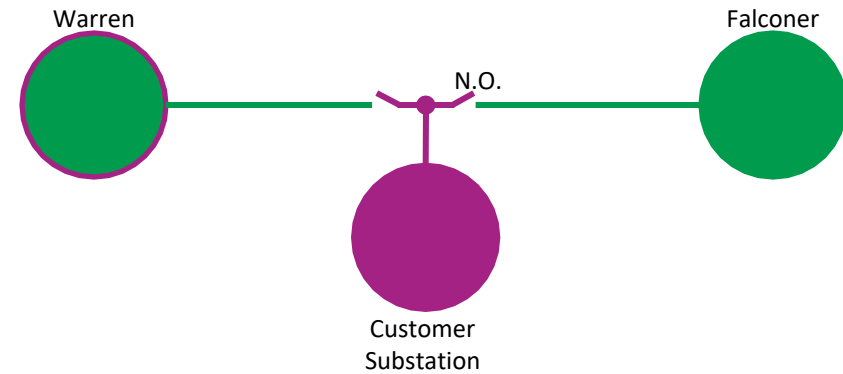
Provide 115 kV service from the Warren – Falconer 115 kV Line:

- Tap the Warren – Falconer 115 kV Line, install switches and build approximately 190 ft of transmission line from the tap point to customer substation
- Install one 115 kV revenue metering package at customer substation
- Adjust relay settings at Warren Substation
- Operate disconnect switch towards Falconer Substation as normally open

**Alternatives Considered:**

No feasible alternatives considered due to proximity of customer load to Warren – Falconer 115 kV Line.

**Estimated Project Cost:** \$1.5M  
**Projected In-Service:** 04/28/2027  
**Project Status:** Engineering  
**Model:** 2023 RTEP model for 2028 Summer (50/50)



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

**Need Number:** PN-2023-012

**Process Stage:** Solution Meeting – 02/15/2024

**Previously Presented:** Need Meeting – 10/19/2023

**Project Driver(s):**

*Customer Service*

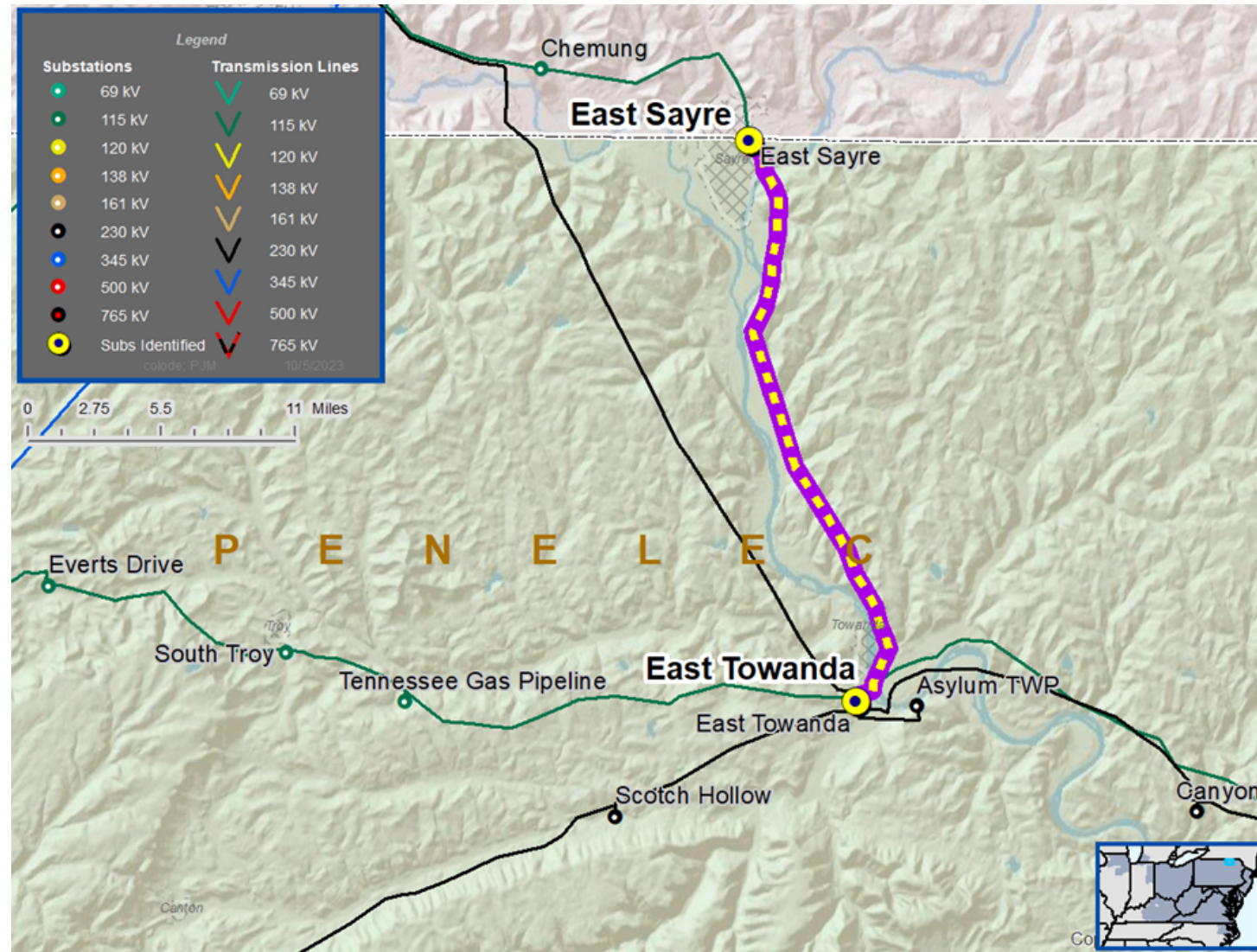
**Specific Assumption Reference(s)**

New customer connection request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

**Problem Statement**

New Customer Connection – A customer requested a new 115 kV delivery point near the East Sayre-East Towanda 115 kV Line. The anticipated load of the new customer connection is 20 MVA.

Requested in-service date is 08/30/2024





## Penelec Transmission Zone M-3 Process East Sayre – East Towanda 115 kV Line: New Customer

**Need Number:** PN-2023-012

**Process Stage:** Solution Meeting – 02/15/2024

**Proposed Solution:**

Provide 115 kV service from the East Sayre – East Towanda 115 kV Line:

- Tap the East Sayre – East Towanda 115 kV Line, install switches and build approximately 250 feet of transmission line to the customer substation
- Install three 115 kV motor-operated disconnects with SCADA
- Install one wave trap

**Alternatives Considered:**

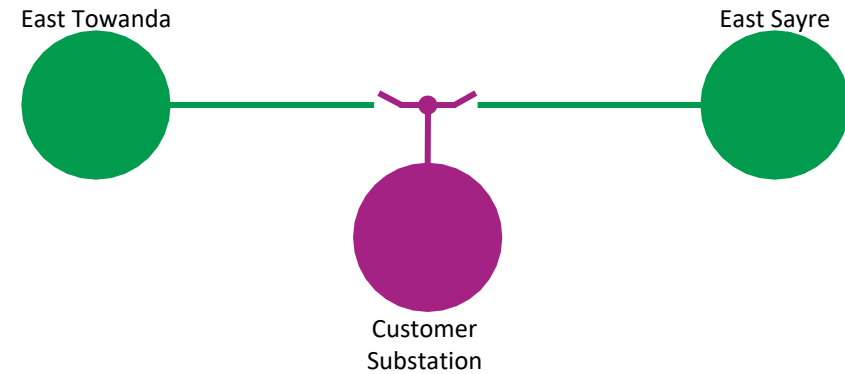
No feasible alternatives considered due to proximity of customer load to East Sayre – East Towanda 115 kV Line.

**Estimated Project Cost:** \$1.67M

**Projected In-Service:** 09/30/2025

**Project Status:** Engineering

**Model:** 2023 RTEP model for 2028 Summer (50/50)



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

**Need Number:** PN-2023-017

**Previously Presented:** Needs Meeting 10/19/2023

**Process Stage:** S Meeting 10/19/2023

**Project Driver:**

*Customer Service*

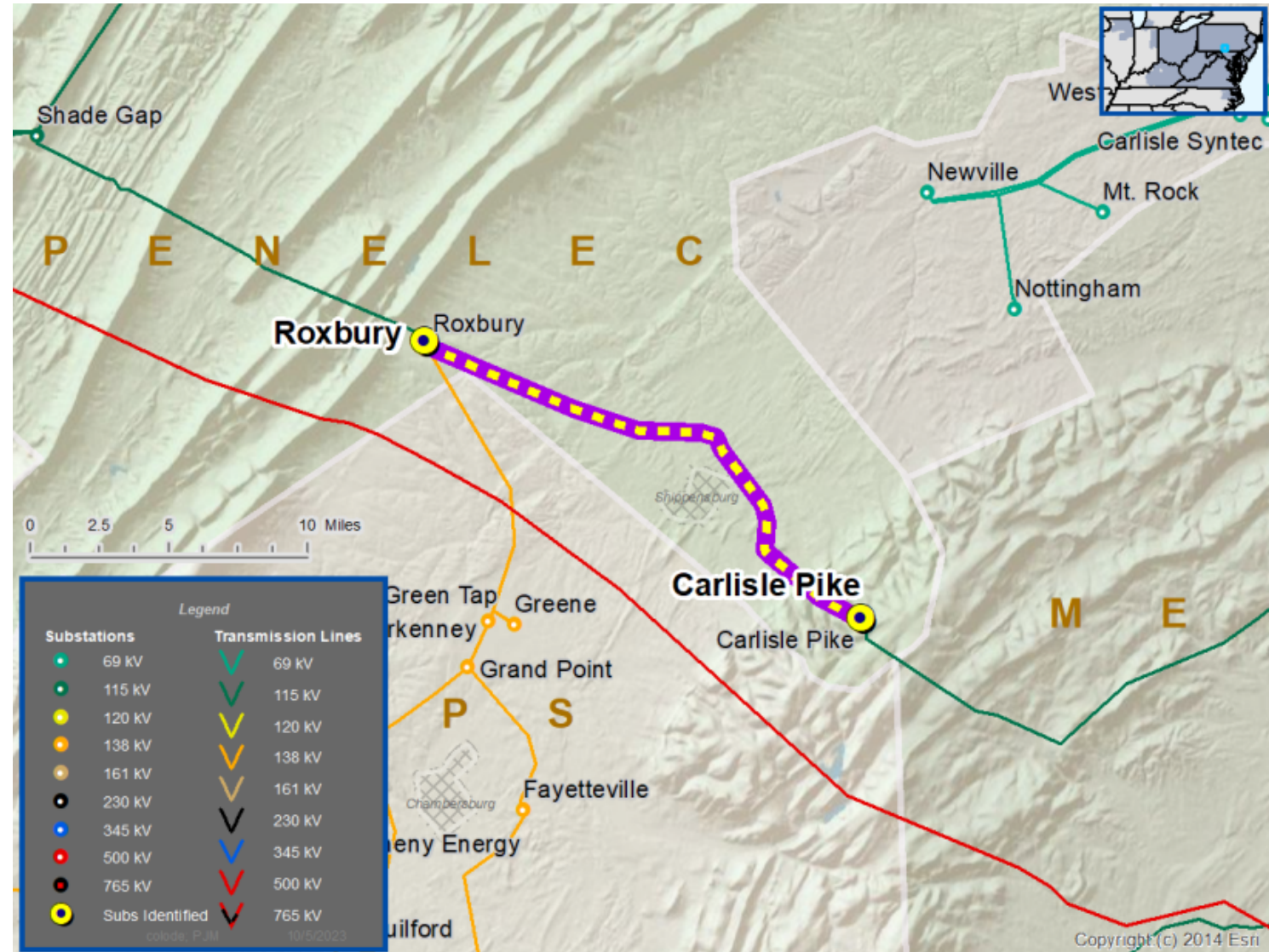
**Specific Assumption Reference:**

Customer request will be evaluated per FirstEnergy’s “Requirements for Transmission Connected Facilities” document and “Transmission Planning Criteria” document.

**Problem Statement:**

New Customer Connection – A customer requested a new 115 kV delivery point near the Roxbury – Carlisle Pike 115 kV Line. The anticipated load of the new customer is 33 MVA.

Requested in-service date is 12/29/2023



**Need Number:** PN-2023-017

**Process Stage:** Solutions Meeting 02/15/2024

**Proposed Solution:**

Provide 115 kV service from the Carlisle Pike – Roxbury 115 kV Line:

- Tap the Carlisle Pike – Roxbury 115 kV Line, install switches and build approximately 1.76 miles of transmission line to the customer substation
- Install one new 115 kV breaker at Carlisle Pike Substation
- Install one new 115 kV revenue metering package at the customer substation
- Adjust relaying at Carlisle Pike Substation and Roxbury Substation

**Alternatives Considered:**

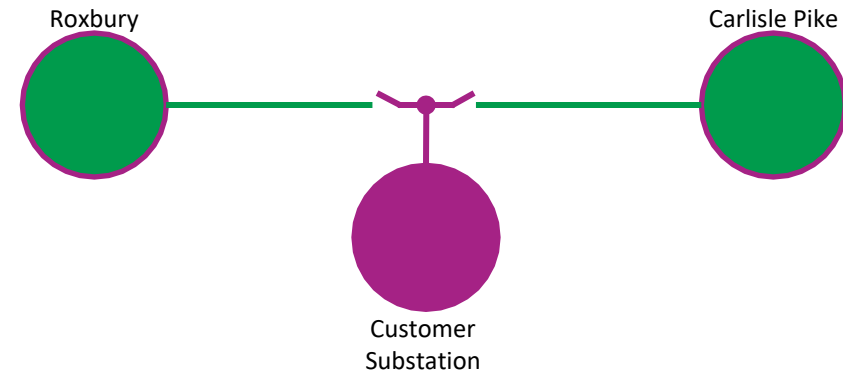
No feasible alternatives were considered to serve the customer’s load due to the proximity to the Carlisle Pike – Roxbury 115 kV Line.

**Estimated Project Cost:** \$8.0M

**Projected In-Service:** 12/31/2027

**Project Status:** Engineering

**Model:** 2023 RTEP model for 2028 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

2/5/2024 – V1 – Original version posted to pjm.com