

# Subregional RTEP Committee – Mid-Atlantic FirstEnergy (Penelec) Supplemental Projects

September 15, 2022

# 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-2022-002

**Process Stage:** Solution Meeting 9/15/2022

**Previously Presented:** Need Meeting 2/17/2022

**Project Driver:**

- Equipment material condition, performance and risk
- Operational Flexibility and Efficiency

**Specific Assumption Reference:**

System Performance

- Network radial lines

Operational Flexibility

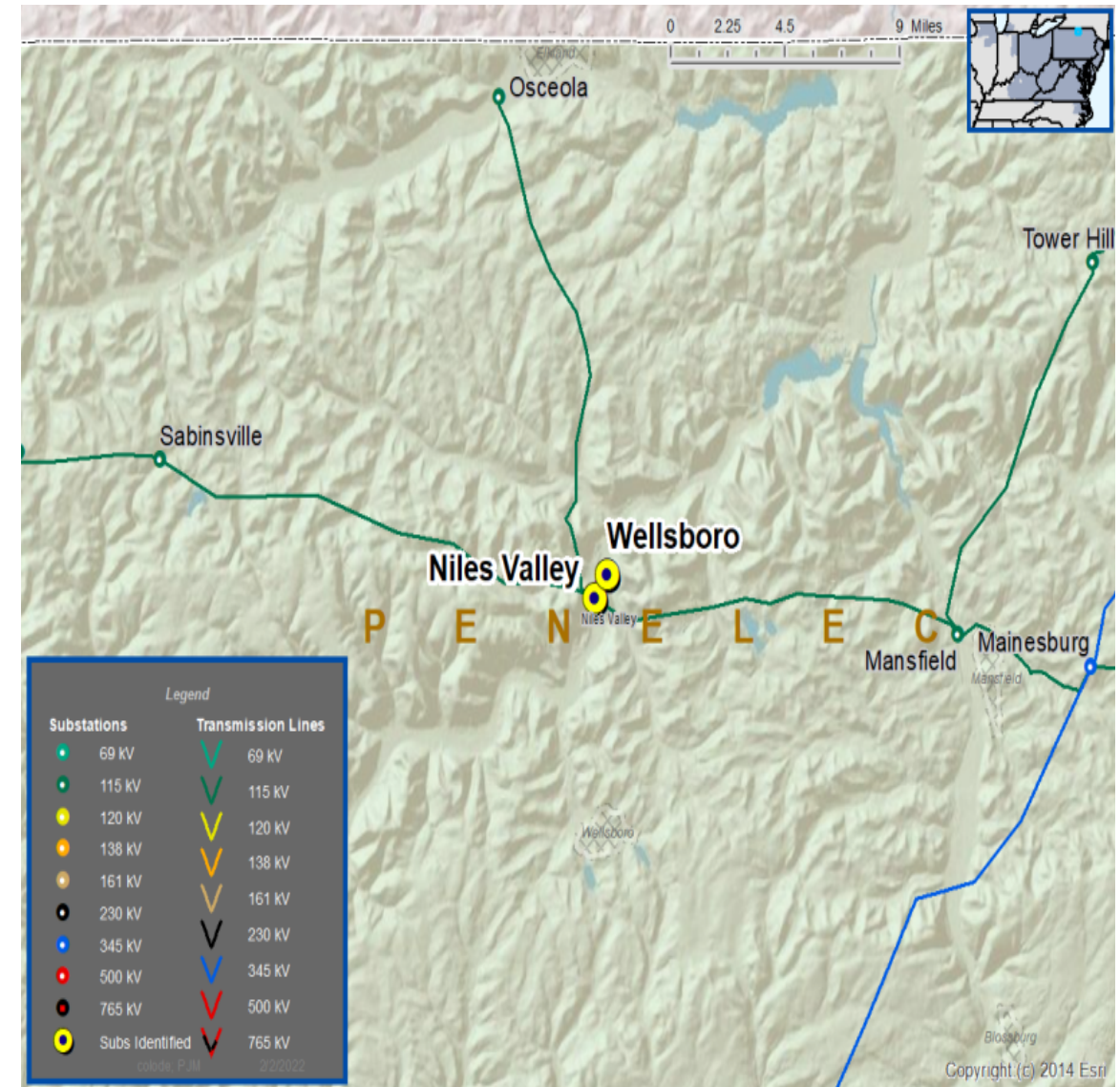
**Problem Statement:**

The Niles Valley - Wellsboro 115 kV line serves 23 MW of customer load via an approximate 6.3 mile radial line extension. The delivery point on the radial 115 kV line serves approximately 6,300 customer with no transfer capability. The line is expected to experience long duration outages for breaker and bus maintenance. Furthermore, a transformer fault, stuck bus tie breaker, or bus outage of the East most 115 kV bus at Niles Valley would outage all load and customers served via the Niles Valley – Wellsboro 115 kV line for the outage duration or minimally until switching, isolations, and restorations can be executed. The transmission line is terminal limited but does have adequate capacity for serving the radial load.

Transmission line rating is limited by terminal equipment.

Niles Valley – Wellsboro 115 kV (substation conductor)

- Existing line rating: 147 / 191 MVA (SN / SE)
- Existing conductor rating: 232 / 282 MVA (SN / SE)



**Need Number:** PN-2022-002

**Process State:** Solutions Meeting 9/15/2022

**Proposed Solution:**

Niles Valley - Wellsboro 115 kV line and Niles Valley – Mansfield 115 kV line.  
- Install a 115 kV bypass via a 1200 A full load break disconnect with SCADA

**Transmission Line Ratings:**

- Niles Valley - Wellsboro 115 kV Line
  - Before Proposed Solution: 147 / 191 MVA (SN / SE)
  - After Proposed Solution: 147 / 191 MVA (SN / SE)
- Niles Valley - Mansfield 115 kV Line
  - Before Proposed Solution: 147 / 174 MVA (SN/SE)
  - After Proposed Solution: 147 / 174 MVA (SN/SE)

**Alternatives Considered:**

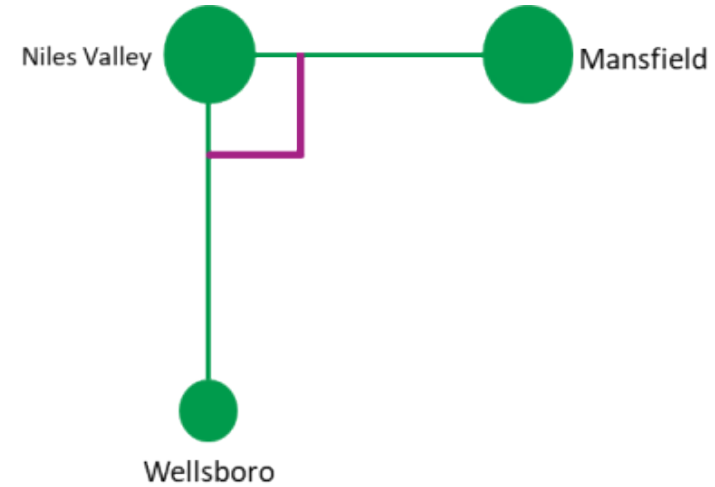
- Network the 115 kV radial- Networking the radial line will require extensive line construction including new ROW. In addition, a ring bus substation will be required to network the new line. This solution was deemed cost prohibitive in relation to the project need.
- Create a 115 kV ring bus- This solution was deemed cost prohibitive in relation to the project need.

**Estimated Project Cost:** \$1.0 M

**Projected In-Service:** 6/1/2024

**Project Status:** Conceptual

**Model:** 2021 RTEP model for 2026 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-2022-003

**Process Stage:** Solution Meeting 9/15/2022

**Previously Presented:** Need Meeting 6/13/2022

**Project Driver:**

- Equipment material condition, performance and risk
- Operational Flexibility and Efficiency

**Specific Assumption Reference:**

System Reliability and Performance

- Line Condition Rebuild/Replacement
  - Failure risk, age and condition, obsolescence, operational or design limitations
- Operational Flexibility

**Problem Statement:**

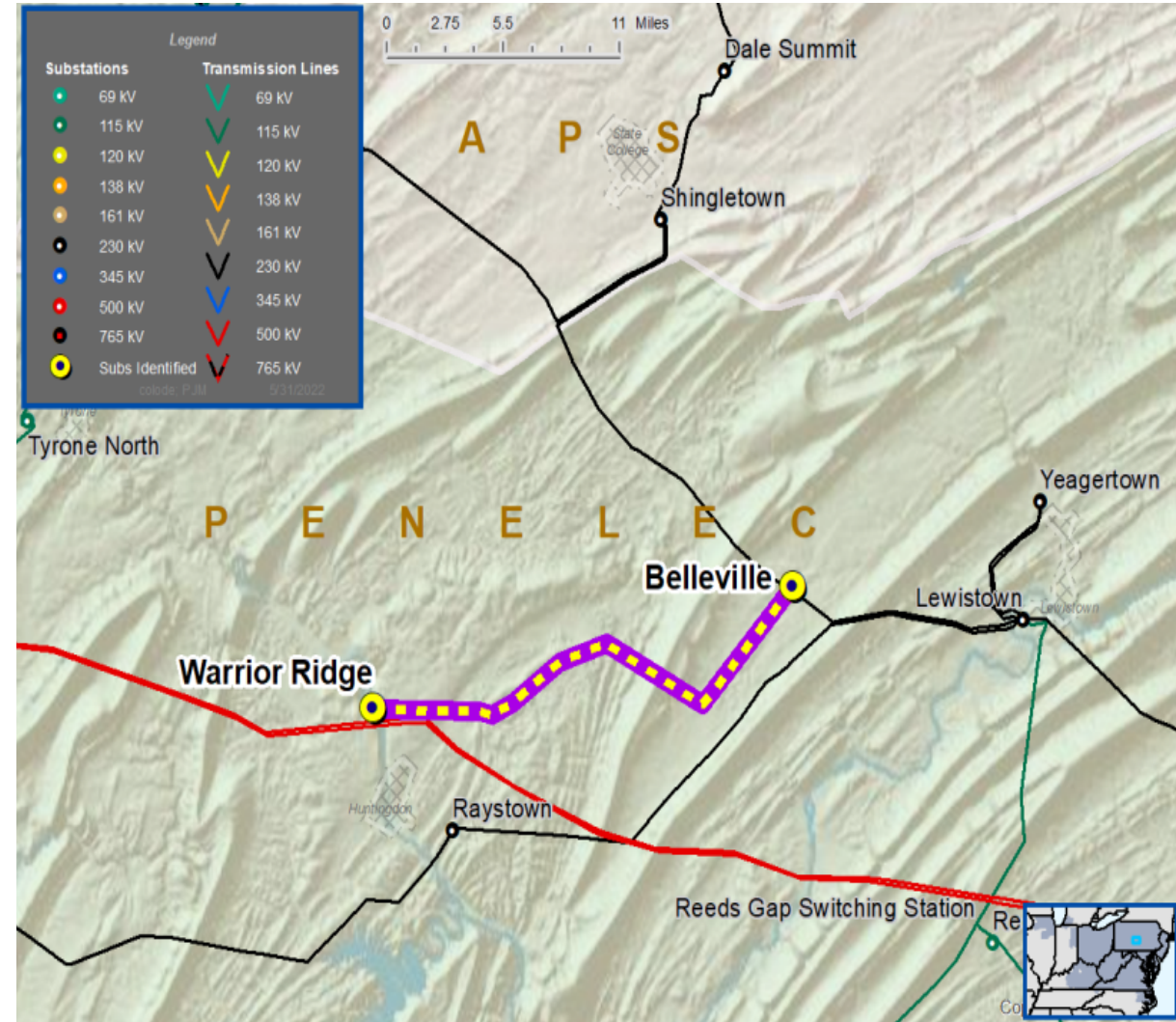
The Belleville – MacLane Tap 46 kV line conductor has been confirmed to be annealed after experiencing a substantial fault condition.

Upon inspection after the fault condition, most of the poles have been found to be in deteriorated condition with broken cross arms, animal damage, and failed sound testing.

FirstEnergy has replaced failed poles on this line section and has executed several emergency repairs of breaks in the annealed conductor.

The line is currently limited by the conductor.

- Existing line rating: 27 / 28 MVA (SN / SE)







# Penelec Transmission Zone M-3 Process Belleville (Warrior Ridge) 46 kV Line

**Need Number:** PN-2022-003

**Process State:** Solution Meeting 9/15/2022

**Proposed Solution:**

Belleville – MacLane Tap 46 kV line

- Reconductor line from Belleville to Belleville New Holland Tap
- Reconductor line from Belleville New Holland Tap to structure D-800A81
- Replace switches at Belleville and Belleville New Holland Tap
- Reconductor the Belleville New Holland Tap

**Transmission Line Ratings:**

- Belleville – Belleville New Holland Tap 46 kV Line
  - Before Proposed Solution: 27 / 28 MVA (SN / SE)
  - After Proposed Solution: 93 / 113 MVA (SN / SE)
- Belleville New Holland Tap – MacLane 46 kV Line
  - Before Proposed Solution: 27 / 28 MVA (SN/SE)
  - After Proposed Solution: 55 / 69 MVA (SN/SE)
- Belleville New Holland – Belleville New Holland 46 kV Tap
  - Before Proposed Solution: 19 / 23 MVA (SN/SE)
  - After Proposed Solution: 55 / 69 MVA (SN /SE)

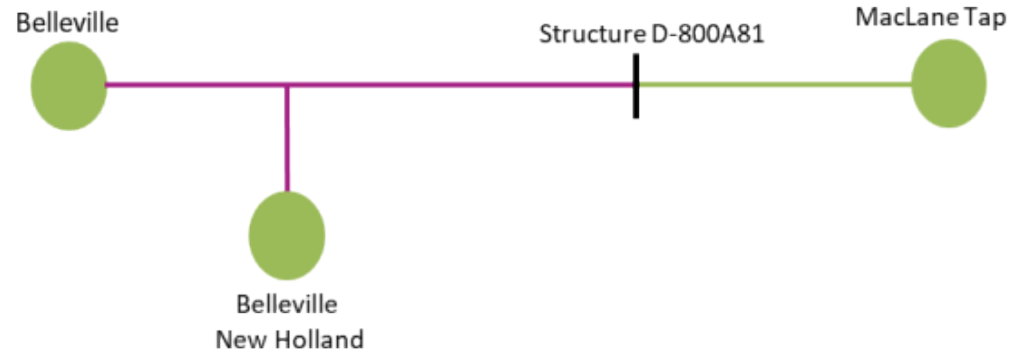
**Alternatives Considered:**

- None

**Estimated Project Cost:** \$13.4M

**Projected In-Service:** 12/31/2024

**Project Status:** Conceptual



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

# 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

9/2/2021 – V1 – Original version posted to pjm.com