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

April 14, 2021

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
Raystown – McConnellstown 46 kV Switch Replacements

Need Number: PN-2020-014
Process Stage: Solution Meeting 04/14/2021
Previously Presented: Need Meeting 05/22/2020

Project Driver:
Equipment Material Condition, Performance and Risk
Operational Flexibility and Efficiency

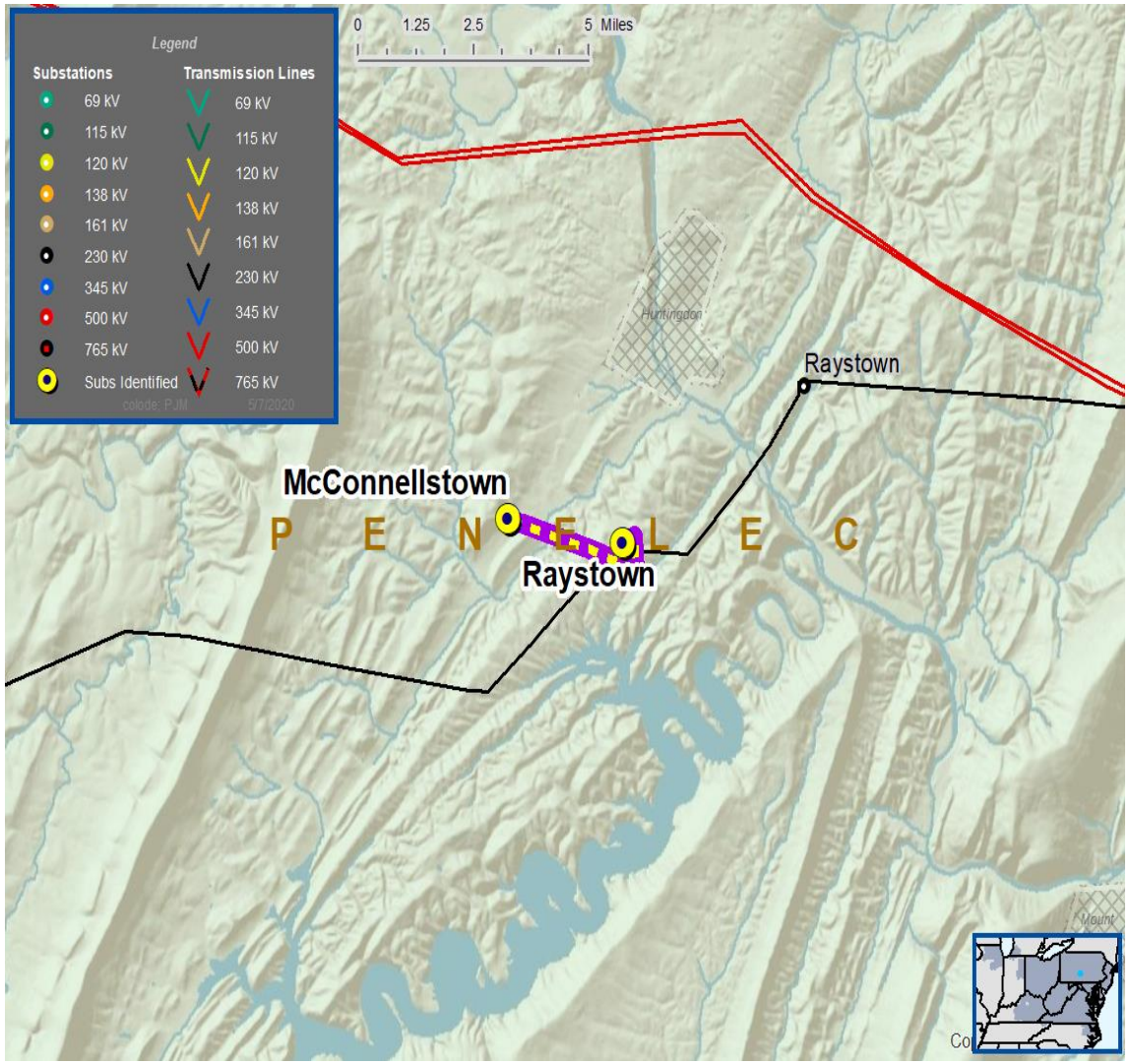
Specific Assumption Reference:
System Condition Projects
- Line Condition Rebuild/Replacement
  - Transmission Line Switches

System Performance Projects
- Substation/line equipment limits
- Load at risk in planning and operational scenarios

Problem Statement:
The Raystown – McConnellstown 46 kV line has three in-line switches (A-136, A-137, and A-139) that are in degraded condition and have limited availability of spare parts. The existing switches have operational limitations. The motor control units are no longer supported by the manufacturer. Inability to sectionalize this line results in loss of approximately 9 MW of load and approximately 1,136 customers, including a REA.

Transmission line ratings are limited by terminal equipment.
- Allegheny Hydro Tap – Allegheny Hydro 46 kV line rating is limited by the transmission line conductor 52 / 62 MVA (SN/SE).
- Allegheny Hydro Tap – RAM Junction 46 kV line rating is 55 / 69 MVA (SN/SE) and the transmission line conductor rating is 59 / 71 MVA (SN/SE). (disconnect switch)
- RAM Junction – Piney Ridge 46 kV line rating is 55 / 69 MVA (SN/SE) and the transmission line conductor rating is 59 / 71 MVA (SN/SE). (disconnect switch)

Model: 2020 RTEP model for 2025 Summer (50/50)



Penelec Transmission Zone M-3 Process
Raystown – McConnellstown 46 kV Switch Replacements

Need Number: PN-2020-014

Process Stage: Solution Meeting 04/14/2021

Proposed Solution:

Raystown – McConnellstown 46 kV Switch Replacements

- Replace in-line switches A-136, A-137, and A-139

Transmission Line Ratings:

Allegheny Hydro Tap – Allegheny Hydro 46 kV Line
- Before Proposed Solution: 52 / 62 MVA (SN/SE)
- After Proposed Solution: 52 / 62 MVA (SN/SE)

Allegheny Hydro Tap – RAM Junction 46 kV Line
- Before Proposed Solution: 55 / 69 MVA (SN/SE)
- After Proposed Solution: 59 / 71 MVA (SN/SE)

RAM Junction – Piney Ridge 46 kV Line
- Before Proposed Solution: 55 / 69 MVA (SN/SE)
- After Proposed Solution: 59 / 71 MVA (SN/SE)

Alternatives Considered:

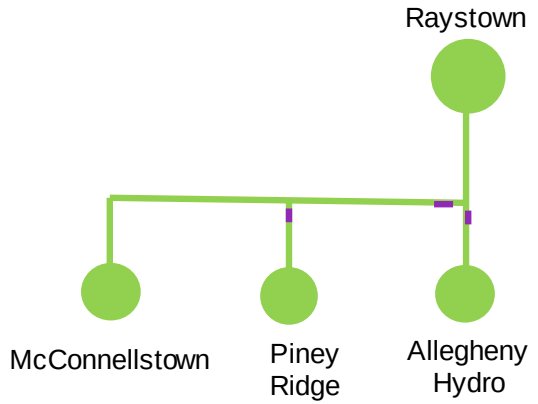
- Maintain existing condition

Estimated Project Cost: $1.5M

Projected In-Service: 12/31/2022

Project Status: Conceptual

Model: 2020 Series 2025 Summer RTEP 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-2021-002

Process State: Solution Meeting 4/14/2021

Previously Presented: Need Meeting 3/18/2021

Project Driver:

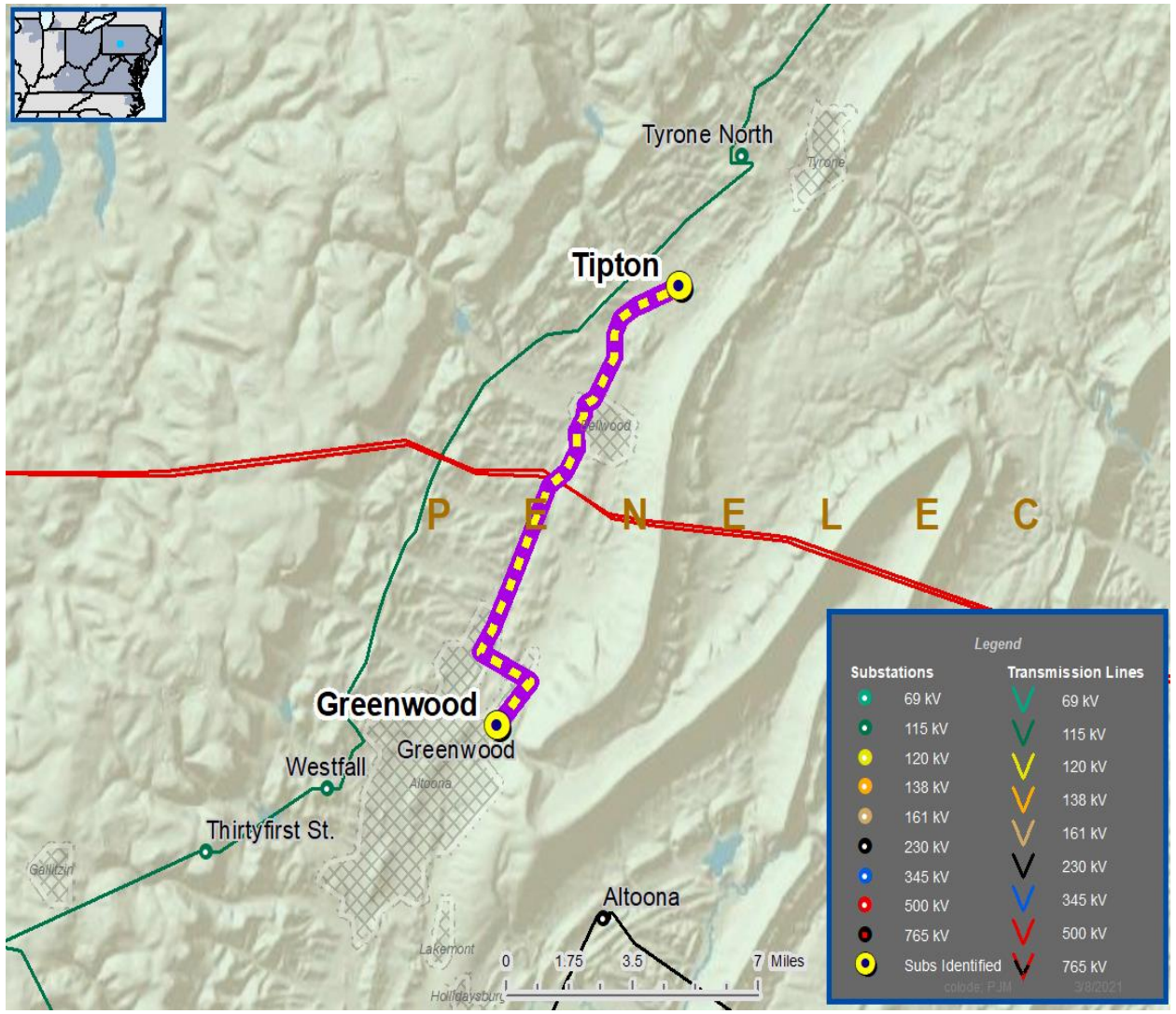
Customer Service

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 46 kV service for load of approximately 12 MW near the Greenwood – Tipton 49 kV line. Requested in-service date is 7/2021.



Penelec Transmission Zone M-3 Process
Customer Connection

Need Number: PN-2021-002

Process State: Solutions Meeting 4/14/2021

Proposed Solution:

Provide 46 kV Service:

- Tap the Greenwood – Tipton 46 kV line (Gardner Denver Tap – Gardner Denver 46 kV line segment)
- Construct one span of 46 kV line
- Install one 46 kV revenue metering package
- Install two 1200 A SCADA controlled disconnect switches
- Add SCADA to one existing switch

Alternatives Considered:

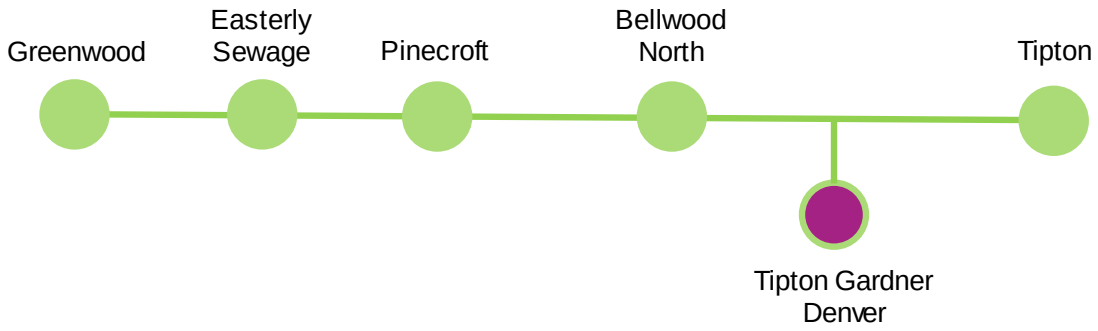
- None

Estimated Project Cost: $1.4M

Projected In-Service: 7/1/2021

Project Status: Engineering

Model: 2020 RTEP model for 2025 Summer (50/50)



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

4/2/2021 – V1 – Original version posted to pjm.com