

Subregional RTEP Committee – Mid-Atlantic FirstEnergy Supplemental Projects

March 14, 2024

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: ME-2024-002

Process Stage: Need Meeting 03/14/2024

Project Driver:

*Equipment Material Condition, Performance, and Risk
Operational Flexibility and Efficiency*

Specific Assumption Reference:

System Performance Global Factors

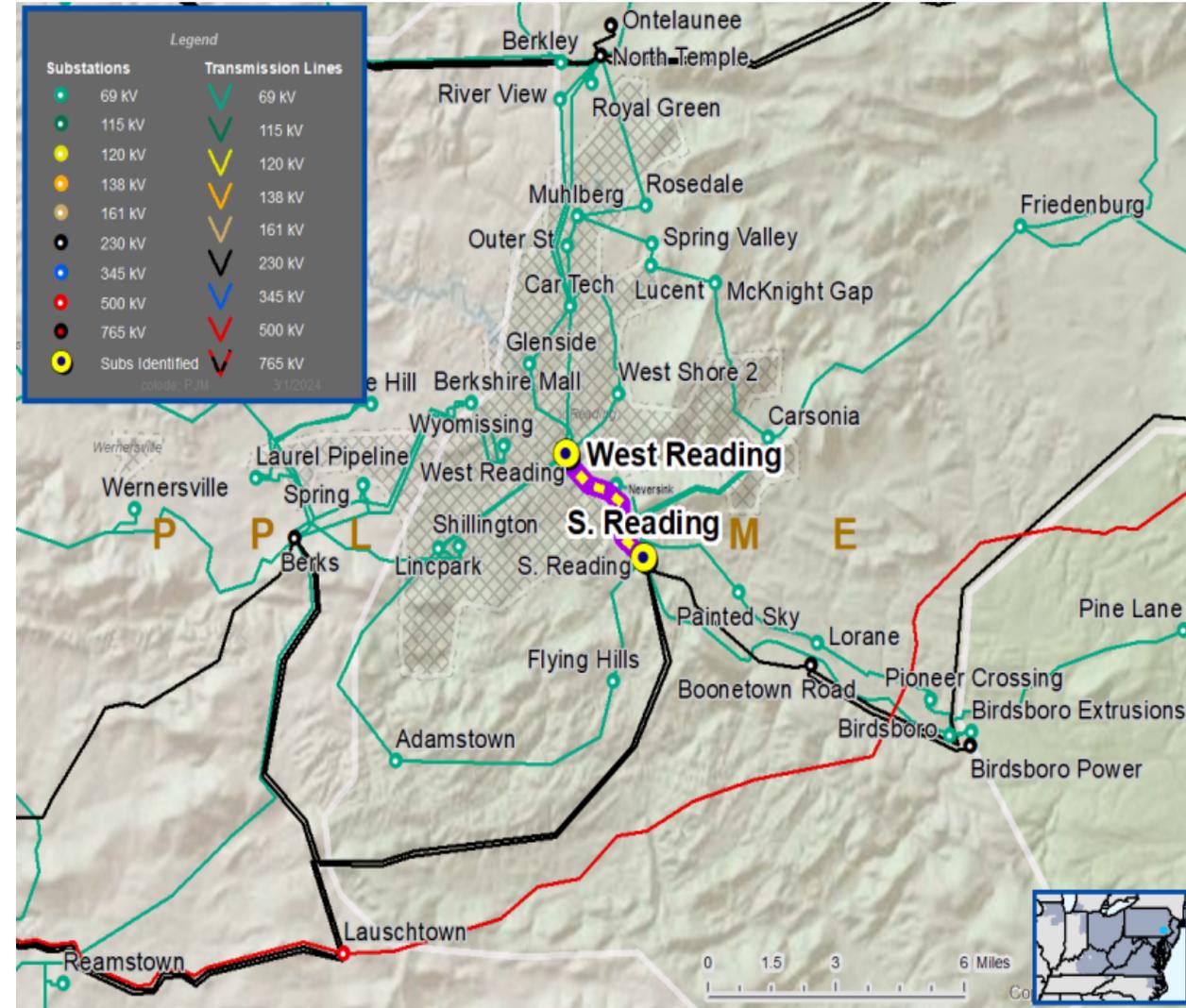
- Past system reliability/performance
- Substation/Line equipment limits

Line Condition Rebuild/Replacement

- Age/condition of wood pole transmission line structures

Problem Statement:

- The South Reading – West Reading 69 kV Line was constructed 65 years ago. The line is approximately 2.8 miles long with 55 wooden H-frame structures.
- Recent inspections have indicated that the line is exhibiting deterioration. Inspection findings include woodpecker damage, top rot, groundline decay and cracking. These findings have resulted in increased maintenance costs.
- There have been five unscheduled outages due to broken crossarms and braces in the last ten years, two of the outages occurred in 2023.
- The South Reading and West Reading 69 kV breaker relays are vintage electromechanical equipment.
- The line is currently limited by terminal equipment.
- Existing Transmission Line Ratings:
 - 132 / 158 / 158 / 180 MVA (SN/SE/WN/WE)



Need Number: ME-2024-005

Process Stage: Need Meeting 03/14/2024

Project Driver:

Operational Flexibility and Efficiency

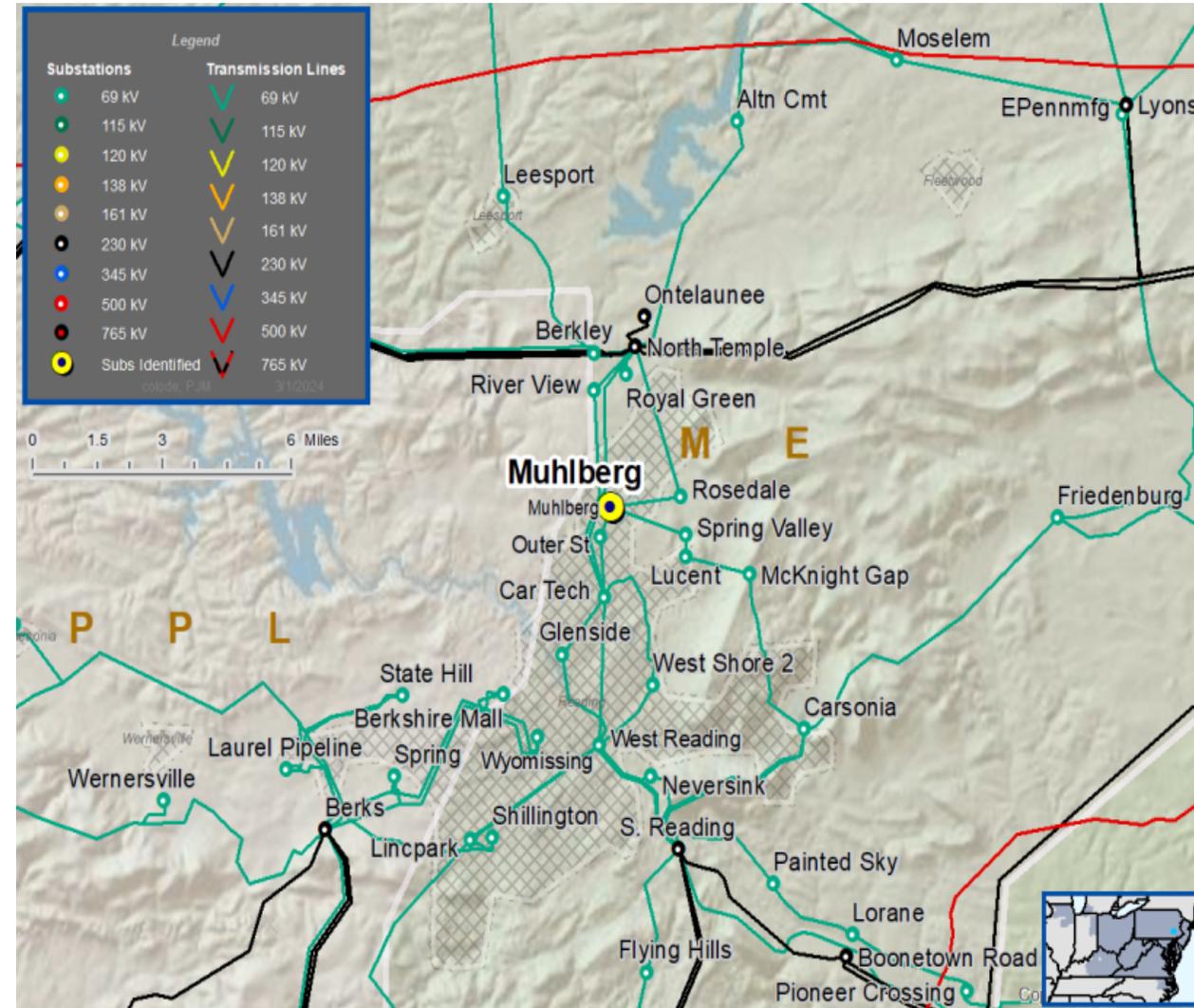
Specific Assumption Reference:

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 loss of the Muhlenberg Substation interrupts service to approximately 3,000 customers with an estimated load of 33 MW. A stuck bus tie breaker can result in a total loss of supply at the Muhlenberg Substation.
- Muhlenberg Substation consists of:
 - Three networked 69 kV transmission lines
 - Three distribution transformers connected to the bus with switches
 - Bus tie breaker





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

3/04/2024 – V1 – Original version posted to pjm.com

3/07/2024 – V2 – Added FE Logo on slide deck