Transmission Expansion Advisory Committee – PPL Supplemental Projects

April 02, 2024

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

PPL Transmission Zone: Supplemental

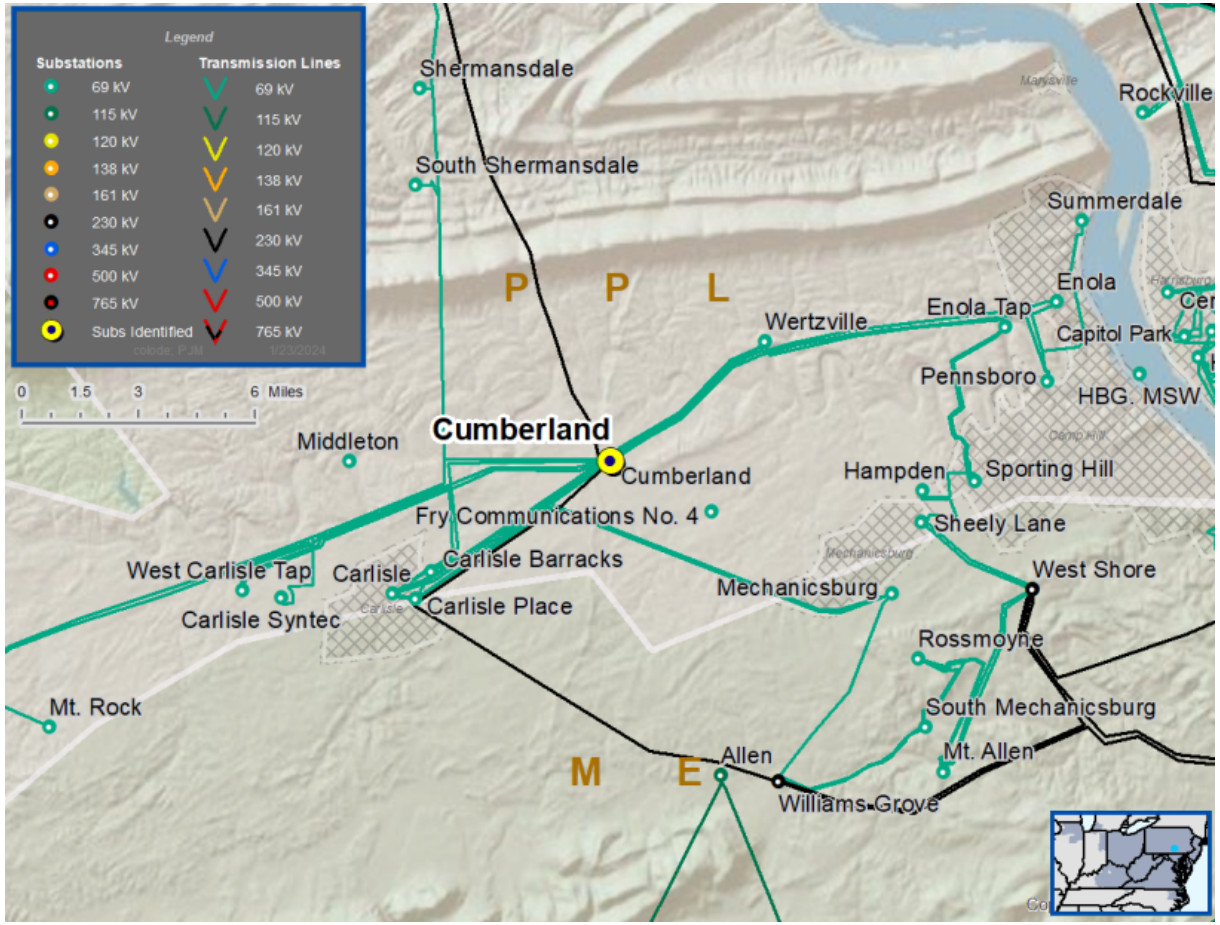
Need Number: PPL-2024-0001

Meeting Date: 04/02/2024

Process Stage: Solution

Need Presented: 02/06/2024

Supplemental Project Driver: Customer Service



Problem Statement:

- A customer has submitted a request to have their facility served from a 138kV source in New Kingston, PA. The total facility load is approximately 1,275 MW (2032). The requested in service date is 03/2026.

Initial In-Service Load	Projected 2028 Load	Projected 2030 Load
Summer 2026: 40MW Winter 2026-27: 108 MW	Summer: 405 MW Winter: 540 MW	Summer: 1,000 MW Winter: 1,040 MW

Specific Assumption References:

[PPL 2024 Annual Assumptions]

PPL Transmission Zone: Supplemental

Need Number: PPL-2024-0001

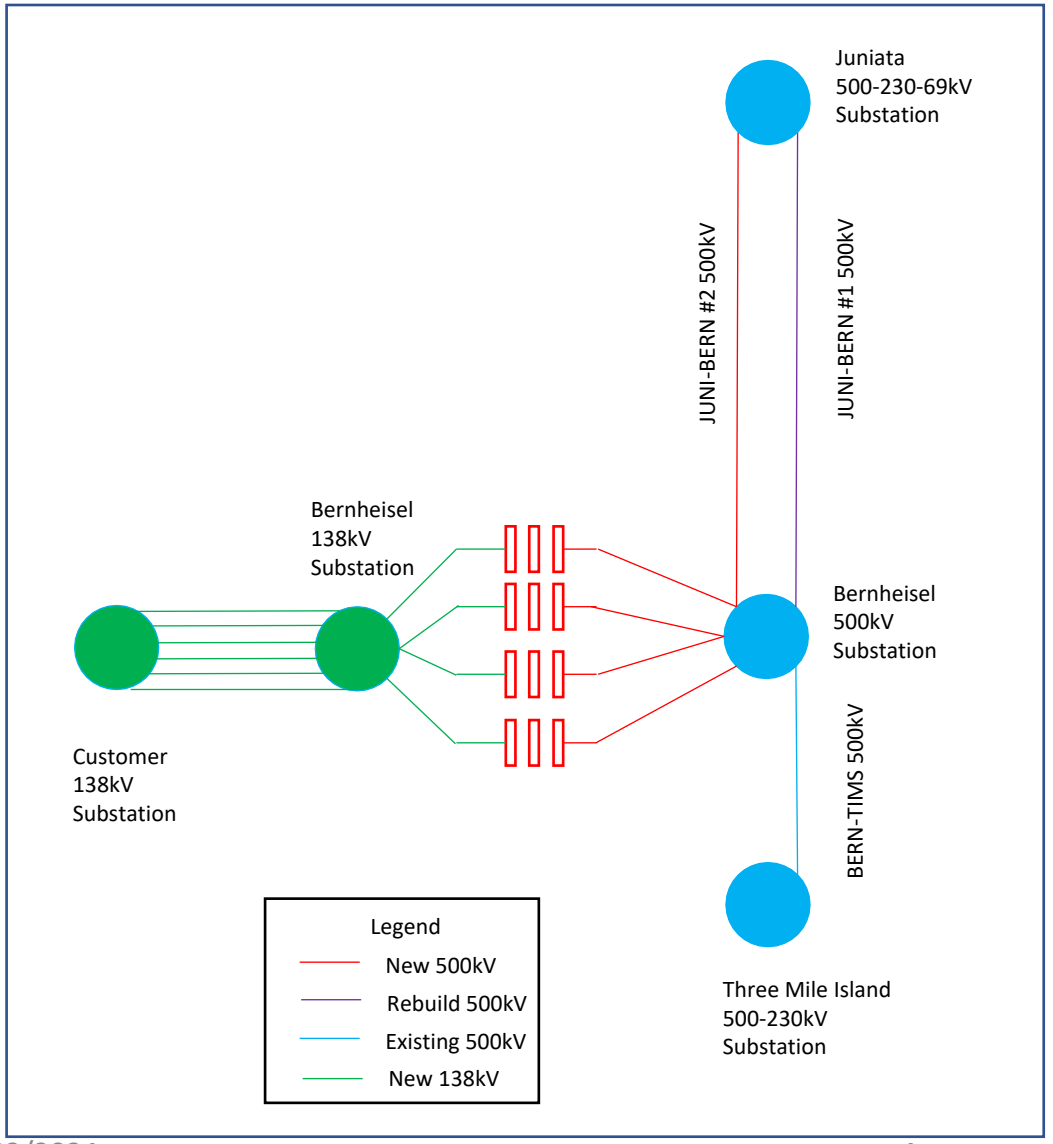
Proposed Solution:

- Break the existing Juniata (JUNI)-Three Mile Island (TMIS) 500kV line and extend the lines 0.1 miles into a new four bay Bernheisel (BERN) 500kV breaker-and-a-half yard.
- Rebuild the existing JUNI-TMIS 500kV line to double circuit for 13.3 miles from Juniata substation to Bernheisel substation.
  - PPL's standard is to have three sources into a BES substation.
- Install four 500-138kV transformers.
- Install a six bay 138kV yard.
- Install two 138kV capacitor banks.
- Extend six 138kV lines to customer facility

Alternatives Considered:

1. 230kV Option: Install a four bay 230kV BAAH yard (BERN) with four 230-138kV XFMRs, 230kv cap bank, six bay 138kV BAAH yard, and two 138kV capacitors. Rebuild the JUNI-BERN, BERN-CUMB, and CUMB-WIGR 230kV lines to double circuit. Install new terminals at JUNI, CUMB, and WIGR 230kV yards. Rebuild WIGR-WSHO/WIGR-BRIS and JUNI-DAUP/LEWI-JUNI 230kV double circuit lines. Rebuild the single circuit HUMM-STEE 230kV line. Replace both Juniata 500-230kV XFMRs with larger units. Estimated cost: $293M.
2. 500kV & 230kV Option: Install five bay 230kV BAAH yard (BERN) with four 230-138kV XFMRs, 230kv cap bank, six bay 138kV BAAH yard, and two 138kV capacitors. Install a three bay 500kV BAAH yard with two 500-230kV XFMRs. Rebuild the JUNI-BERN 230kV line to double circuit and install new terminal at JUNI 230kV yard. Re-terminate the JUNI-KEYS and JUNI-SUNB lines at JUNI and install a third 500-230kV transformer at JUNI. Estimated cost: $260M.

Estimated Project Cost: $244M
Projected In-Service: 6/30/2026
Project Status: Conceptual
Model: 2028



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

3/21/2024 - V1 – Original version posted to pjm.com