

Transmission Expansion Advisory Committee

FirstEnergy Supplemental Projects

JCPL Transmission Zone

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: JCPL-2026-045

Process Stage: Solution Meeting – TEAC – 10/06/2026

Previously Presented: Need Meeting – TEAC – 08/04/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

System Performance Projects Global Factors

- System reliability/performance
- Substation/Line equipment limits

Substation Condition Rebuild/Replacement

- Age/condition of substation equipment
- Circuit breakers and other fault interrupting devices

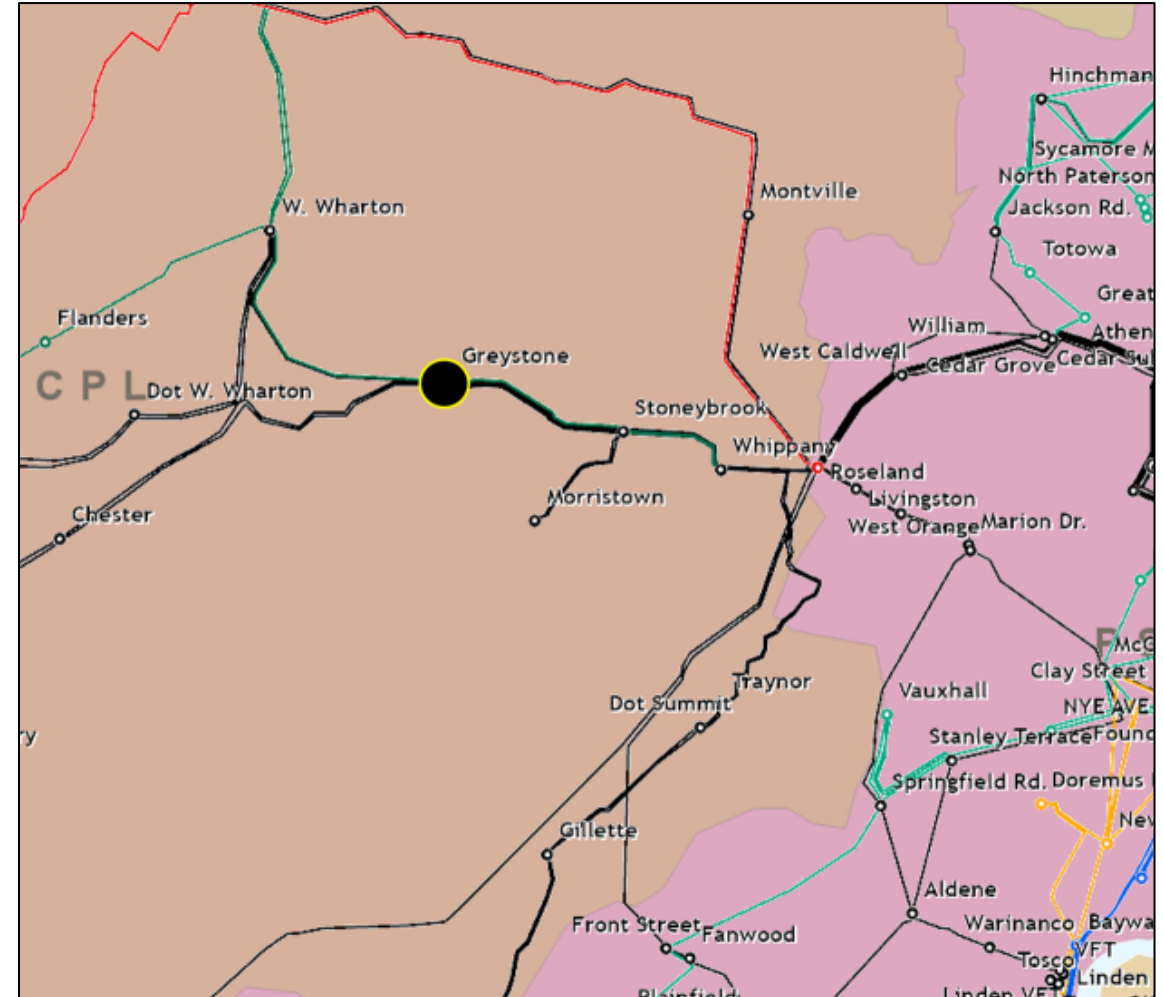
Problem Statement:

The existing Greystone 34.5 kV breakers B756, B37, B39, BK1B, L38, M741A, M741B, BK2A, and G70 are 29 years old and are approaching end of life.

The existing Greystone 230 kV circuit switchers: CS12 and CS21 are 30 years old and are approaching end of life.

Replacement components are difficult to source.

Cont'd on next slide...





JCPL Transmission Zone M-3 Process Greystone Substation Breaker Replacements

Need Number: JCPL-2026-045

Problem Statement:

Problem Statement: *(Cont'd from previous slide)*

The lines are currently limited by terminal equipment.

Existing Line Ratings:

- Greystone - Foll Hill G709 34.5 kV Line Section: 45 / 57 / 45 / 58 MVA (SN/SE/WN/WE)
- Greystone - Chilcott L38 34.5 kV Line Section: 52 / 62 / 63 / 71 MVA (SN/SE/WN/WE)
- Greystone - Denville B756 34.5 kV Line Section: 42 / 50 / 50 / 57 MVA (SN/SE/WN/WE)
- Greystone - Denville A755 34.5 kV Line Section: 44 / 53 / 50 / 54 MVA (SN/SE/WN/WE)
- Greystone - West Denville Y753 34.5 kV Line Section: 41 / 49 / 51 / 56 MVA (SN/SE/WN/WE)

Existing Conductor Ratings:

- Greystone - Foll Hill G709 34.5 kV Line: 45 / 58 / 58 / 58 MVA (SN/SE/WN/WE)
- Greystone - Chilcott L38 34.5 kV Line: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)
- Greystone - Denville B756 34.5 kV Line: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)
- Greystone - Denville A755 34.5 kV Line: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)
- Greystone - West Denville Y753 34.5 kV Line: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)

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Proposed Solution:

At Greystone Substation:

- Replace 34.5 kV breakers B756, B37, B39, BK1B, L38, M741A, M741B, BK2A, G70.
- Replace 230 kV BK1 and BK2 circuit switchers with circuit breakers.
- Replace substation conductors and relay upgrades.
- Replace both the line and bus side associated disconnect switches for breakers, PTs and station service transformer.

Ratings:

Greystone - Montville 34.5 kV G709 Line:

- Before Proposed Solution: 45 / 57 / 45 / 58 MVA (SN/SE/WN/WE)
- After Proposed Solution: 45 / 58 / 45 / 58 MVA (SN/SE/WN/WE)

Greystone - Rockaway 34.5 kV Y753 Line:

- Before Proposed Solution: 41 / 49 / 50 / 56 MVA (SN/SE/WN/WE)
- After Proposed Solution: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)

Greystone - Morristown 34.5 kV L38 Line:

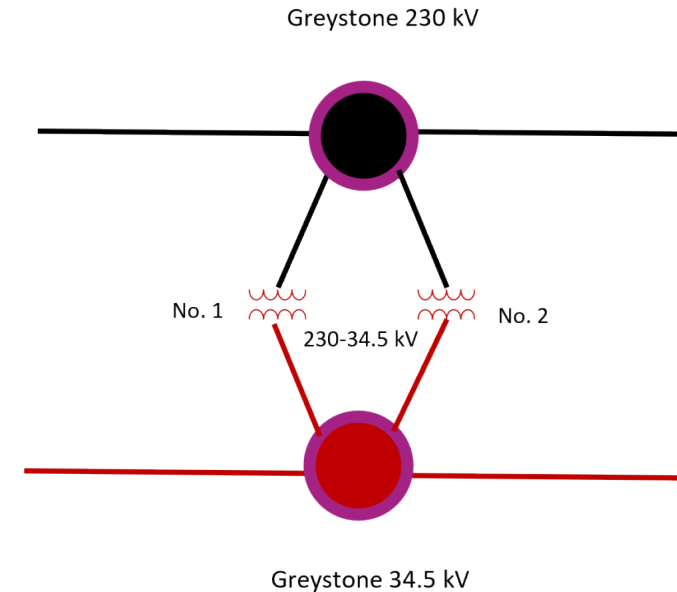
- Before Proposed Solution: 52 / 62 / 63 / 71 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Greystone - Montville 34.5 kV B756 Line:

- Before Proposed Solution: 42 / 50 / 50 / 57 MVA (SN/SE/WN/WE)
- After Proposed Solution: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)

Greystone - Rockaway 34.5 kV A755 Line:

- Before Proposed Solution: 44 / 53 / 50 / 54 MVA (SN/SE/WN/WE)
- After Proposed Solution: 44 / 53 / 50 / 63 MVA (SN/SE/WN/WE)



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



JCPL Transmission Zone M-3 Process Greystone Substation Breaker Replacements

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Alternatives Considered:

Maintain existing condition with elevated risk of failure.

Estimated Project Cost:	\$9.71 M
Projected In-Service:	12/15/2029
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

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

09/25/2026 – V1 – Original version posted to pjm.com