Subregional RTEP Committee – Mid-Atlantic
FirstEnergy Supplemental Projects

Penelec 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

Penelec Transmission Zone M-3 Process
East Towanda - North Meshoppen ETL 115 kV Line - Customer Connection

Need Number: PN-2025-008

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 11/13/2025

Project Driver:

Customer Service

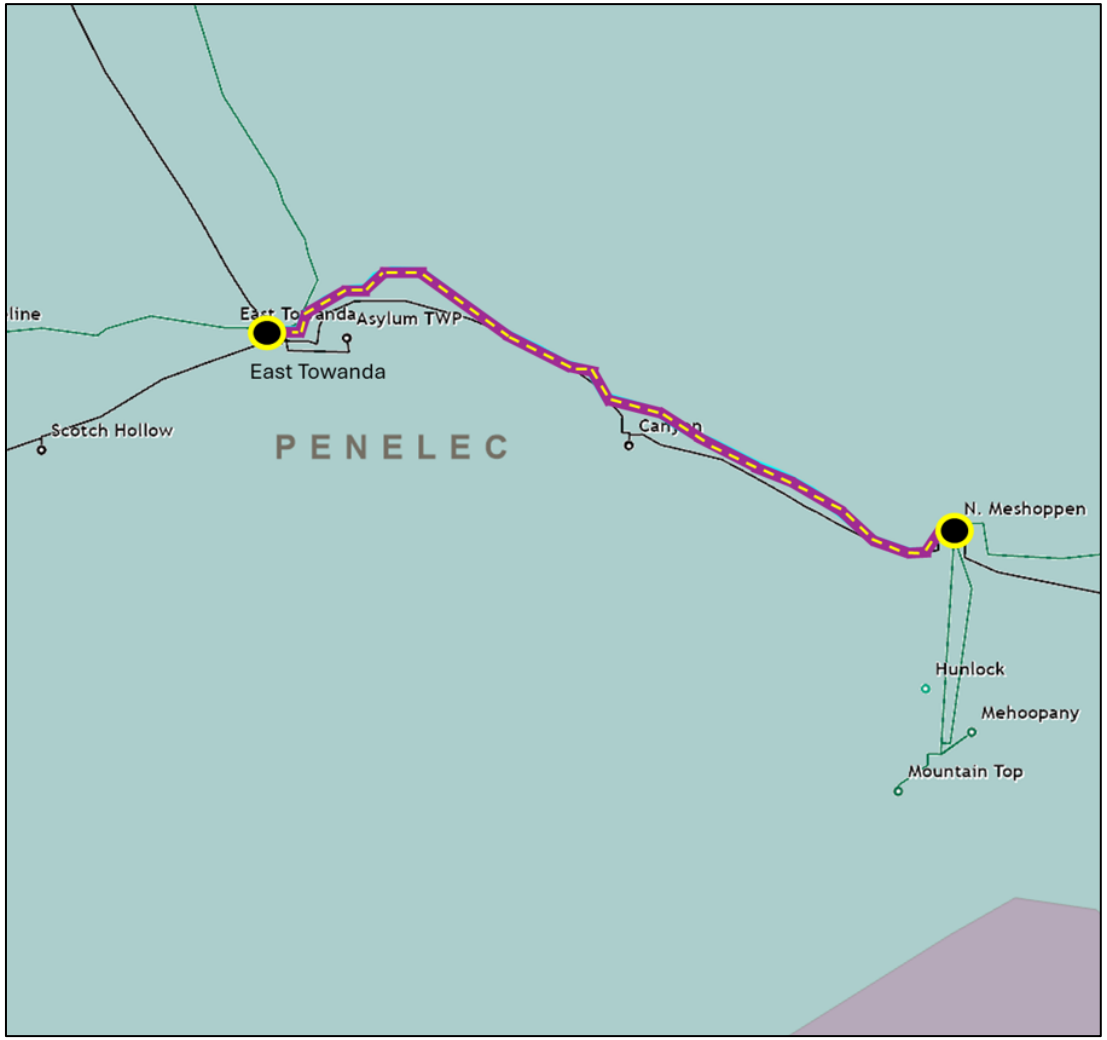
Specific Assumption References:

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 retail customer requested 115 kV service for load of approximately 50 MVA near the East Towanda - North Meshoppen 115 kV Line. The request is approximately 11 miles from North Meshoppen Substation.

Requested in-service date is 12/31/2026.



Penelec Transmission Zone M-3 Process
East Towanda - North Meshoppen ETL 115 kV Line - Customer Connection

Need Number: PN-2025-008

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Proposed Solution:

- Construct a 115 kV line tap by installing three 115 kV line switches.
- Construct approximately 6 miles of new 115 kV transmission line from the tap location to the customer substation.
- Install 115 kV revenue metering.
- Adjust relay settings at East Towanda and North Meshoppen substations.

Ratings:

East Towanda-North Meshoppen 115 kV Line:

- Before Proposed Solution: 202 / 245 / 228 / 290 MVA (SN/SE/WN/WE)
- After Proposed Solution: 202 / 245 / 228 / 290 MVA (SN/SE/WN/WE)

Alternatives Considered:

No reasonable alternatives due to the customer's proximity to the East Towanda – North Meshoppen ETL 115 kV Line.

Estimated Project Cost:	$16.00 M
Projected In-Service:	07/20/2029
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

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

Penelec Transmission Zone M-3 Process
Glory - Nanty Glo - Spangler 46 kV Line - Replace Line Switches

Need Number: PN-2026-007

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 06/16/2026

Project Driver:

Equipment Condition/Performance/Risk

Operational Flexibility and Efficiency

Specific Assumption References:

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

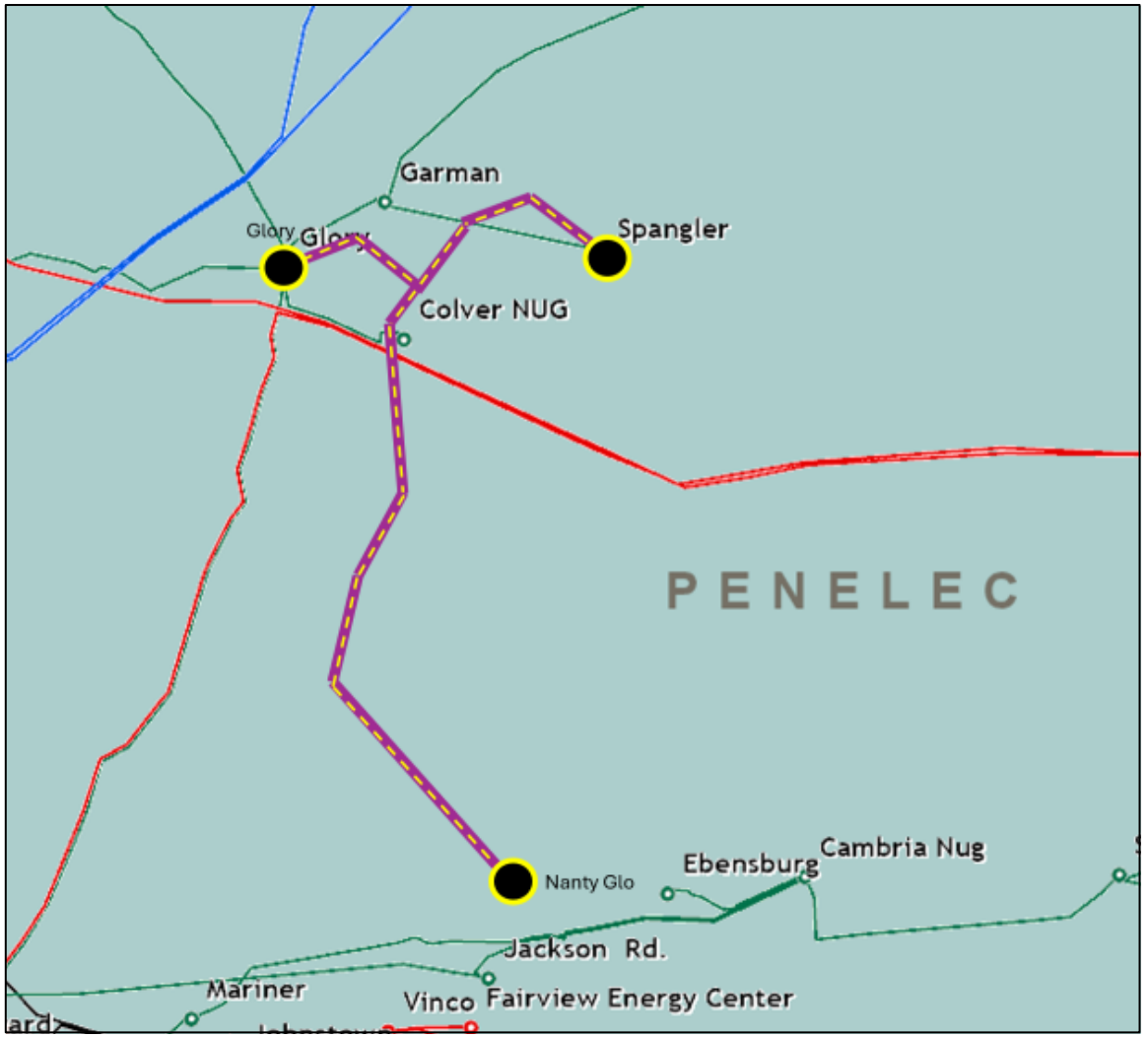
Line Condition Rebuild/Replacement

- Age/condition of line equipment

Problem Statement:

The existing Glory - Nanty Glo - Spangler 46 kV N Line switches (A-111, A-112, and A-113) are 44 years old and are approaching end of life. Replacement components are difficult to source leading to non-standard repair.

The line is currently limited by terminal equipment.



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Need Number: PN-2026-007

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

Glory - Nicktown Ckt (A-112 Switch) (Glory - Nanty Glo - Spangler 46 kV N Line)

- Existing Transmission Line Ratings: 34 / 44 / 49 / 55 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 49 / 50 / 55 / 55 MVA (SN/SE/WN/WE)

Nicktown - Moss Creek Ckt (A-111 Switch) (Glory - Nanty Glo - Spangler 46 kV N Line)

- Existing Transmission Line Ratings: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 81 / 98 / 91 / 116 MVA (SN/SE/WN/WE)

Teakettle - Nicktown Ckt (A-113 Switch) (Glory - Nanty Glo - Spangler 46 kV N Line)

- Existing Transmission Line Ratings: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 81 / 98 / 91 / 116 MVA (SN/SE/WN/WE)

Penelec Transmission Zone M-3 Process
Glory - Nanty Glo - Spangler 46 kV Line - Replace Line Switches

Need Number: PN-2026-007

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Proposed Solution:

- Replace the obsolete 46 kV switches A-111, A-112 & A-113 at Nicktown Substation, remove the 4-pole common structure S-1752 and reconfigure with individual switch structures and a central tap structure. Include SCADA controlled motor operators for all switches.

Ratings:

Nicktown - Glory (A-112) 46 kV Line:

- Before Proposed Solution: 34 / 44 / 49 / 55 MVA (SN/SE/WN/WE)
- After Proposed Solution: 34 / 44 / 49 / 55 MVA (SN/SE/WN/WE)

Nicktown - Moss Creek (A-111) 46 kV Line:

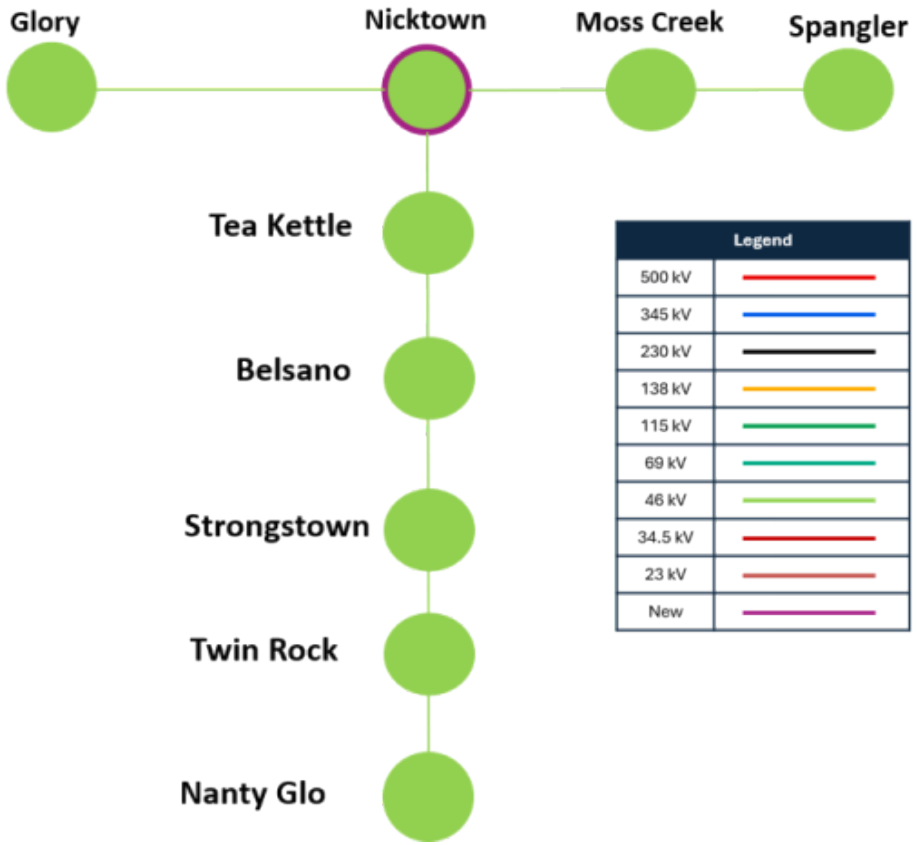
- Before Proposed Solution: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)

Nicktown - Tea Kettle (A-113) 46 kV Line:

- Before Proposed Solution: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 69 / 72 / 83 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain equipment in existing condition with risk of equipment failure due to equipment deterioration.



Estimated Project Cost:	$760,000
Projected In-Service:	10/05/2027
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

Penelec Transmission Zone M-3 Process
Valley REC Miller - Warrior Ridge 46 kV H Line Rebuild

Need Number: PN-2026-010

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Previously Presented: Need Meeting – SRRTEP-MA – 06/16/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

Line Condition Rebuild/Replacement

- Age/condition of copper conductor and wood transmission line structures

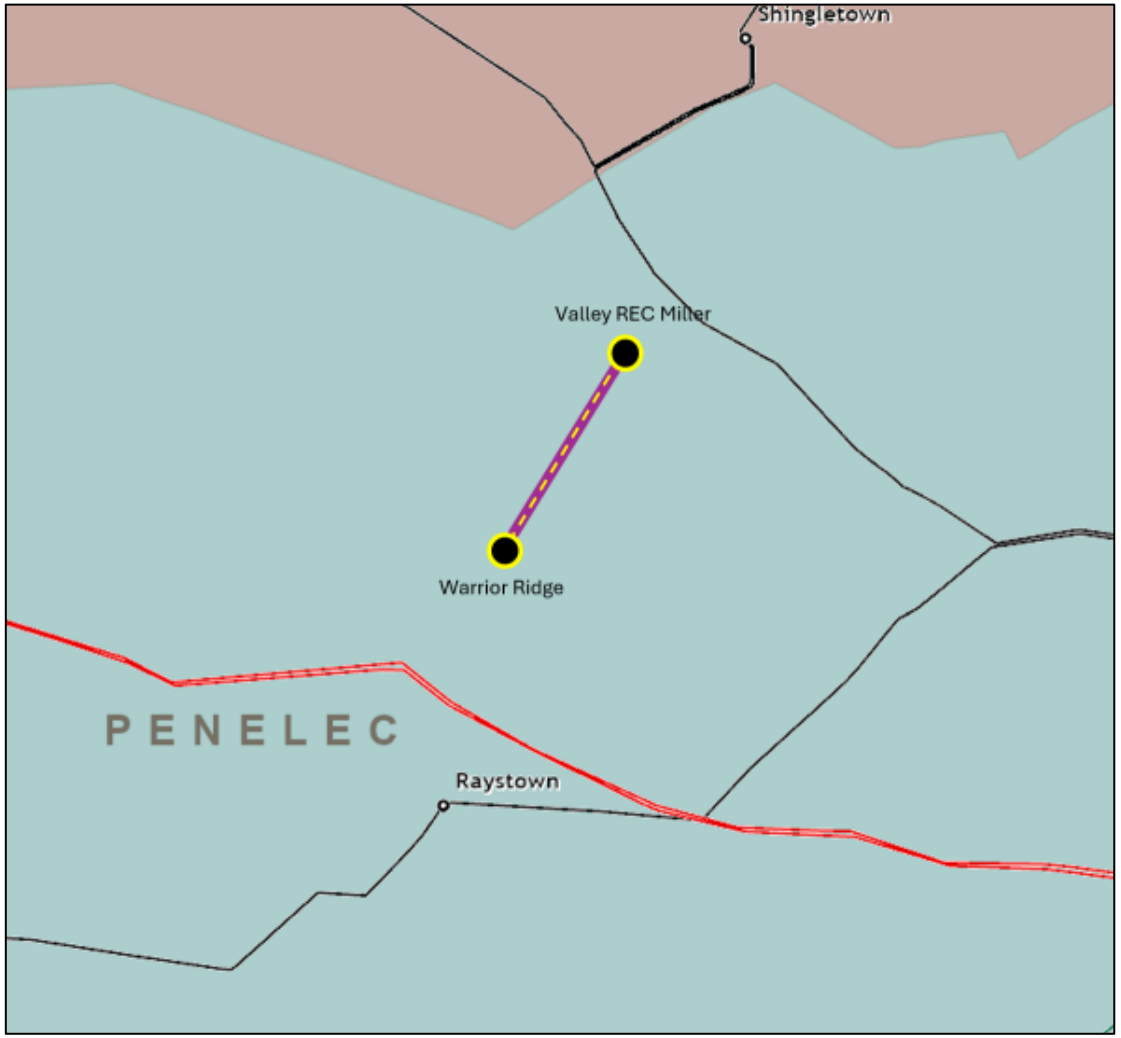
Problem Statement:

The Miller REC (Warrior Ridge) 46 kV Line was constructed approximately 76 years ago and is approaching end of life. It is approximately 8 miles long with 90 wood transmission line structures.

The line conductor is exhibiting deterioration. Inspection findings include:

- No static wire for approximately two miles due to cut and clear after a failure
- Of 35% of structures able to be accessed, three poles failed sound test, and all had woodpecker holes, decay, rot and/or cracking.
- Ten unscheduled outages since 2021 including four due to equipment failures

Existing Transmission Line Ratings: 32 / 32 / 35 / 35 MVA (SN/SE/WN/WE)



Penelec Transmission Zone M-3 Process
Valley REC Miller - Warrior Ridge 46 kV H Line Rebuild

Need Number: PN-2026-010

Process Stage: Solution Meeting – SRRTEP-MA – 09/17/2026

Proposed Solution:

- Rebuild 7.69 miles of the (Miller REC) Warrior Ridge 46 kV H Line using a new conductor.
- Replace relays, substation conductor, and the 46 kV circuit breaker at Warrior Ridge Substation. All equipment to be upgraded is to meet or exceed new transmission line rating.
- Adjust remote-end relaying as necessary.

Ratings:

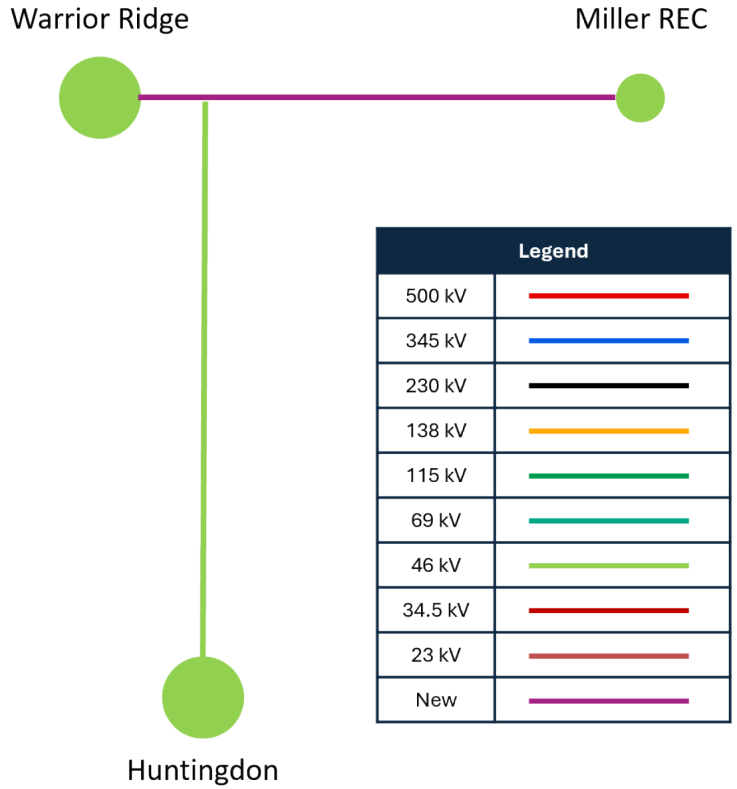
Valley REC Miller - Warrior Ridge 46 kV H Line:

- Before Proposed Solution: 32 / 32 / 35 / 35 MVA (SN/SE/WN/WE)
- After Proposed Solution: 53 / 64 / 60 / 76 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain equipment in existing condition with risk of equipment failure due to equipment deterioration.

Estimated Project Cost:	$14.82 M
Projected In-Service:	12/19/2028
Project Status:	Conceptual
Model:	2025 RTEP model for 2030 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

09/08/2026 – V1 – Original version posted to pjm.com.
09/16/2026 – V2 – Corrected Need Meeting Date on Slide 5 and 8.