Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

APS Transmission Zone

November 13, 2026

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

APS Transmission Zone M-3 Process Misoperation Relays

Need Number: APS-2026-075
Process Stage: Need Meeting SRRTEP-W - 11/13/2026
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:
System Performance Projects Global Factors
- System reliability and performance
- Substation/line equipment limits

Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades

Problem Statement:
FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.

Proper operation of the protection scheme requires all the separate components perform adequately during a fault.

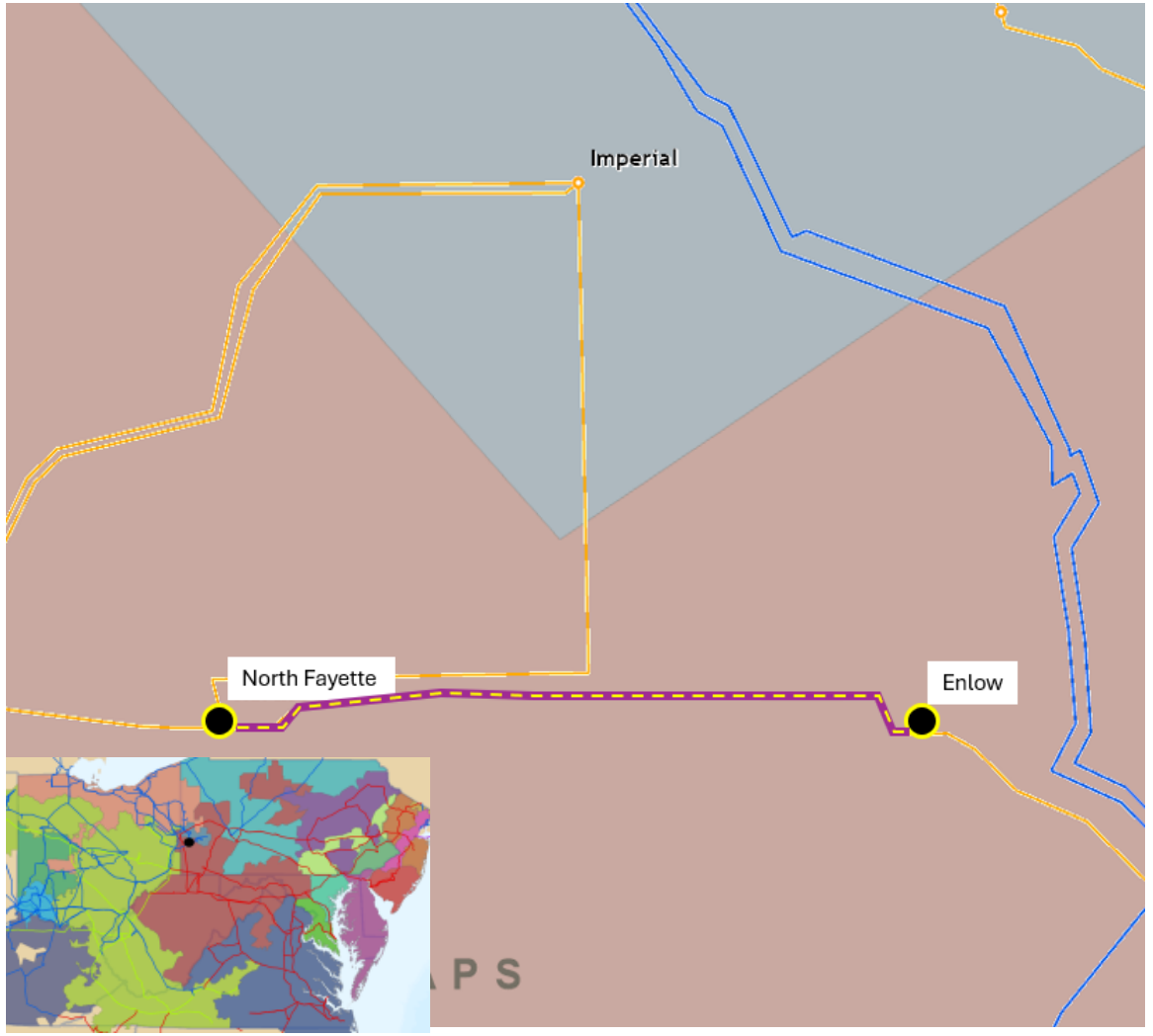
In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

Transmission line ratings are limited by terminal equipment.

Enlow - North Fayette 138 kV Line:

Existing Line Rating: 287 / 314 / 325 / 343 MVA (SN/SE/WN/SE)

Existing Conductor Rating: 308 / 376 / 349 / 445 MVA (SN/SE/WN/SE)



APS Transmission Zone M-3 Process
Misoperation Relays

Need Number: APS-2026-076
Process Stage: Need Meeting SRRTEP-W - 11/13/2026
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:
System Performance Projects Global Factors
- System reliability and performance
- Substation/line equipment limits

Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades

Problem Statement:
FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.

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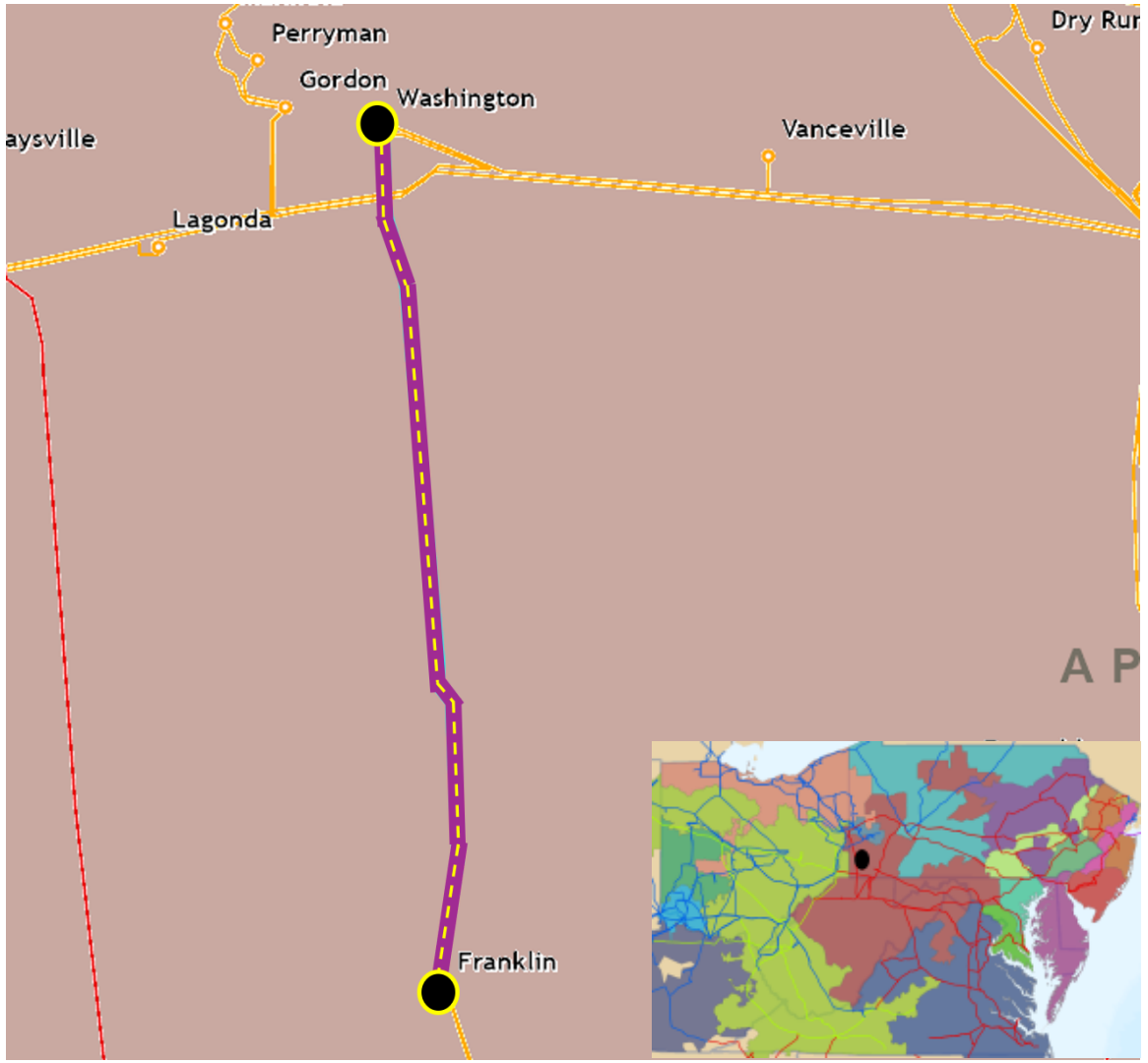
In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

Transmission line ratings are limited by terminal equipment.

Franklin - Washington 138 kV Line:

Existing Line Rating: 225 / 287 / 287 / 287 MVA (SN/SE/WN/SE)

Existing Conductor Rating: 308 / 376 / 349 / 445 MVA (SN/SE/WN/SE)



APS Transmission Zone M-3 Process
Misoperation Relays

Need Number: APS-2026-077
Process Stage: Need Meeting SRRTEP-W - 11/13/2026
Project Driver: *Equipment Condition/Performance/Risk*

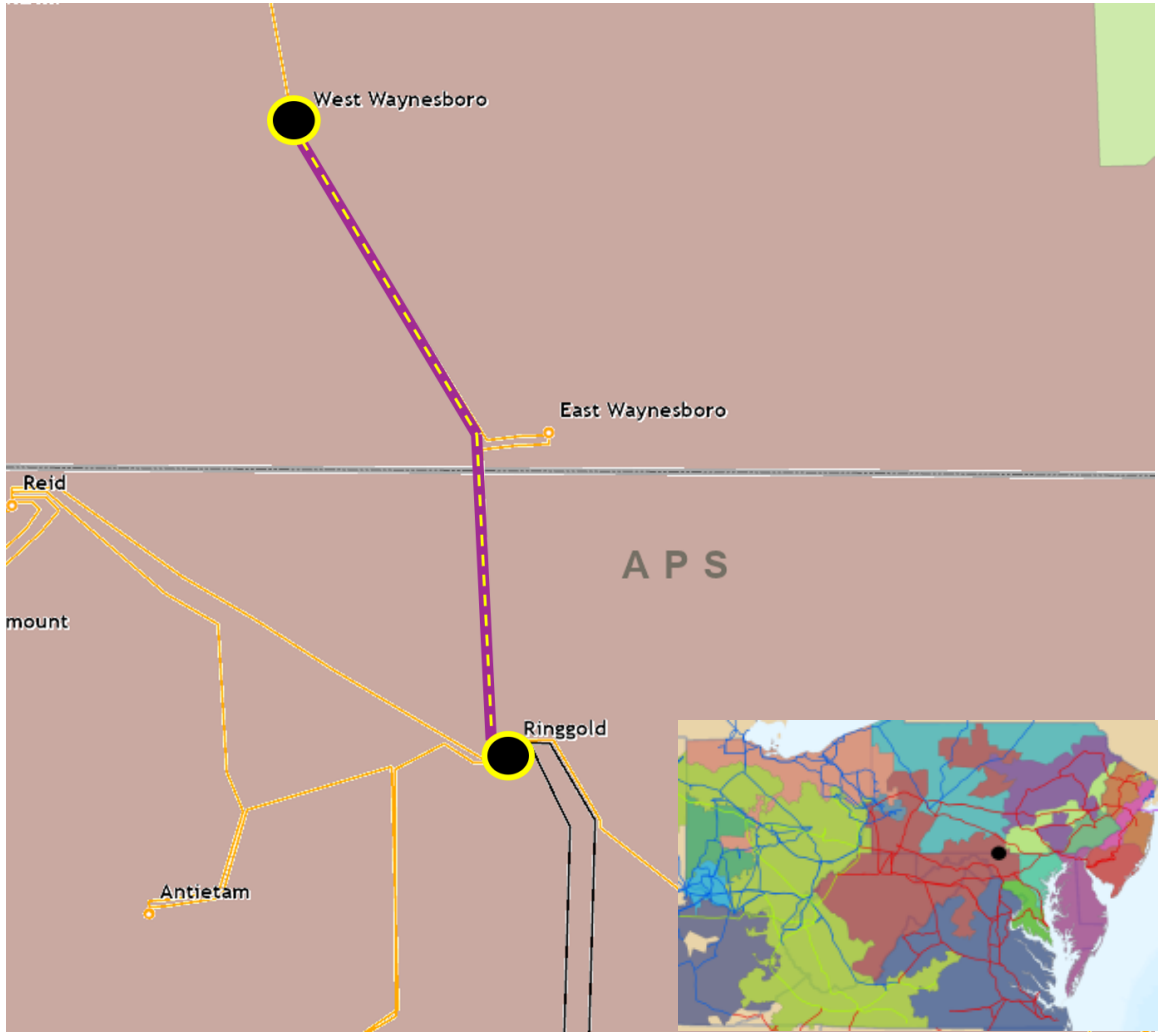
Specific Assumption References:
System Performance Projects Global Factors
- System reliability and performance
- Substation/line equipment limits
Upgrade Relay Schemes
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades

Problem Statement:
FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation.

Proper operation of the protection scheme requires all the separate components perform adequately during a fault.

In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

Transmission line ratings are limited by terminal equipment.
Ringgold - West Waynesboro 138 kV Line:
Existing Line Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/SE)
Existing Conductor Rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/SE)



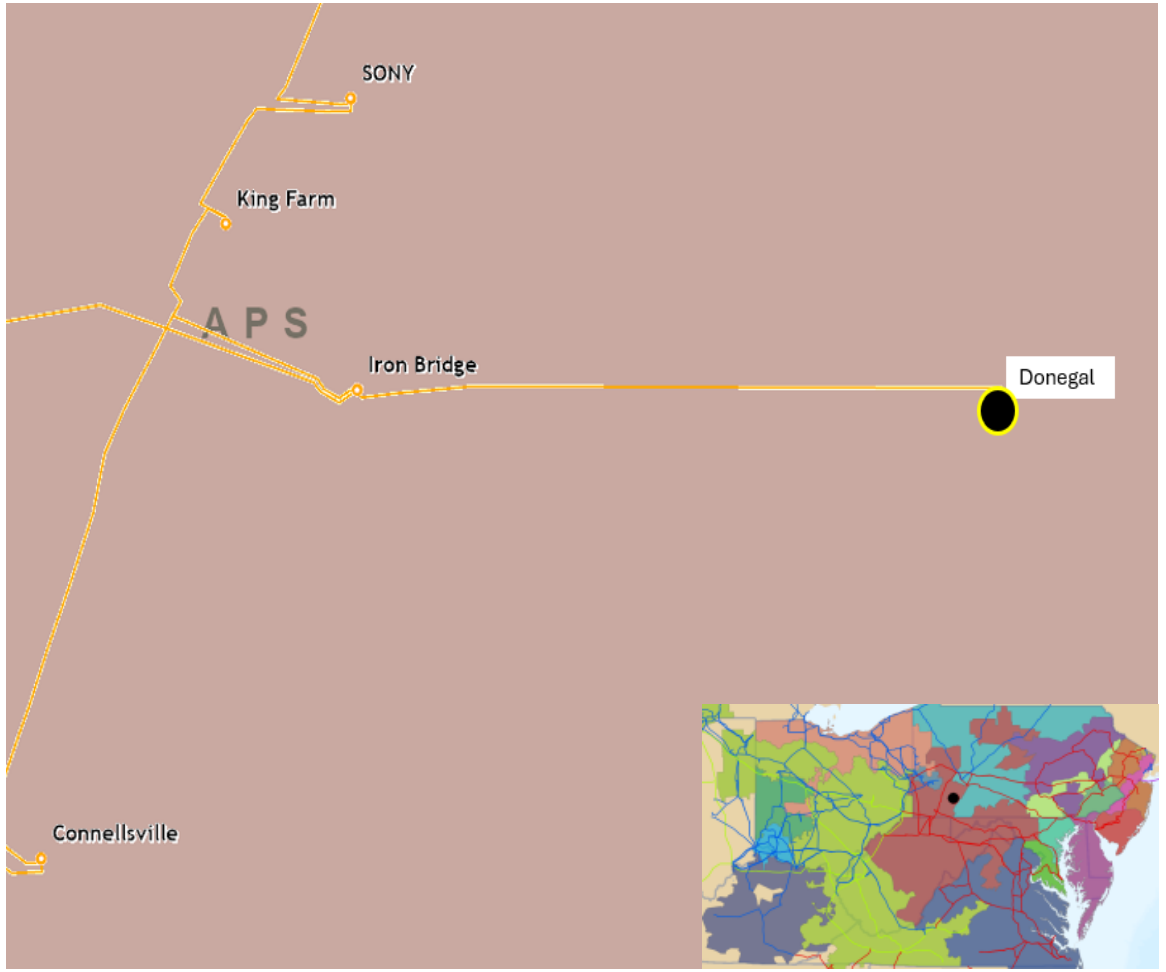
APS Transmission Zone M-3 Process
Donegal Substation

Need Number: APS-2026-079
Process Stage: Need Meeting SRRTEP-W - 11/13/2026
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:
System Performance 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 138 kV breaker at Donegal Substation on the Allegheny EC line exit was manufactured in 1990. The current breaker is obsolete, and manufacturer parts are increasingly scarce. Replacement components are difficult to source leading to non-standard repairs. The breaker age significantly increases the risk of failure, and maintenance costs have been escalating, making continued repairs economically inefficient.

Transmission line ratings are limited by terminal equipment.
Donegal - AEC 138 kV Line Ratings:
Existing line ratings: 24 / 24 / 24 / 24 MVA (SN/SE/WN/WE)
Existing conductor ratings: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE



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

APS Transmission Zone M-3 Process
Gordonsville – Pratts 115 kV Line

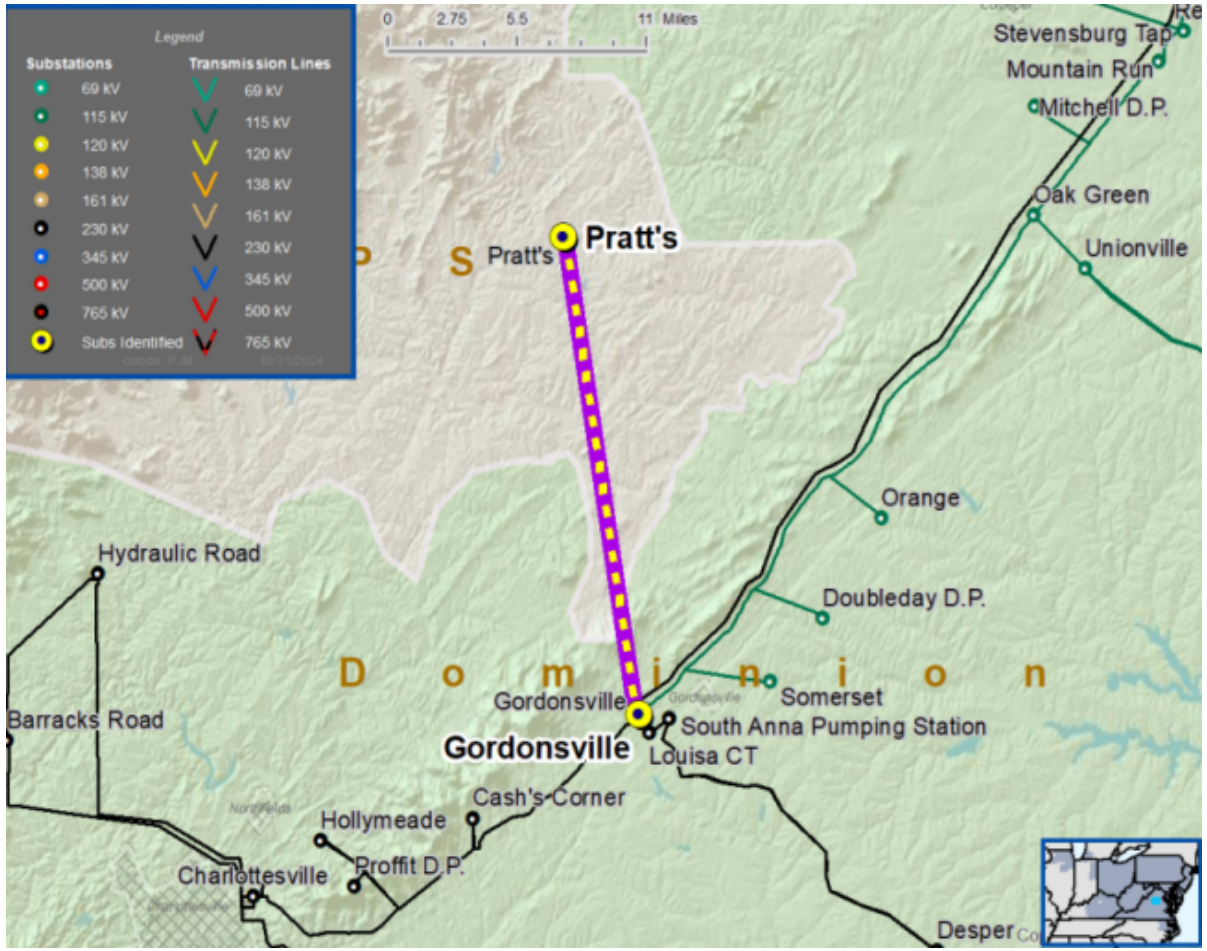
Need Number: APS-2024-092
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026
Previously Presented: Need Meeting SRRTEP-W - 11/15/2024
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:
System Performance Global Factors
- System reliability/performance
- Substation/Line equipment limits
Line Condition Rebuild/Replacement
- Age/condition of wood transmission line structures

Problem Statement:
The Gordonsville – Pratts 115 kV Line was constructed approximately 40 years ago. It is approximately 18 miles long with 136 wood pole transmission line structures.
Per recent inspection, the line is exhibiting deterioration. Inspection findings include:
- 78 wood pole structures failed due to woodpecker damage and rot.

Over the last five years, the line has experienced two unplanned sustained outages primarily due to failed line equipment.
Existing Transmission Line Ratings:
- 145/ 184 / 181 / 213 MVA (SN/SE/WN/WE)

Existing Transmission Line Conductor Ratings:
- 257 / 313 / 291 / 371 MVA (SN/SE/WN/WE)



APS Transmission Zone M-3 Process
Gordonsville – Pratts 115 kV Line

Need Number: APS-2024-092
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Proposed Statement:

Gordonsville - Pratts 115 kV Line Rebuild:

-Rebuild approximately 18 miles of Gordonsville - Pratts 115 kV Line through replacing wood structures with steel poles and install OPGW.

-Reconductor Gordonsville - Pratts 115 kV Line with a new conductor.

-At Gordonsville Substation: replace circuit breaker, disconnect switches, substation conductors, CT's, metering, surge arresters, and relaying.

-At Pratts Substation: upgrade disconnect switches and replace VT's with CVT's.

Gordonsville - Pratts 115 kV Line Ratings:

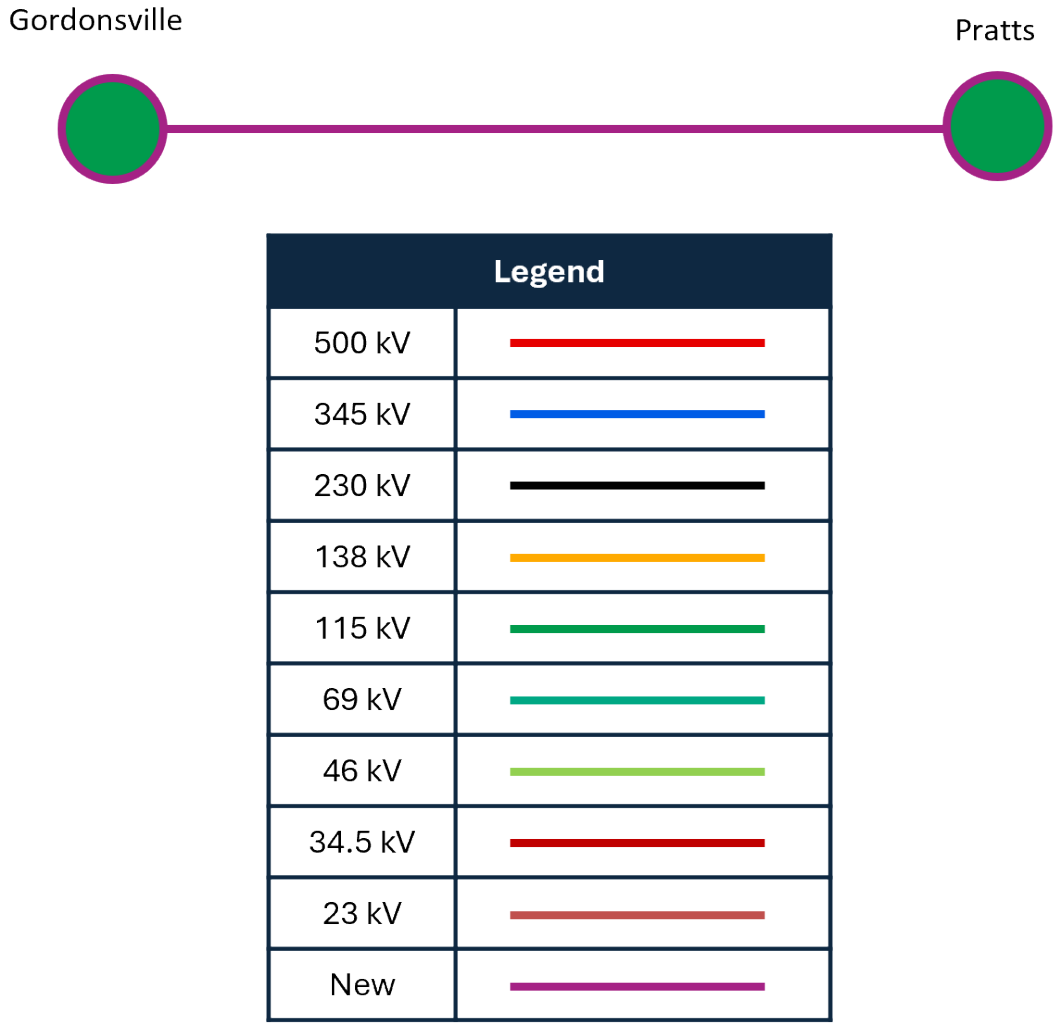
Before proposed solution: 145 / 184 / 181 / 213 MVA (SN/SE/WN/WE)

After proposed solution: 257 / 313 / 291 / 371 MVA (SN/SE/WN/WE)

Alternatives Considered:

Continue to maintain with increased risk of unplanned outages and expected increase of maintenance cost due to structures and equipment age.

Transmission Cost Estimate:	$75.09 M	
Projected In-Service:		12/30/2031
Project Status:	Conceptual	
Model:		2025 RTEP model for 2030 Summer (50/50)



APS Transmission Zone M-3 Process Misoperation Relays

Need Number: APS-2026-032
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026
Previously Presented: Need Meeting SRRTEP-W - 06/17/2026
Project Driver: *Equipment Condition/Performance/Risk*

Specific Assumption References:

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

Upgrade Relay Schemes

- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades

Problem Statement:

FirstEnergy has identified protection schemes using a certain vintage of relays and communication equipment that have a history of misoperation on the Gordonsville - Pratts 115 kV Line.

Proper operation of the protection scheme requires all the separate components perform adequately during a fault.

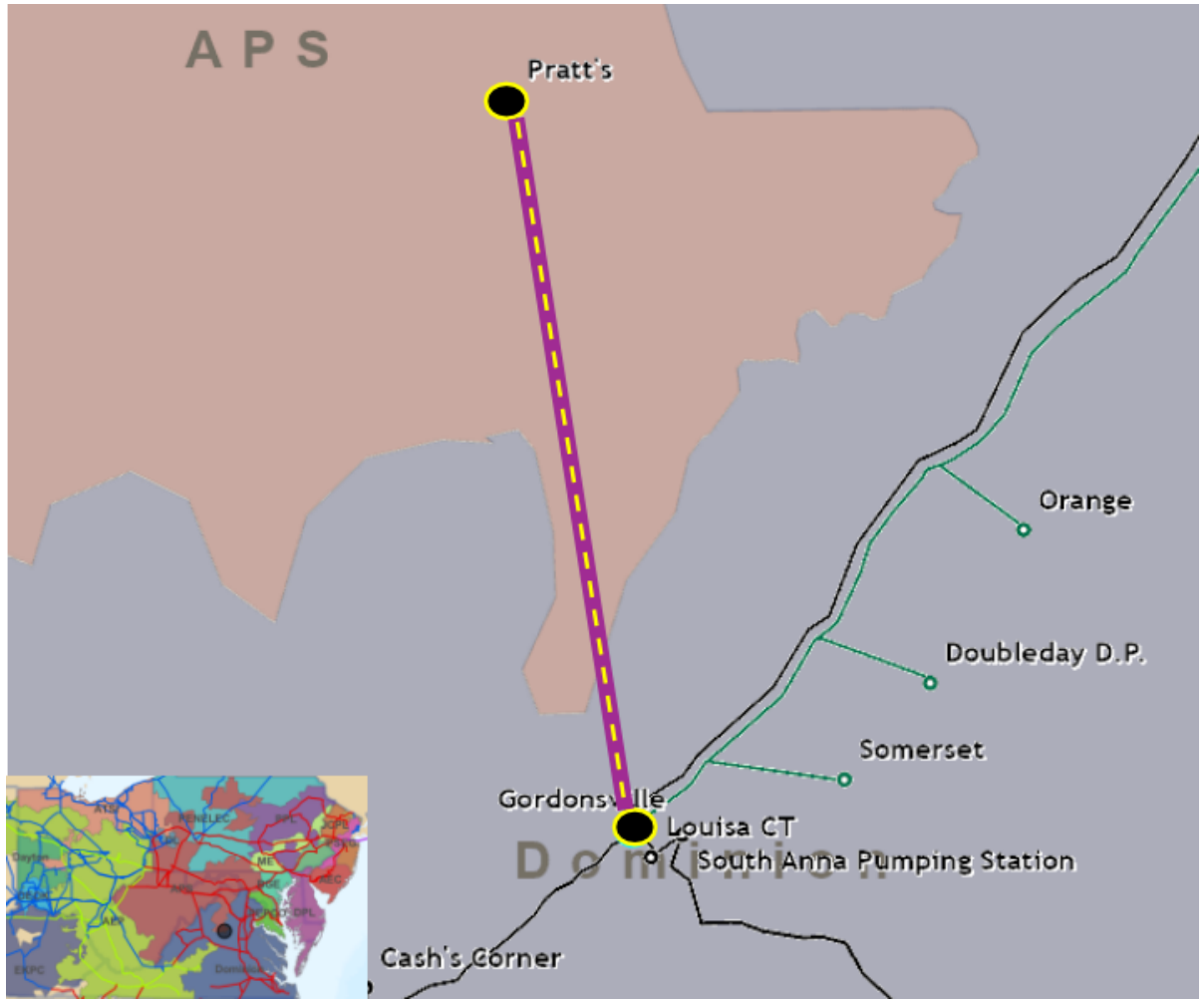
In many cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.

Transmission line ratings are limited by terminal equipment.

Gordonsville - Pratts 115 kV Line:

Existing Line Rating: 145 / 184 / 181 / 213 MVA (SN/SE/WN/WE)

Existing Conductor Rating: 257 / 313 / 291 / 371 MVA (SN/SE/WN/WE)



APS Transmission Zone M-3 Process
Misoperation Relays

Need Number: APS-2026-032
Process Stage: Solution Meeting SRRTEP-W - 11/13/2026

Proposed Statement:

Misoperation Relays: Gordonsville - Pratts 115 kV Line:

Install PLC and SPD. Replace terminal equipment; circuit breaker, wavetrap, and relays

Gordonsville - Pratts 115 kV Line:

Before proposed solution: 145 / 184 / 181 / 213 MVA (SN/SE/WN/WE)

After proposed solution: 257 / 313 / 291 / 371 MVA (SN/SE/WN/WE)

Alternatives Considered:

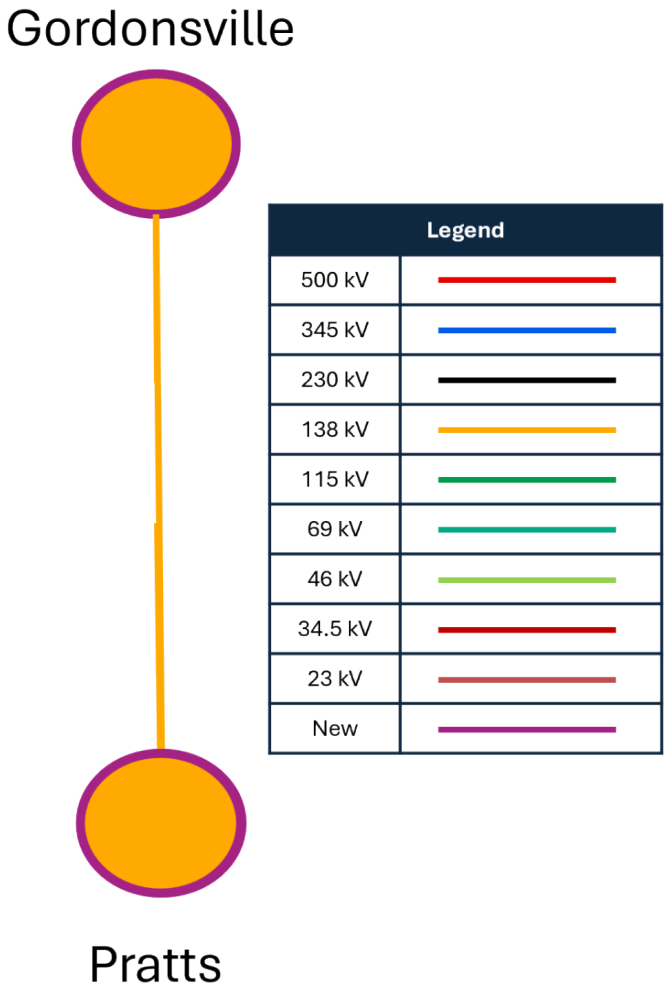
Maintain equipment in existing condition

Transmission Cost Estimate: $2.8 M

Projected In-Service: 12/31/2029

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

11/xx/2026– V1 – Original version posted to pjm.com