Subregional RTEP Committee – Western
FirstEnergy Supplemental Projects

APS 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

APS Transmission Zone M-3 Process
Grand Point – Roxbury 138 kV

Need Number: APS-2025-028

Process Stage: Solution Meeting – SRRTEP-W – 12/12/2025

Previously Presented: Need Meeting – SRRTEP-W – 03/14/2024

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

System Performance Global Factors

- *Past system reliability/performance Line Condition Rebuild/Replacement*
- *Age/condition of wood pole transmission line structures*

Problem Statement:

The Grand Point – Roxbury 138 kV Line was constructed in 1960. The line is approximately 14 miles long with 109 wood pole structures. Recent inspections have indicated that 87 structures are exhibiting deterioration. Inspection findings include woodpecker damage, top rot, groundline decay and cracking. Since 2014, the line has had eight unscheduled outages.

Existing Grand Point – Letterkenny 138 kV Line Rating:

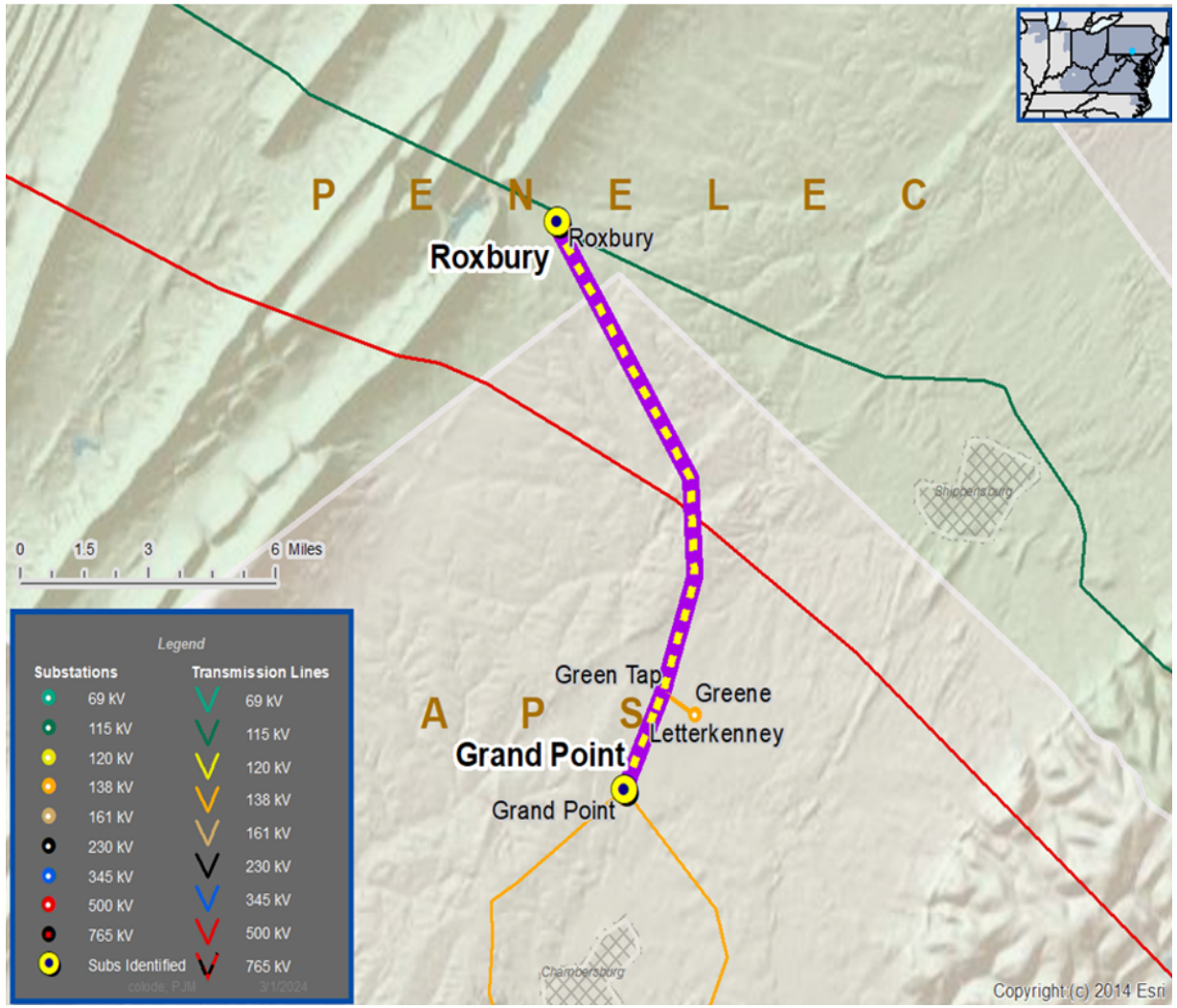
- 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)

Existing Letterkenny – Greene Tap 138 kV Line Rating:

- 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)

Existing Greene Tap – Roxbury 138 kV Line Rating:

- 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)



APS Transmission Zone M-3 Process
Grand Point – Roxbury 138 kV

Need Number: APS-2025-028

Process Stage: Solution Meeting – SRRTEP-W – 12/12/2025

Proposed Solution:

Grand Point – Roxbury 138 kV Line:

- Rebuild the Grand Point - Roxbury 138 kV Line (14 miles total) with steel H-frame structures and new conductor.
- 5.5 miles per PN-2024-012
- 8.5 miles per APS-2024-028

At Roxbury Substation (PN):

- Replace limiting substation conductor and revise relay settings.

At Greene Substation:

- Revise relay settings.

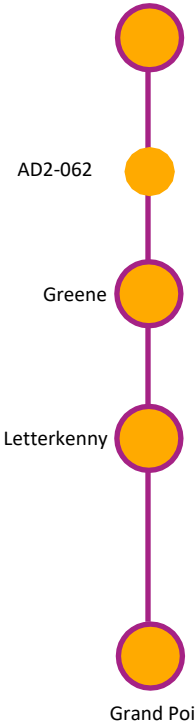
At Letterkenny Substation:

- Replace line switch and revise relay settings.

At Grand Point Substation:

- Replace substation conductor, circuit breaker, install surge arrestors and ground switch, and revise relay settings.

Continued on the next slide…



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

APS Transmission Zone M-3 Process
Grand Point – Roxbury 138 kV

Need Number: APS-2025-028

Process Stage: Solution Meeting – SRRTEP-W – 12/12/2025

Proposed Solution (continued):

Transmission Line Ratings:

Roxbury - AD2-062 138 kV Line:
- Before Proposed Solution: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- After Proposed Solution: 308 / 376 / 349 / 445 MVA (SN/SE/WN/WE)

Greene - AD2-062 138 kV Line:
- Before Proposed Solution: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- After Proposed Solution: 308 / 376 / 349 / 445 MVA (SN/SE/WN/WE)

Letterkenny - Greene 138 kV Line:
- Before Proposed Solution: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- After Proposed Solution: 308 / 376 / 349 / 445 MVA (SN/SE/WN/WE)

Grand Point - Letterkenny 138 kV Line:
- Before Proposed Solution: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)
- After Proposed Solution: 308 / 376 / 349 / 445 MVA (SN/SE/WN/WE)

Alternatives Considered:

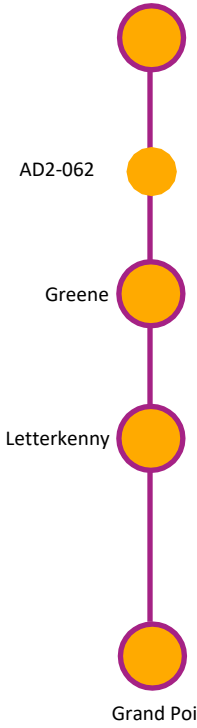
Maintain the line in existing condition with elevated risk of failure due to equipment deterioration.

Estimated Project Cost: $28.34M

Projected In-Service: 06/15/2029

Project Status: Conceptual

Model: 2024 RTEP model for 2029 Summer & Winter (50/50)



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

APS Transmission Zone M-3 Process
Junction – Parr Run 138 kV

Need Number: APS-2024-096

Process Stage: Solution Meeting – SRRTEP-W – 12/12/2025

Previously Presented: Need Meeting – SRRTEP-W – 11/15/2024

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

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 Junction – Parr Run 138 kV Line was constructed approximately 47 years ago. It is approximately 17 miles long with 98 wood pole and 18 steel lattice transmission line structures.

Per recent inspection, the line is exhibiting deterioration. Inspection findings include:

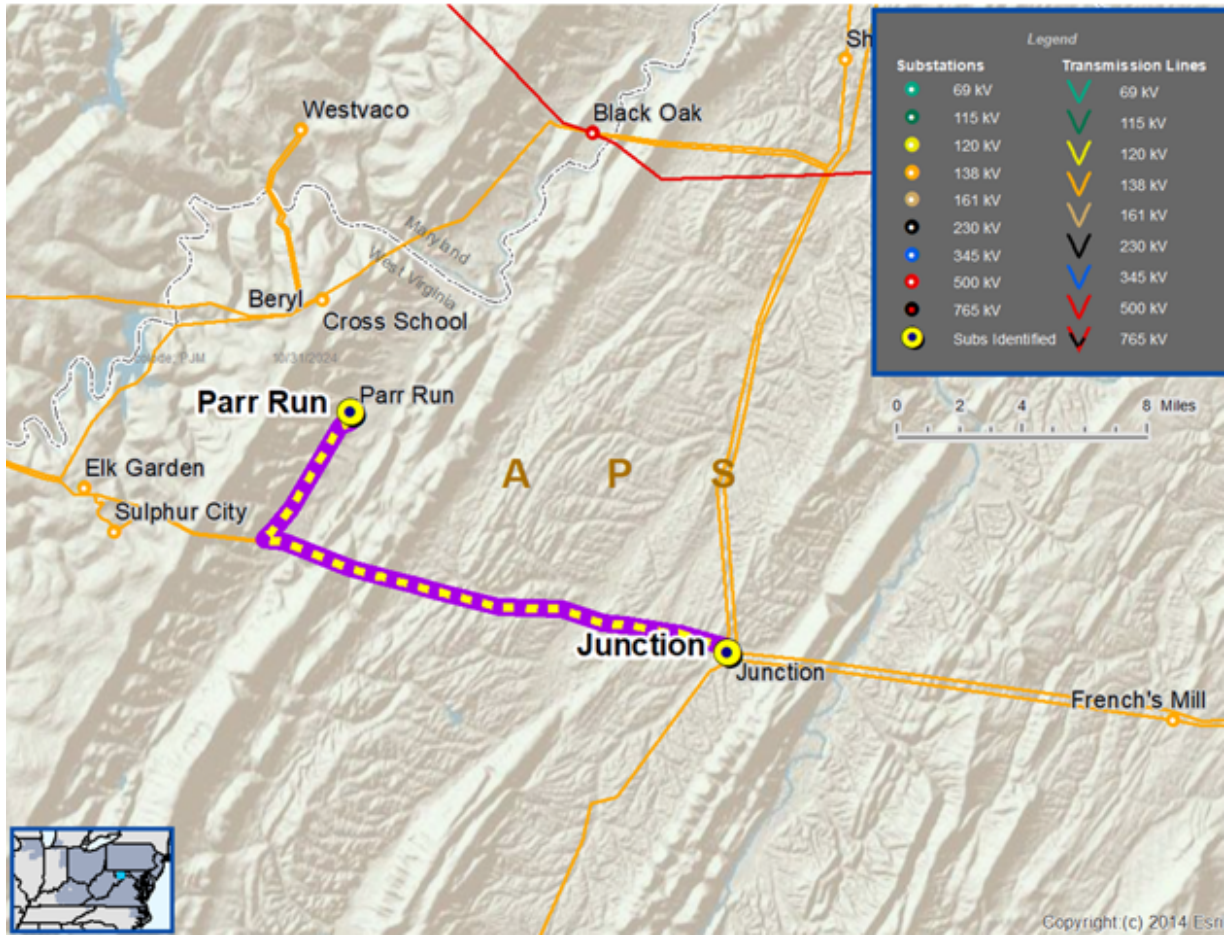
- 136 maintenance conditions were identified due to woodpecker damage, rotten cross arms, cracked and deteriorating wood poles.
- Maintenance required on steel structures with no major defects reported.
- Over the last five years, the line has not experienced any unscheduled, sustained outages.

Existing Transmission Line Ratings:

- 164 / 206 / 216 / 229 MVA (SN/SE/WN/WE)

Existing Transmission Line Conductor Ratings:

- 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)



APS Transmission Zone M-3 Process
Junction – Parr Run 138 kV

Need Number: APS-2024-096

Process Stage: Solution Meeting – SRRTEP-W – 12/12/2025

Proposed Solution:

Rebuild 12.1 miles of the Junction - Parr Run 138 kV Line. Structures 1-18 (~4.9 miles) are double circuited with the Kelso Gap - Parr Run 138 kV Line and this section does not require a rebuild at this time.

Transmission Line Ratings:

Junction - Parr Run 138 kV Line

- Before Proposed Solution: 164 / 206 / 216 / 229 MVA (SN/SE/WN/WE)
- After Proposed Solution: 164 / 206 / 216 / 229 MVA (SN/SE/WN/WE)

This line is currently limited by terminal equipment, which will be upgraded per APS-2024-086. Therefore, this project will not affect the ratings of the Junction - Parr Run 138 kV Line.

Alternatives Considered:

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

Estimated Project Cost: $35M

Projected In-Service: 06/16/2028

Project Status: Conceptual

Model: 2024 RTEP - 2029 Summer & Winter 50/50 Case

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

Project Cancellation

APS Transmission Zone M-3 Process
Page-Riverton 138 kV New Customer

Need Number: APS-2023-014

Process Stage: s3127.1 Project Cancellation - 12/12/2025

Previously Presented: Need Meeting – 05/19/2023

Solution Meeting – 07/21/2023

Project Driver(s):

Customer Service

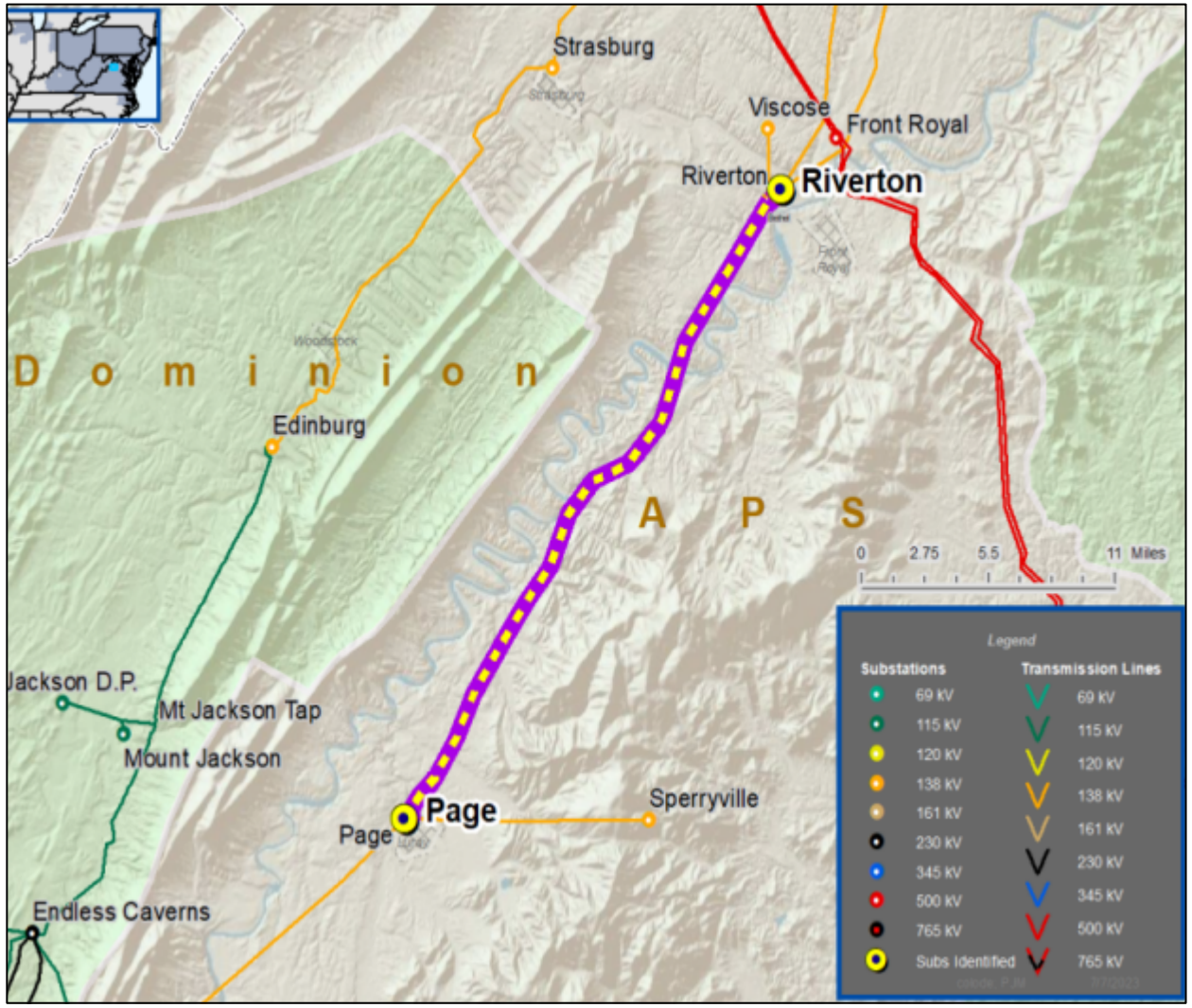
Specific Assumption Reference(s)

New customer connection request will be evaluated per FirstEnergy's "Requirements for Transmission Connected Facilities" document and "Transmission Planning Criteria" document.

Problem Statement

New Customer Connection - has requested a new 138 kV delivery point near the Page-Riverton 138 kV line. The anticipated load of the new customer connection is 35 MVA.

Requested in-service date is 05/30/2025.



APS Transmission Zone M-3 Process
Page-Riverton 138 kV New Customer

Need Number: APS-2023-014

Process Stage: s3127.1 Project Cancellation – 12/12/2025

Justification for Cancellation:

Due to the customer's decision to cancel the project, the associated transmission connection is no longer required.

Proposed Solution:

138 kV Transmission Line Tap

- Install a new 4-breaker ring bus named Catlett Mountain near 85 Russ Johnson Rd, Front Royal, VA 22630
- Cut the Page – Riverton RLU 138 kV Line near pole RLU-154 and extend 0.3-mile line in and out of the new Catlett Mountain substation
- Protection/terminal end relay settings review required
- Install revenue metering in Customer's facilities

Line Ratings:

Catlett Mountain – Page 138 kV Line

- After project completion 160 MVA SN/ 192 MVA SE

Catlett Mountain – Riverton 238 kV Line

- After project completion 153 MVA SN/ 153 MVA SE

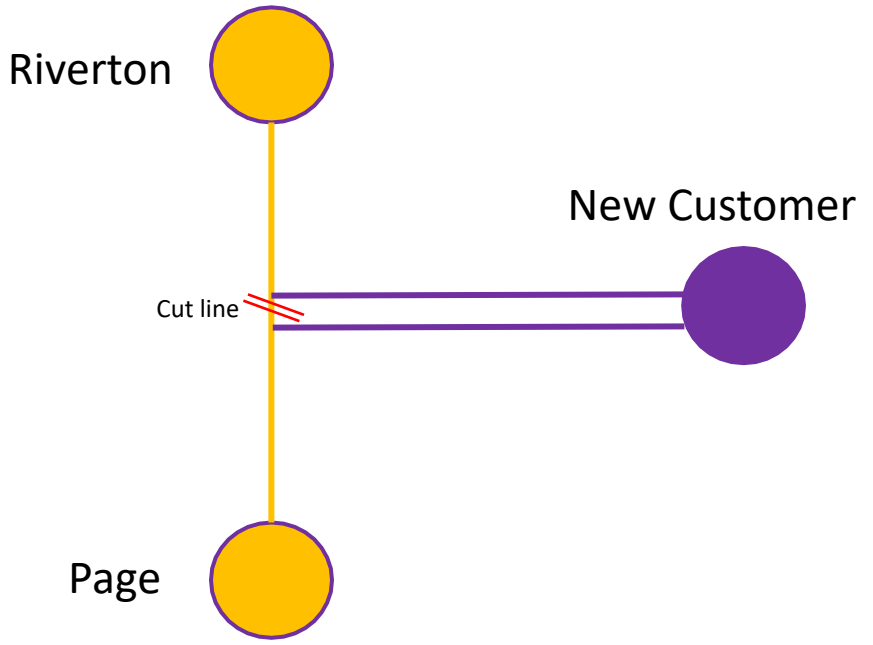
Alternatives Considered:

- No other reasonable transmission alternatives

Estimated Project Cost: $16M

Projected In-Service: 05/30/2025

Status: Project Initiation



Legend	
500 kV	
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New	

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

12/02/2025– V1 – Original version posted to pjm.com