

# Subregional RTEP Committee - Western FirstEnergy Supplemental Projects

August 16, 2024

# 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

**Need Numbers:** APS-2024-072

**Process Stage:** Need Meeting – 08/16/2024

**Project Driver:**

*Equipment Material Condition, Performance and Risk*

**Specific Assumption Reference:**

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

Substation Condition Rebuild/Replacement

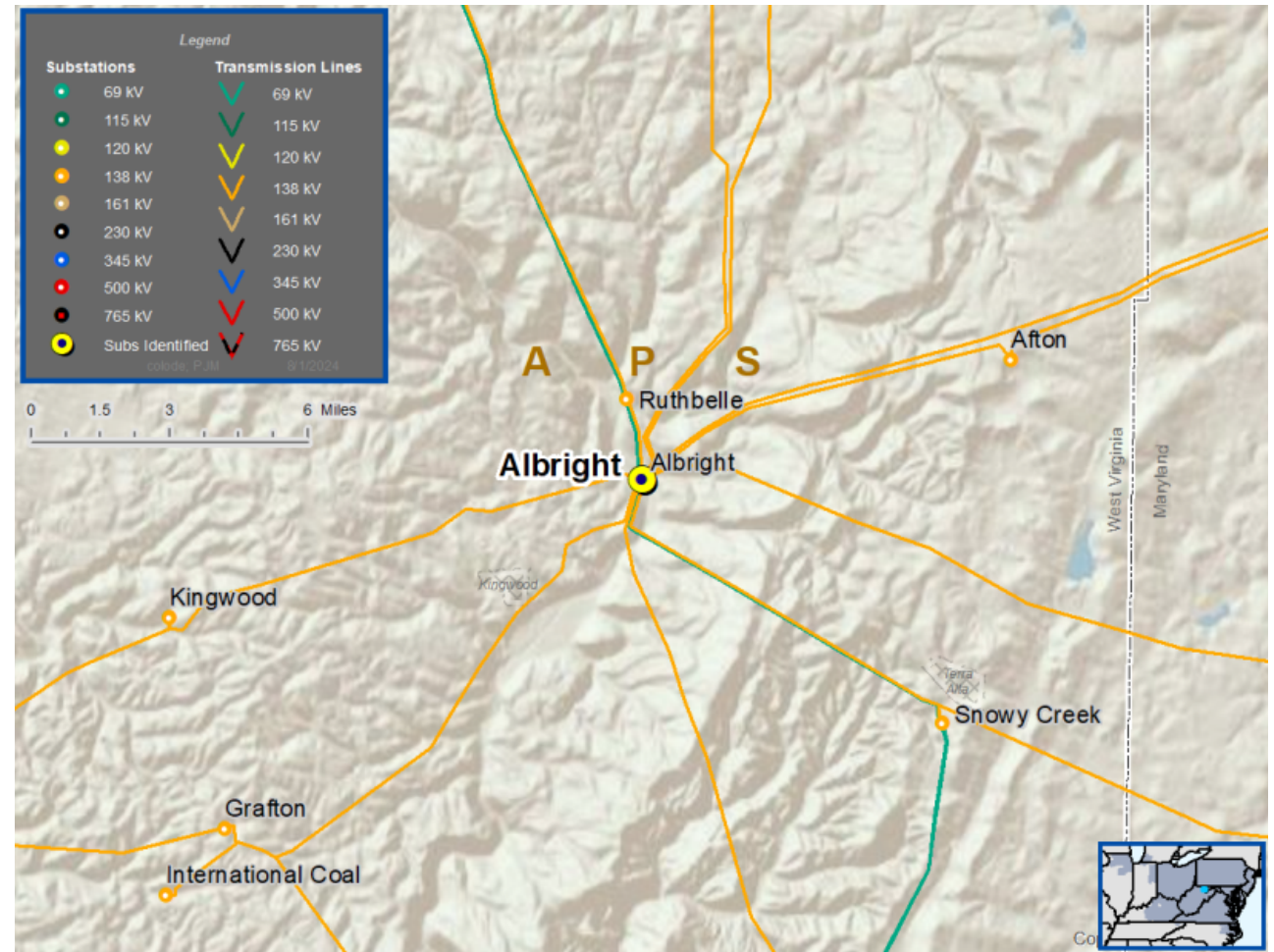
- Age/condition of substation equipment
- Circuit breakers and other fault interrupting devices

**Problem Statement:**

- The existing Albright 138 kV breaker AJ1 is 44 years old.
- Carrier sets, breakers and associated line trap on this terminal are beyond their useful life and are prone to failure.
- Replacement components are difficult to source in quantity leading to non-standard repairs.
- The line is currently limited by terminal equipment.

Albright – Snowy Creek Tap 138 kV Line

- Existing line rating: 195 / 209 / 217 / 229 MVA (SN/SE/WN/WE)
- Existing conductor rating: 221 / 268 / 250 / 317 MVA (SN/SE/WN/WE)



**Need Number:** APS-2024-074

**Process Stage:** Need Meeting – 08/16/2024

**Project Driver:**

*Equipment Material Condition, Performance and Risk*

**Specific Assumption Reference:**

System Performance Global Factors

- System reliability/performance
- Substation/Line equipment limits

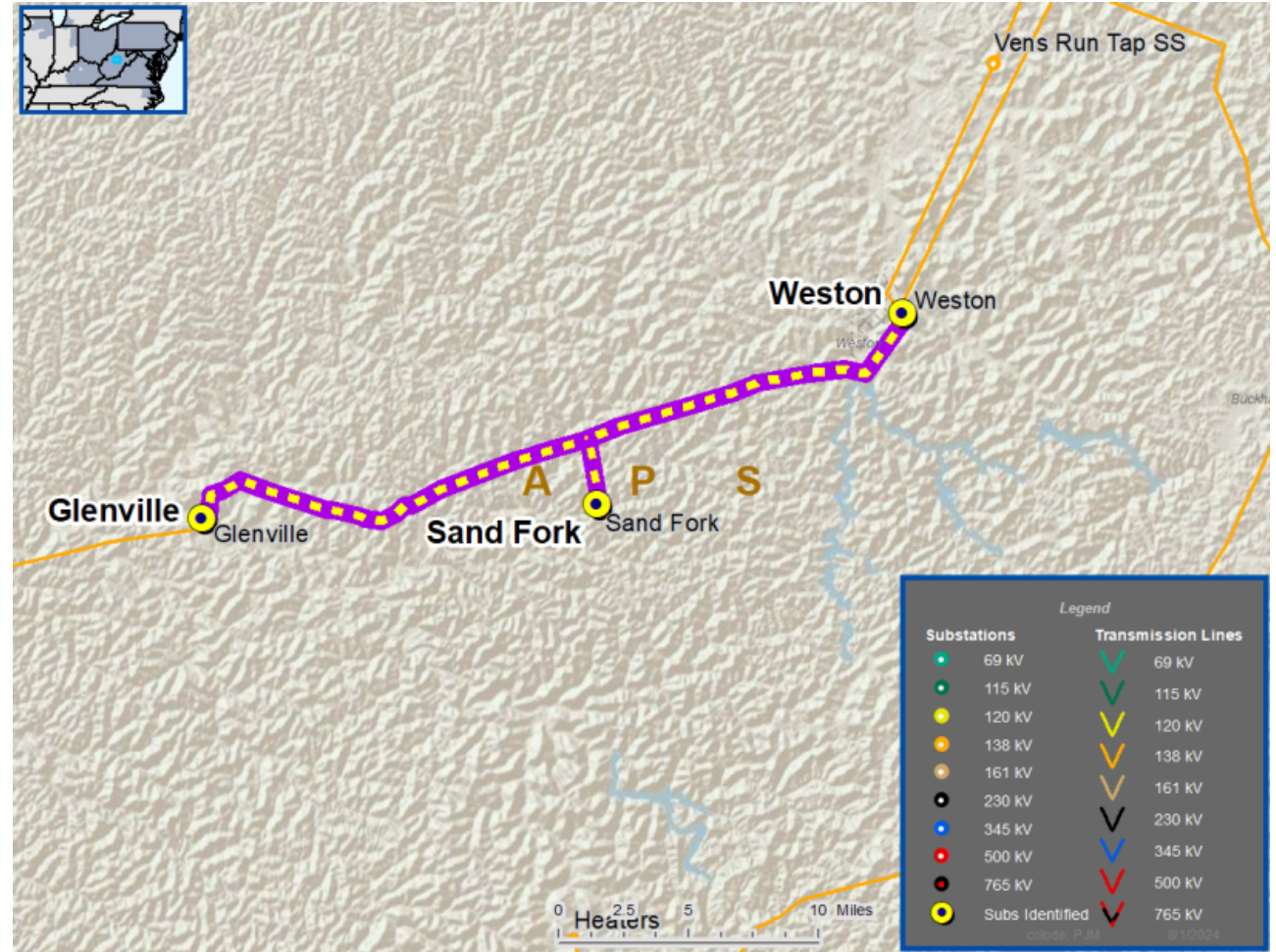
Line Condition Rebuild/Replacement

- Age/condition of wood transmission line structures

**Problem Statement:**

- The Weston – Glenville 138 kV Line was constructed approximately 44 years ago. It is approximately 31 miles long with 30 miles of wood pole structures and one mile of steel transmission line structures.
- The line has experienced six unplanned sustained outages over the last five years. Four outages related to failure of polymer insulators on the line.
- Per recent inspections, 124 of 130 wood pole structures utilize the polymer insulators related to recent failures.

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# APS Transmission Zone M-3 Process Weston – Glenville 138 kV Line

Need #	Transmission Line / Substation Locations	Existing Line Rating MVA (SN / SE / WN / WE )	Existing Conductor Rating MVA (SN / SE / WN / WE)
APS-2024-074	Glenville – Sand Fork Tap 138 kV Line	195 / 209 / 217 / 229	221 / 268 / 250 / 317
	Sand Fork Tap – Weston 138 kV Line	221 / 268 / 250 / 317	221 / 268 / 250 / 317

# 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:** APS-2020-003

**Process Stage:** Solution Meeting – 08/16/2024

**Previously Presented:** Need Meeting – 04/16/2020

**Project Driver:**

*Equipment Material Condition, Performance and Risk Operational Flexibility and Efficiency*

**Specific Assumption Reference:**

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

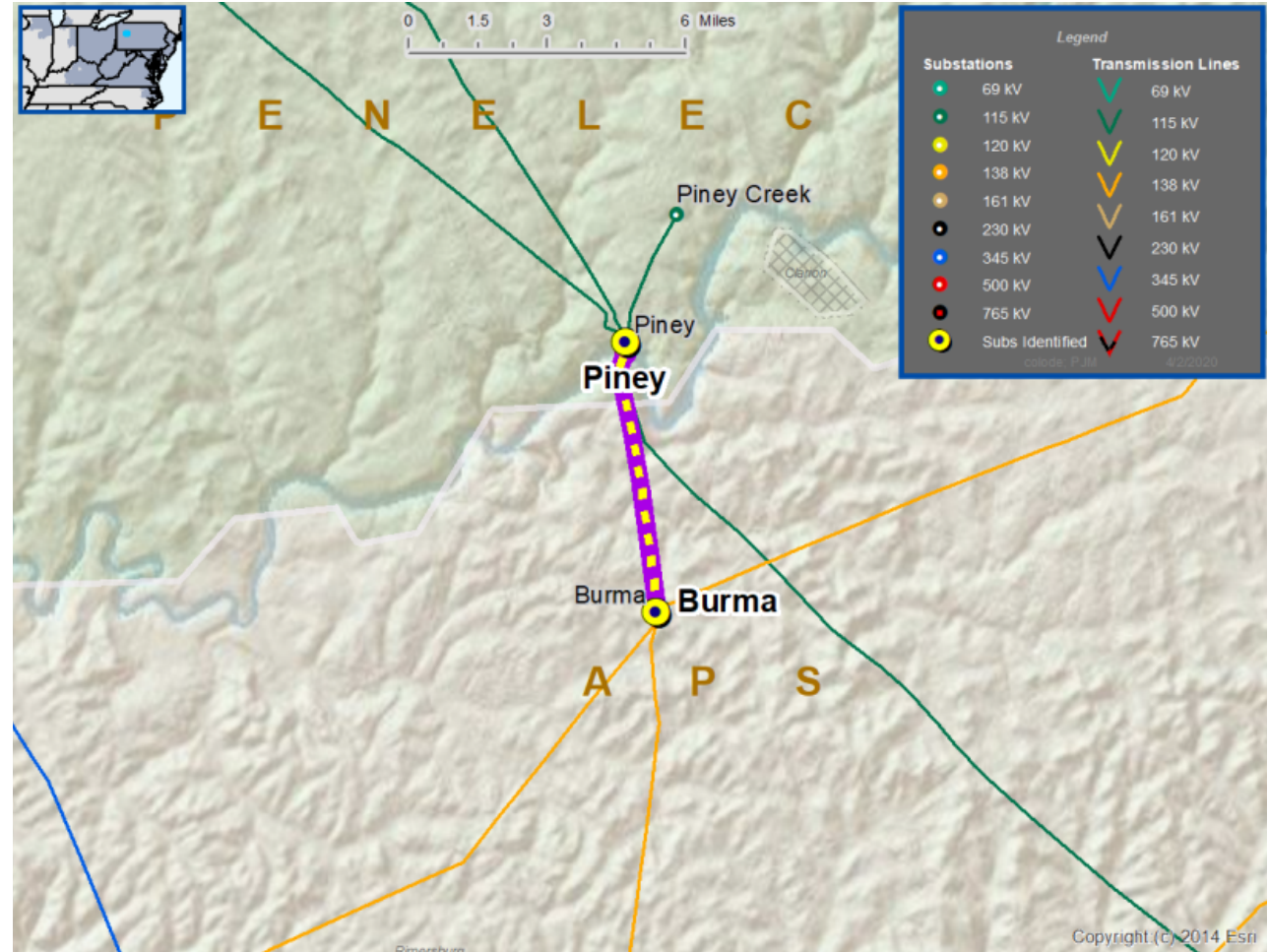
System Condition Projects

- Substation Condition Rebuild/Replacement

Upgrade Relay Schemes

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

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# APS Transmission Zone M-3 Process Misoperation Relay Project

## 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.

Need #	Transmission Line / Substation Locations	Existing Line Rating MVA (SN/SE/WN/WE)	Existing Conductor Rating MVA (SN/SE/WN/WE)
APS-2020-003 PN-2020-004	Burma – Piney 115 kV Line	221 / 262 / 263 / 286	232 / 282 / 263 / 334





# APS Transmission Zone M-3 Process Misoperation Relay Project

## Proposed Solution:

Need #	Transmission Line / Substation Locations	New MVA Line Rating (SN/SE/WN/WE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
APS-2020-003 PN-2020-004	Burma – Piney 115 kV Line	232 / 282 / 263 / 334	<ul style="list-style-type: none"><li>At Burma, replace line trap, substation conductor and relays.</li></ul>	\$1.9	10/31/2025

**Alternatives Considered:** Maintain existing condition with elevated risk of equipment misoperation

**Project Status:** Conceptual

**Model:** 2023 RTEP model for 2028 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

08/06/2024– V1 – Original version posted to pjm.com