

Subregional RTEP Committee - Western FirstEnergy Supplemental Projects

July 18, 2025

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 Numbers: APS-2024-014, APS-2024-047, APS-2025-018

Process Stage: Solution Meeting 7/18/2025

Previously Presented: Need Meeting 1/19/2024, 5/17/2024, 5/16/2025

Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

System Condition Projects

- Substation Condition Rebuild/Replacement

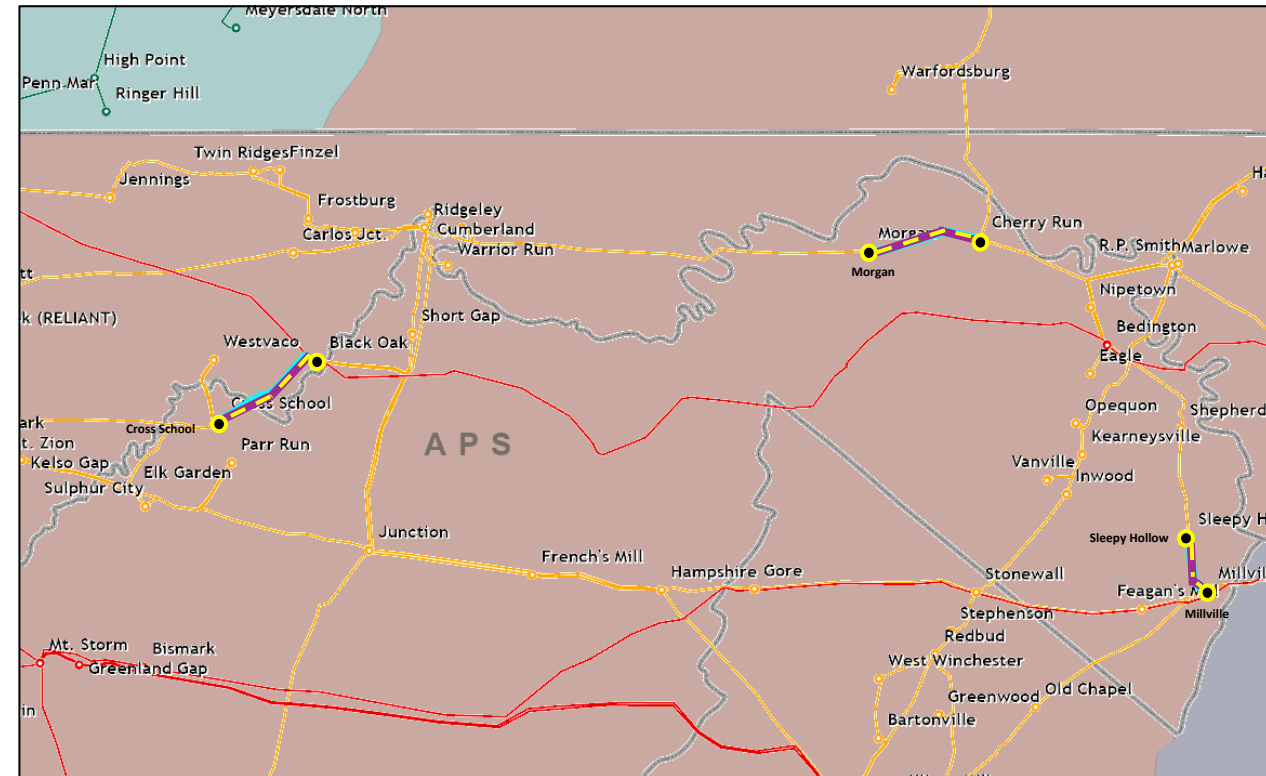
Upgrade Relay Schemes

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

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cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.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

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Need #	Transmission Line / Substation Locations	Existing Line Rating (SN / SE / WN / WE)	Existing Conductor Rating (SN / SE / WN / WE)
APS-2024-014	Sleepy Hollow – Millville 138 kV Line	292 / 306 / 306 /306	353 / 406 / 353 / 428
APS-2024-047	Morgan – Cherry Run 138 kV Line	195 / 209 / 217 / 229	221 / 268 / 250 / 317
APS-2025-018	Black Oak - Cross School 138 kV Line	221 / 268 / 250 / 306	221 / 268 / 250 / 317

Proposed Solution:

Need #	Transmission Line / Substation Locations	New MVA Line Rating (SN / SE / WN / WE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
APS-2024-014	Sleepy Hollow – Millville 138 kV Line	353 / 406 / 353 / 428	<ul style="list-style-type: none"> At Sleepy Hollow, replace disconnect switches, line trap, line turner and coax, CCVT, metering, substation conductor and line relaying. At Millville, replace disconnect switches, line trap, line turner and coax, CCVT, substation conductor and line relaying. 	\$2.00 M	01/31/2027
APS-2024-047	Morgan – Cherry Run 138 kV Line	221 / 268 / 250 / 317	<ul style="list-style-type: none"> At Morgan, replace disconnect switches, line trap, substation conductor and line relaying. At Cherry Run, replace circuit breaker, line trap, substation conductor and line relaying. 	\$2.30 M	07/21/2029
APS-2025-018	Black Oak - Cross School 138 kV Line	221 / 268 / 250 / 317	<ul style="list-style-type: none"> At Black Oak, replace circuit breakers, disconnect switches, line trap, CCVT and line relaying. At Cross School, replace line trap and line relaying. 	\$4.55 M	12/31/2026

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

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

7/08/2025– V1 – Original version posted to pjm.com