

Transmission Expansion Advisory Committee FirstEnergy Supplemental Projects

July 9th, 2024

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-2024-059

Process Stage: Solution Meeting – 07/09/2024

Previously Presented: Need Meeting – 06/04/2024

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

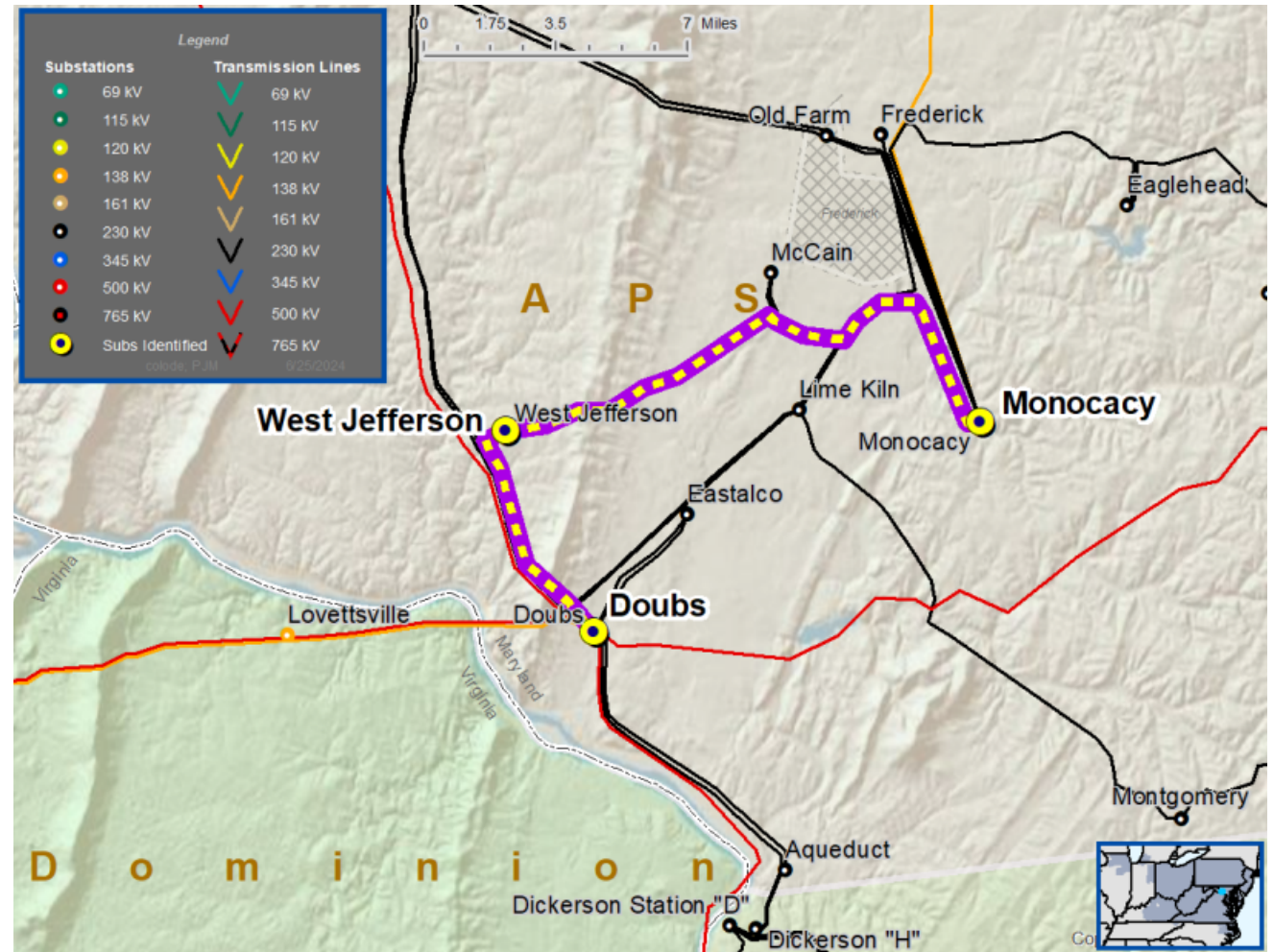
Upgrade Relay Schemes

- 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cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.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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APS Transmission Zone M-3 Process Misoperation Relays

Need #	Transmission Line / Substation Locations	Existing Line Rating MVA (SN / SE / WN / WE)	Existing Conductor Rating MVA (SN / SE / WN / WE)
APS-2024-059	Monocacy – West Jefferson 230 kV Line	548 / 688 / 699 / 765	617 / 754 / 699 / 894
	West Jefferson – Doubs 230 kV Line	617 / 754 / 699 / 894	617 / 754 / 699 / 894



Proposed Solution:

Need #	Transmission Line / Substation Locations	New MVA Line Rating (MVA SN / SE / WN / WE)	Scope of Work	Estimated Cost (\$ M)	Target ISD
APS-2024-059	Monocacy – West Jefferson 230 kV Line	617 / 754 / 699 / 894	<ul style="list-style-type: none"> At Monocacy, replace circuit breaker, disconnect switches, substation conductor and relaying At Doubs, replace relaying 	\$4.0	04/06/2029
	West Jefferson – Doubs 230 kV Line				

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

6/28/2024– V1 – Original version posted to pjm.com