Subregional RTEP Committee - Western FirstEnergy Supplemental Projects

March 19, 2020

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 Misoperation Relay Project

Need Number: APS-2019-014

Process Stage: Solutions Meeting 3/19/2020

Previously Presented:

Need Meeting 12/18/2019

Project Driver:

Equipment Material Condition, Performance and Risk

Operational Flexibility and Efficiency

Specific Assumption Reference:

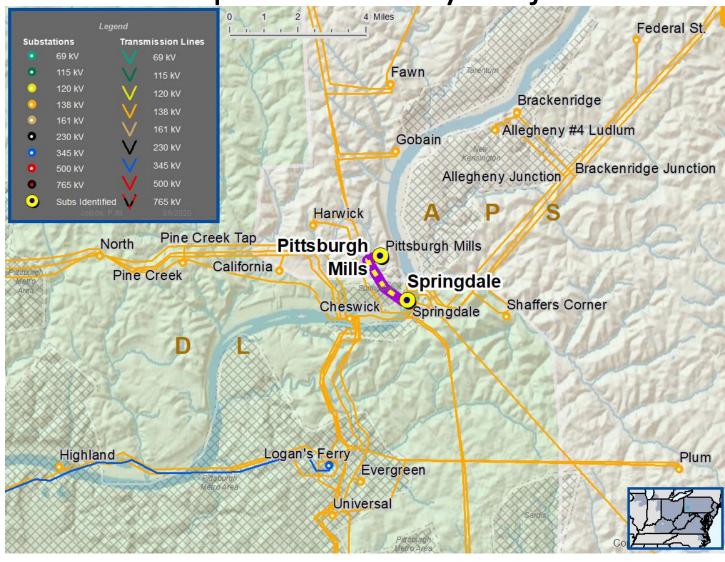
System Performance Projects Global Factors

- System reliability and performance
- Substation/line equipment limits

Upgrade Relay Schemes

- Relay schemes that have a history of misoperation
- Obsolete and difficult to repair communication equipment (DTT, Blocking, etc.)
- Communication technology upgrades
- Bus protection schemes

Continued on next slide...





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cases the protection equipment cannot be repaired due to a lack of replacement parts and available expertise in the outdated technology.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 Number	Transmission Line / Substation Locations	Existing Line Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment
APS-2019-014	Pittsburgh Mills – Springdale 138 kV Line	293/302	296/ 302	Line Trap





Proposed Solution:

Need Number	Transmission Line / Substation Locations	New MVA Line Rating (SN / SE)	Scope of Work	Estimated Costs (\$ M)	Target ISD
APS-2019-014	Pittsburgh Mills – Springdale 138 kV Line	296/302	 Pitts burgh Mills 138 kV Substation – Replace line trap and line relaying Springdale 138 kV Substation – Replace line trap and line relaying 	\$0.8M	5/29/2020

Alternatives Considered:

Maintain existing condition with elevated risk of failure No topology changes, no bubble diagram required.

Project Status: Engineering

Model: 2019 RTEP model for 2024 Summer (50/50)

Appendix

High Level M-3 Meeting Schedule

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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

3/6/2020 – V1 – Original version posted to pjm.com 3/17/2020 – V2 – Changed format of Slide #3