



Transmission Expansion Advisory Committee AEP Supplemental Project

November 30, 2021

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 Number: AEP-2020-AEP001

Process Stage: Needs Meeting 11/30/2021

Previously Presented: Needs Meeting 12/1/2020

Supplemental Project Driver: Operational Flexibility and Efficiency

Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions slide 8)

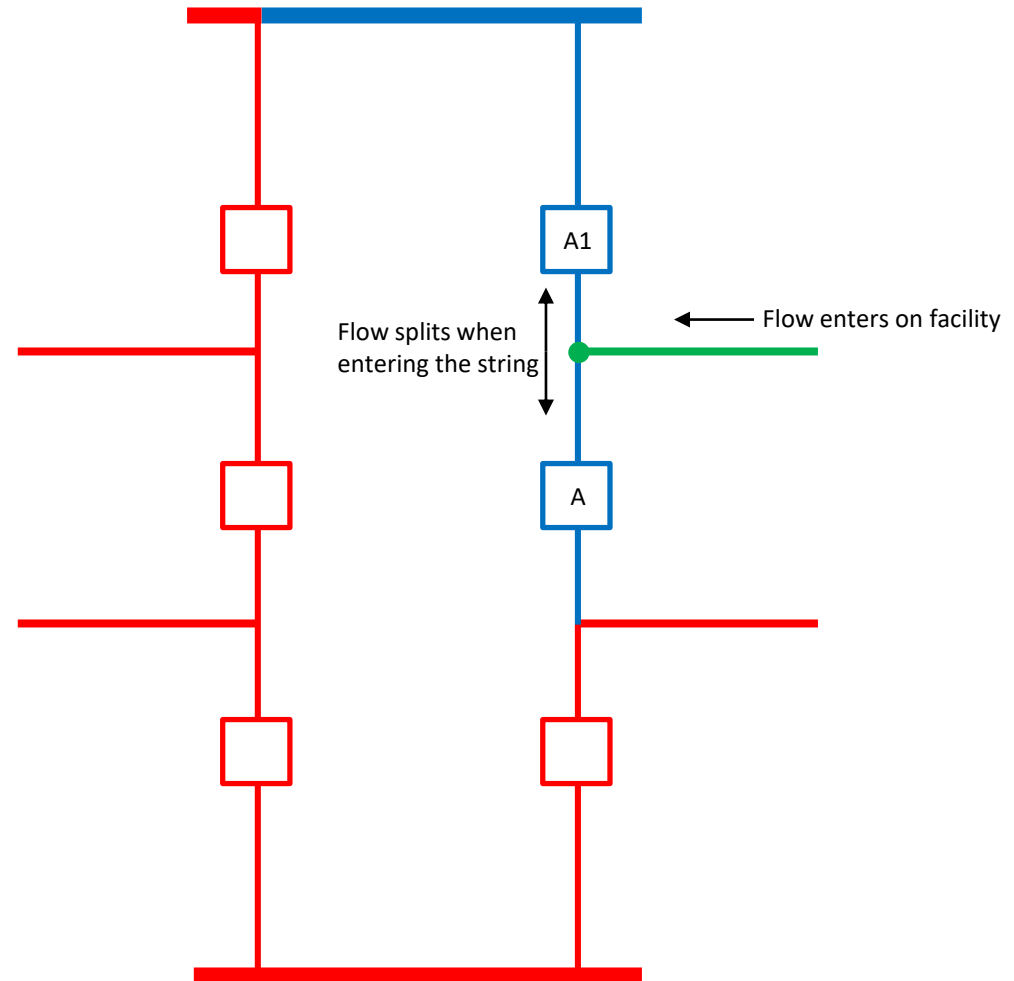
Problem Statement:

- AEP is proposing to implement a ratings methodology change whereby single element open ratings would be applied to all facilities as part of their overall rating. This is to avoid any compliance violations of FAC-008 and TOP standards in case a breaker is opened.
- AEP's historic practice was to apply a 2x multiplier to any facilities that connected in a configuration where flow could split between two paths in a station.
- This practice has been eliminated for any new facilities being constructed.
- AEP has maintained a list of facilities that continue to operate with a 2x multiplier on them pending future analysis and/or projects to address them
- For the 2025 RTEP analysis, AEP worked with PJM to apply single multiplier ratings to all facilities on the system
- There were four lines that were flagged in the 2025 analysis that show potential violations
 - ~~Muskingum-Waterford 345 kV line~~ Addressed through the 2021 RTEP Window 1. First read solution presented 10/5/2021.
 - Jefferson-Clifty Creek 345 kV line
 - East Lima 345/138 kV transformer
 - Olive-New Carlisle 138 kV line (flagged in market efficiency analysis)
 - **Marysville 765/345 kV Transformer #2 (flagged in market efficiency analysis)**
- AEP is proposing to address these needs in order to eliminate the exceptions and apply all single element open ratings in our future cases and in real time operations to comply with the request from PJM Operations and Planning

Model: PJM 2020 RTEP Series Cases

AEP Transmission Zone M-3 Process Ratings Methodology Changes

- Once the flow enters the string, the flow is assumed to split 50/50 between the connected string elements
- AEP's historic practice was to apply a 2x multiplier for all elements in this portion of the branch definition (blue outline)
- When either breaker A1 or A is opened, the flow is forced through only one portion of the string
- By changing the methodology, the ratings application will become consistent across all elements and branches
- Because these are considered as part of a ratings methodology change, the future analysis was used to flag facilities where overloads may occur because of this change
- AEP will propose supplemental projects to address the facilities of concern and will continue to apply the 2x multiplier exception until a project to replace the equipment driving the future overload is in service.



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

11/19/2021– V1 – Original version posted to pjm.com