Transmission Expansion Advisory Committee: AEP Supplemental Projects

August 08, 2023

Solutions

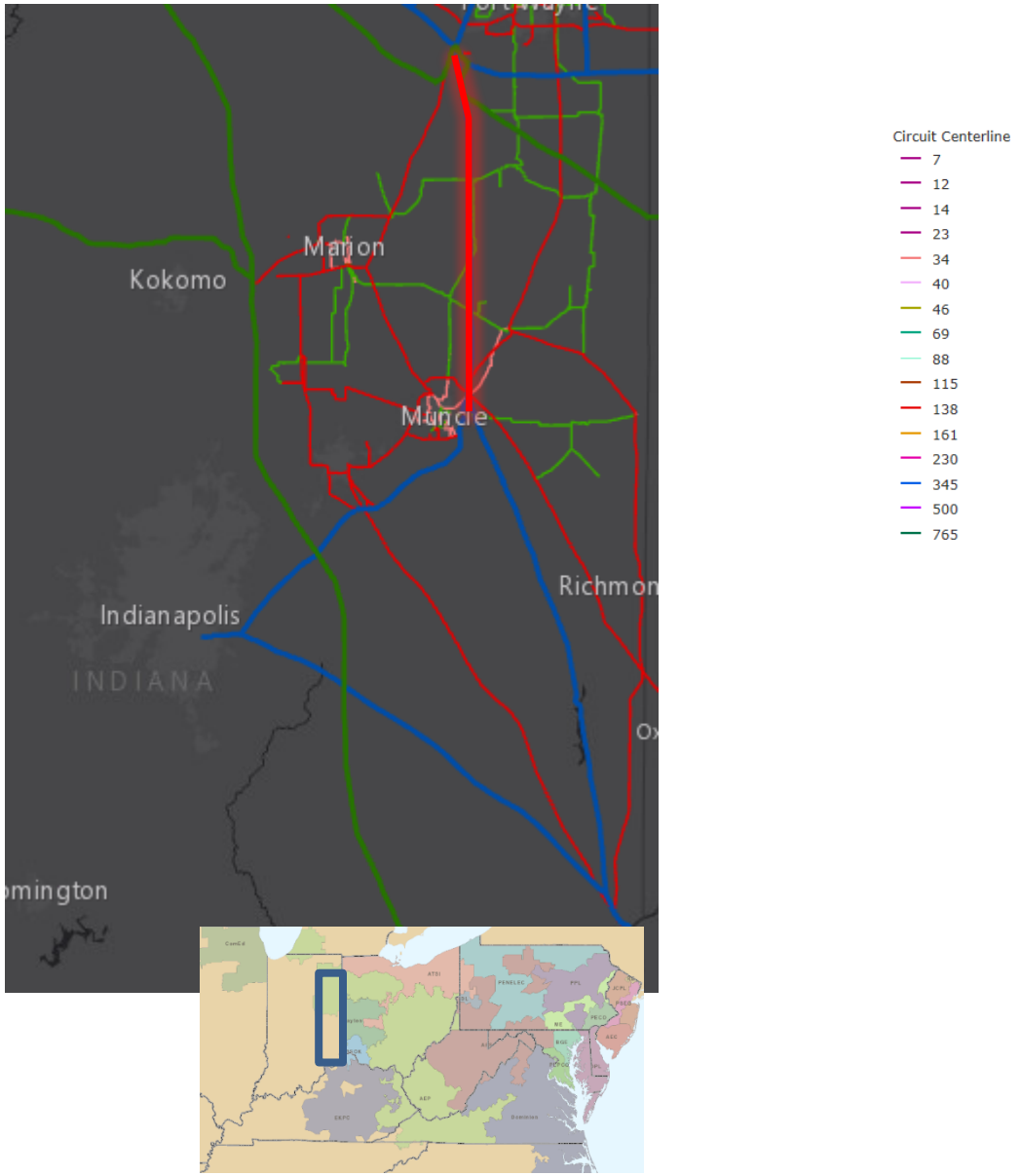
Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

AEP Transmission Zone M-3 Process
Sorenson – Desoto 345kV

Need Number: AEP-2021-IM028
Process Stage: Solutions Meeting 08/08/2023
Previously Presented: Needs Meeting: 9/17/2021
Supplemental Project Driver: Equipment Condition/Performance/Risk
Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)
Model: N/A
Problem Statement:

Desoto – Sorenson 345kV line (51.8 miles):

- Majority (211/216) structures are original 1952 Steel Lattice
- Majority (51.8 miles) of Conductor is 1952 vintage paper expanded conductor on the Sorenson – Desoto, Sorenson – Keystone and Keystone – Desoto circuits.
- Since 2014 there have been 22 momentary and 12 permanent outages across this line asset.
- The Paper Expanded conductor is difficult to splice during repairs due to the unavailability of like for like replacement conductor.
- Line is prone to galloping and causes issues for sensitive customers in the Marion and Ft Wayne area.
- 19 structures on the full Tanners Creek – Desoto – Sorenson asset were investigated at the ground and 38 structures were assessed by drone.
    - 20 of these structures had rust or galvanizing
    - 11 had broken/flashes or rusted insulators
    - 6 had sliding/bent or damaged dampers
    - 1 had broken spacers
- With 211 open conditions total, 124 of the 216 structures have at least one open condition. These open conditions include but are not limited to the following.
    - Loose braces; damaged, loose, or rust heavy lacing; rusty legs; broken, damaged, or gunshot conductor; broken or corroded shield wire; and significant hardware issues.



AEP Transmission Zone M-3 Process
Sorenson – Desoto 345kV

Need Number: AEP-2021-IM028
Process Stage: Solutions Meeting 08/08/2023

Proposed Solution:

Sorenson – Desoto 345kV:
Rebuild the ~51.5 mile line as is using double circuit 345kV construction. Replace jumpers at Sorenson and Desoto to accommodate the new structure entrances at the stations.

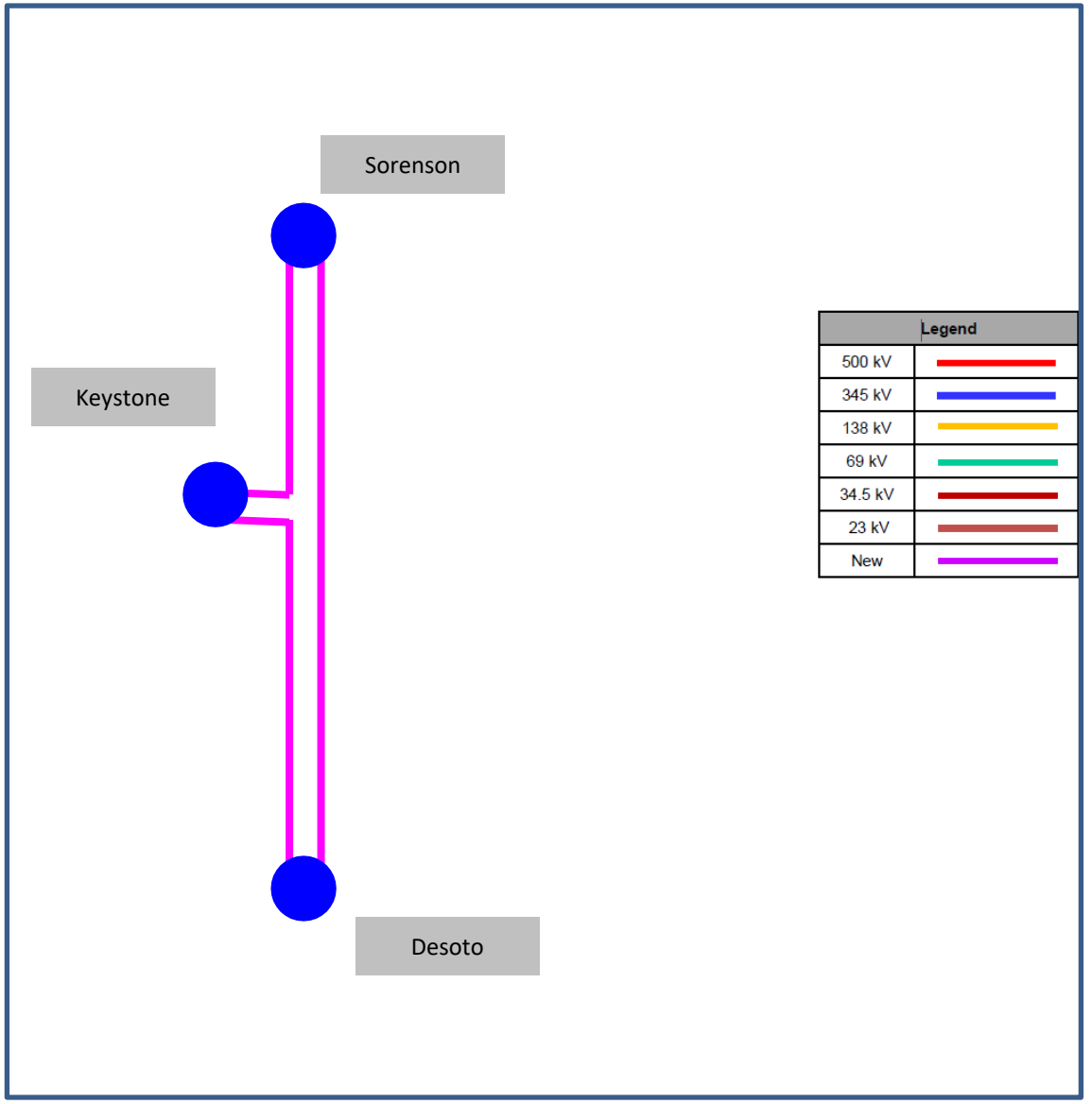
Existing Conductor, Circuit Ratings: 1275 and 1350 ACSR/PE, 2303 ACAR, 897/897/1138/1138 SN/SE/WN/WE MVA

New Conductor, Circuit Ratings: 2-954 ACSR, 1025/1318/1298/1522 SN/SE/WN/WE MVA
Estimated Cost: $202.4M

Alternatives Considered:
Alternate 1
Rebuild this line as a single circuit 345kV line. Due to the 11 IPP's currently in the queue to connect to both sides of this double circuit corridor and this being the only corridor connecting the Fort Wayne system to the Tanners Creek 345kV hub this was not considered.
Cost: $187.4M

Projected In-Service: 06/10/2027

Project Status: Scoping



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

7/28/2023– V1 – Original version posted to pjm.com

8/4/2023 – V2 – Slide#4, Add existing/new conductor ratings