



Transmission Expansion Advisory Committee AEP Supplemental Project

April 12, 2022

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

AEP Transmission Zone M-3 Process

Conesville – Bixby 345 kV

Need Number: AEP-2022-OH039

Process Stage: Need Meeting 4/12/2022

Project Driver:

Equipment Material/Condition/Performance/Risk

Specific Assumption Reference:

AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13)

Problem Statement:

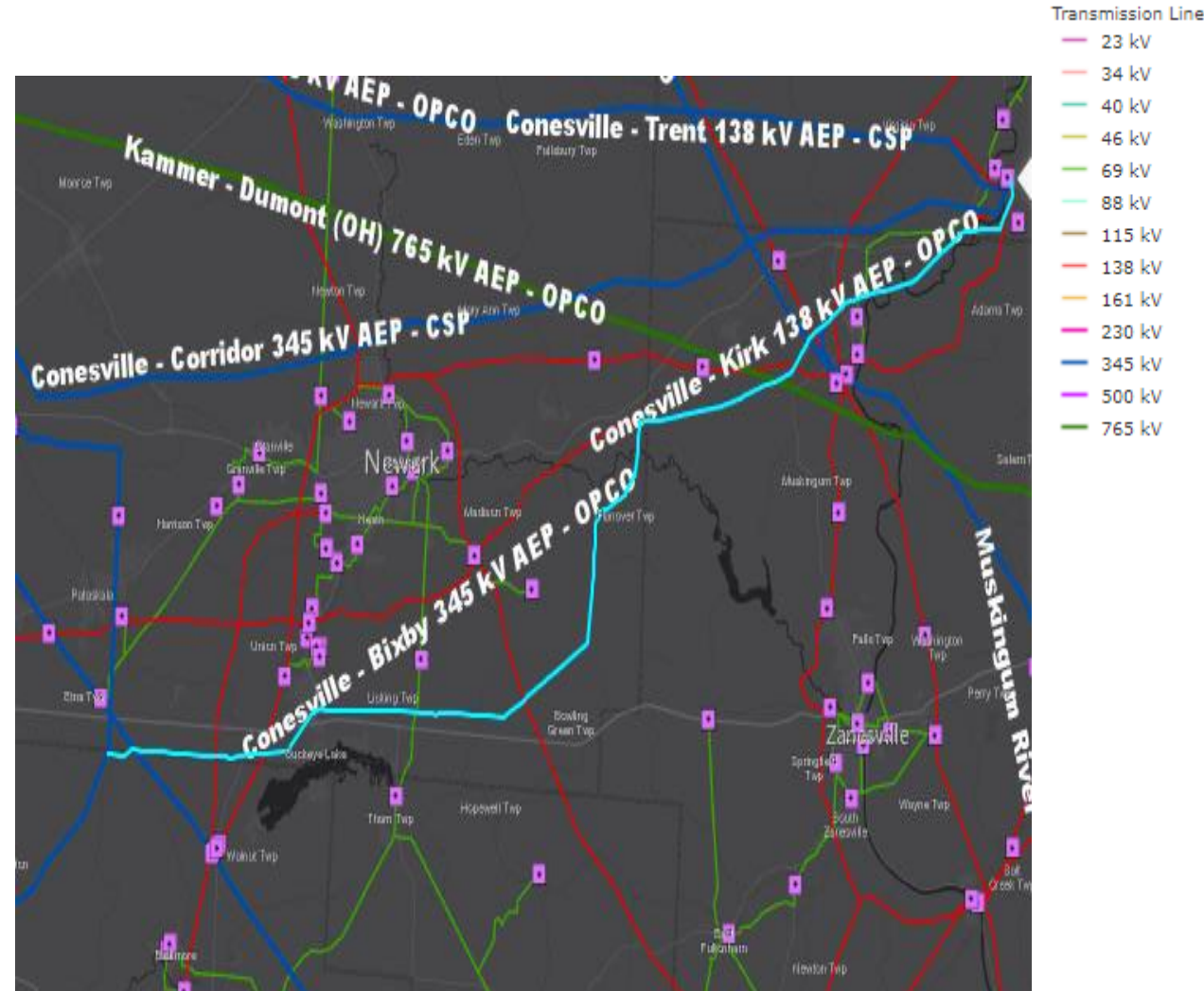
Conesville – Bixby

- Length of Line: 51.10 Miles
- Total Structure Count: 342
 - ~73% of the structures are wood structures from the early 1970's.
 - ~25% of the structures are steel structures installed between 2010 and 2021. Replacements were performed proactively mostly at and along major interstates
 - The remaining ~2% are steel structures installed in the early 1970's.
- Conductor Types: 954 ACSR 45/7, 954 ACSR 54/7
- Outage History: 5 Momentary and 5 Permanent outages since 2015
- Open Conditions:

There are currently 30 structure based open conditions consisting of rot heart, rot shell, broken knee/vee brace, heavy rust, broken/burnt/damaged poles, leaning transverse poles sitting in water, and woodpecker damage. There are additional concerns over delamination of crossarms on the line as detailed in the next slides.

There are currently 12 hardware based open conditions consisting of loose clamps, missing bolts, burnt, chipped and gunshot damage to insulators.

The line fails to meet current AEP structural strength requirements and utilizes inadequate shielding angles for current AEP lightning protection standards.



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Conesville - Bixby

When the 345 kV line was constructed in the 1970's, it was done so utilizing an H-frame design with wood poles that involved the use of laminated crossarms rather than solid wood crossarms. Recent inspections have revealed signs of noticeable deterioration of the laminated crossarms. The green decay and orange rot as shown in the pictures is irreversible wood decay on the laminated crossarms.

There are limited inspection techniques available to identify areas of concern in laminated crossarms before a loss in functionality occurs and causes a permanent outage. Various industry organizations have attempted to analyze the stages of crossarm decay with varying degrees of success. This is the last line left on AEP's eastern footprint with this type of crossarm design.

AEP's experience with these laminated cross arms is that over time, due to the decay and delamination issues associated with the crossarm design, along with limitations to determine loss of functionality, failures on the line have historically been catastrophic in nature.



AEP Transmission Zone M-3 Process Conesville – Bixby 345 kV



Questions?



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

3/31/2022– V1 – Original version posted to pjm.com