Sub Regional RTEP Committee: Western
AEP Supplemental Projects

December 17, 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

AEP Transmission Zone M-3 Process
Sullivan County, Tennessee

Need Number: AEP-2021-AP037

Process Stage: Needs Meeting 12/17/2021

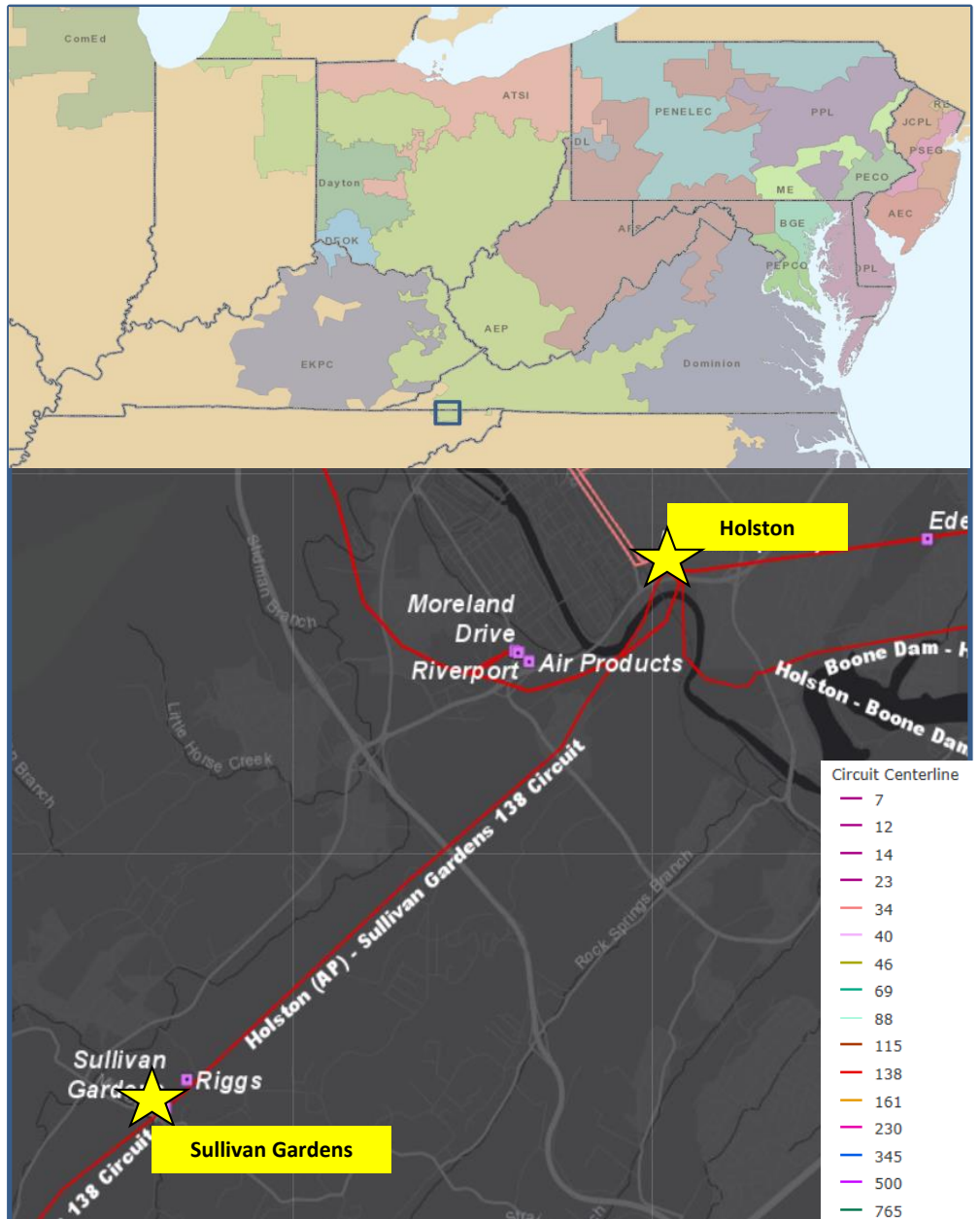
Supplemental Project Driver: Equipment Condition/Performance/Risk

Specific Assumption Reference: AEP Guidelines for Transmission Owner Identified Needs (AEP Assumptions Slide 13), AEP Presentation on Pre-1930s Lines

Problem Statement:

Holston – Sullivan Gardens 138 KV (installed in 1927)

- Length: 4.96 Miles
- Original Construction Type: Lattice Steel
- Original Conductor Type: 250,000 CM COPPER 12
- Momentary/Permanent Outages: 6/2 (1/1/2016 – 06/30/2021)
- Total CMI: 168,448
- structure count: 39
- Number of open conditions: 21
  - Open conditions include: Rusted structure legs, burnt conductor, broken shield wire, broken hardware, structure rust.
  - Unique structure count with open conditions: 19 (49%)
- The majority of the structures currently without conditions are of the same vintage and can reasonably be expected to incur similar conditions in the future. Please also reference the AEP presentation on the pre-1930s era lattice lines: https://www.pjm.com/-/media/committees-groups/committees/srrtep-w/20191218/20191218-aep-system-pre-1930s-tower-lines.ashx
    - Risks on Pre-1930s Tower Lines include:
      - Original designs do not account for modern wind and ice loading requirements.
      - The configuration of the structures are inadequate for lightning protection to meet modern power quality expectations.
      - Conductor splice and connection hardware deterioration.
      - Fraying/rusting of the conductor once the steel core is exposed (typically at the belly of the sag).
      - Copper conductor is often brittle and hard to repair.
      - Corrosion and deterioration of conductor hardware and ceramic bell insulators.
      - Wear on attachment hardware from conductor movement.
      - Corrosion and deterioration of lattice steel and steel bolts.
      - Loss of galvanizing coating on above and below grade steel and potential ground line deterioration of the legs.
      - Steel grillage foundation deterioration.
- Load at Risk: 9 MVA (Riggs Substation)



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
Lynchburg, VA Area

Need Number: AEP-2020-AP041

Process Stage: Solutions Meeting 12/17/2021

Previously Presented: Needs Meeting 10/16/2020

Supplemental Project Driver: Customer Service

Specific Assumption Reference: AEP Connection Requirements for the AEP Transmission System (AEP Assumptions Slide 7)

Problem Statement:

AEP Distribution is requesting a new 138/12 kV transformer at Reusens station to transfer load from Peakland and Boonsboro stations due to the following concerns:

- Peakland station site inadequate for significant expansion (size & terrain) and is currently served by a radial tap from Reusens – Dearington 69 kV line.
- Both Peakland 12 kV circuits are loaded over 90% summer capacity
- Boonsboro 138/12 kV, 20 MVA transformer loaded over 90% in winter
- Boonesboro 12 kV circuit projected to overload by summer 2025

AEP Transmission Zone M-3 Process
Lynchburg, VA Area

Need Number(s): AEP-2020-AP041

Process Stage: Solutions Meeting 12/17/2021

Proposed Solution:

Reusens Station ($3.07 M)

- Expand Reusens Station and install 138/12kV, 20MVA transformer connected to 138 kV bus #2, 12 kV bus regulators and two 12 kV breakers

Estimated Total Cost: $3.07 M

Ancillary Benefits:
Reliability to customers served from Peakland and Boonsboro stations will increase by transferring load to Reusens, eliminating the potential for future overloads

Alternatives Considered:
Expand Peakland Station and install second 69/12 kV transformer. The existing station site is unable to be expanded to accommodate the new transformer, so the alternative was not viable.

Projected In-Service: 3/31/2022

Project Status: Engineering

No Bubble Diagram Needed

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

12/7/2021 – V1 – Original version posted to pjm.com