



Sub Regional RTEP Committee PJM West

July 17, 2020

Project Update

Baseline Scope change: B3100, Previously presented in 1/11/19 and 2/20/19 SRRETP

Problem Statement:

Planning Criteria Violations: In the 2022 PJM Winter RTEP, a TO Criteria violation was identified due to exceeding the thermal emergency rating (106% of the 66 MVA thermal emergency rating) on Chemical transformer #2 under a N-1-1 contingency condition involving the loss of the Chemical transformer #6 (which includes the loss of XFR #4, Chemical – Turner 138 kV line and Chemical – Ortin 138 kV, due to the loss of 138 kV bus #1) paired with the loss of the Capitol Hill – Chemical 138 kV line (which includes the loss of XFR #1, due to its existing configuration on the line).

Selected Solution:

~~Replace 138kV MOAB switch “YY” with a new 138kV circuit switcher on the high side of Chemical XFR #6.~~

Relocate 138 kV circuit breaker W between 138 kV bus #1 extension and bus #2. Install a new 138 kV circuit breaker between bus #1 and bus #1 extension.

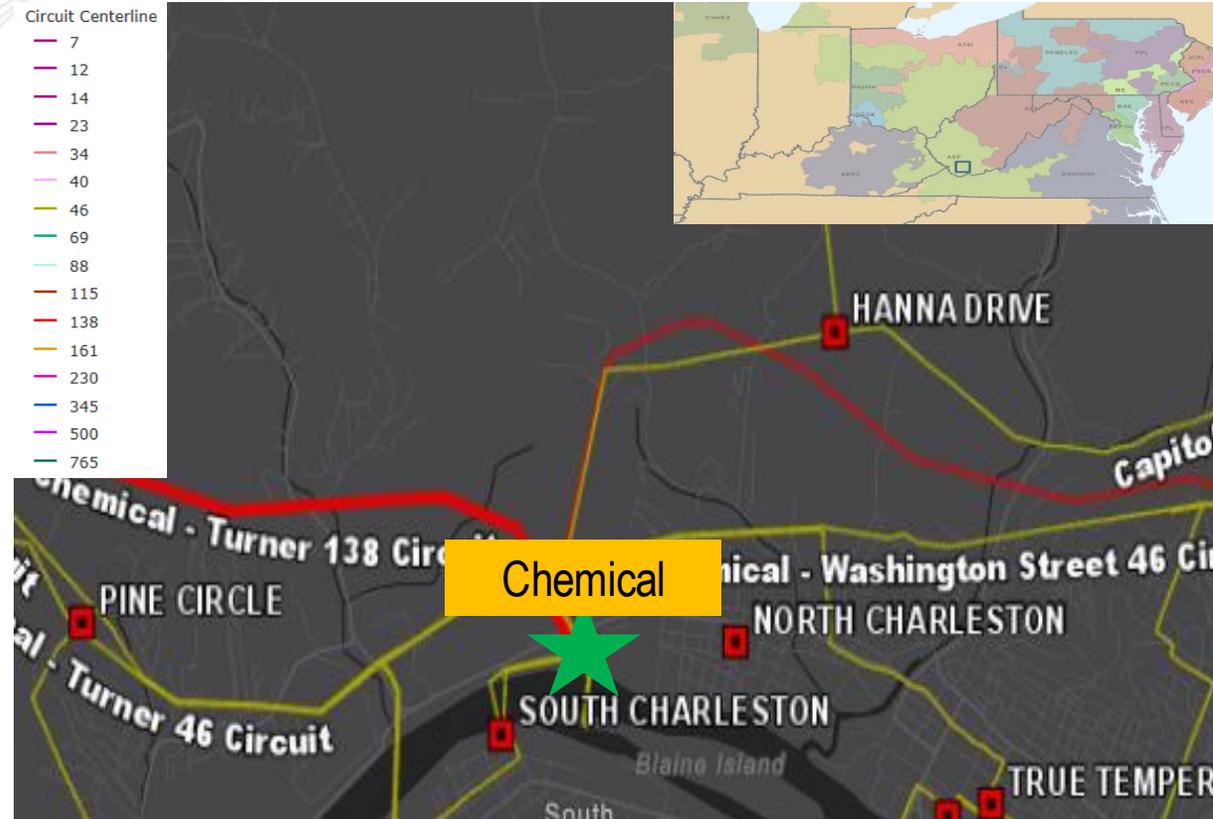
Total Estimated Transmission Cost: \$0.7M

Ancillary Benefits: The addition of the 138 kV circuit breaker W1 on the No. 6 200 MVA Transformer creates an improved operational configuration where no single event, such as a circuit breaker failure, would cause both 138 kV buses to be outaged which in turn would otherwise also outage all three of the 138 – 46 kV transformers at Chemical Station. This configuration that creates three 138 kV buses allows for a significantly increased flexibility to both schedule maintenance outages and withstand forced outages on the 138 kV equipment at Chemical Station.

Reason for the change: The baseline solution was re-visited as AEP completed engineering for the supplemental solution (AEP-2018-AP018 and AEP-2019-AP010). Instead of installing a switcher only on the high side of the transformer, AEP installs a breaker in series with existing breaker W to create another high side bus to serve the 138/46 kV transformer. The cost is the same; it only affects the layout of the high side of the station. As outlined in the ancillary benefits though, it allows for much greater operational flexibility.

Required In-service: 12/1/2022

Project Status: Scoping



Baseline Scope Change: B3116, Previously presented 2/20/19 and 5/20/19 in SRRTEP

Problem Statement:

Planning Criteria Violations: In the 2022 PJM Winter RTEP, TO Criteria violation due to exceeding thermal emergency rating (105% of the 35 MVA thermal emergency rating) on Mullens 138/46 kV transformer #4 under N-1-1 contingency condition involving the loss of the Bradley – Jehu Branch 138 kV line plus the loss of the Tams Mountain – Mullens 138 kV line.

Selected Solution:

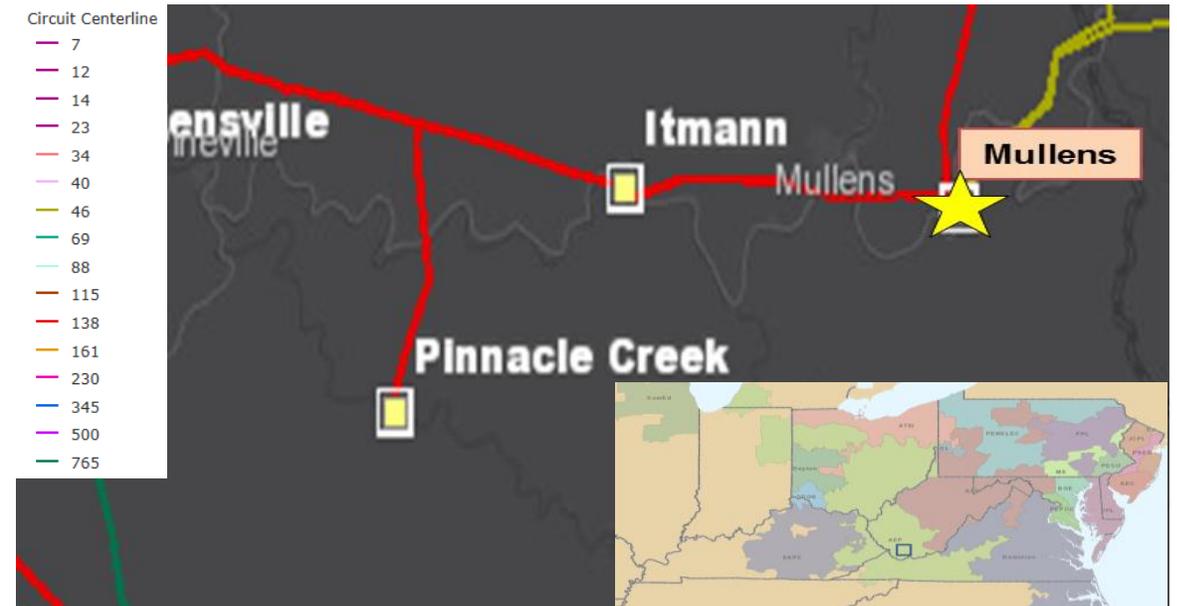
Replace existing 138/46kV 30 MVA transformer #4 and associated protective equipment with a with a new 138/46 kV 90 MVA transformer and associated protective equipment. **Install required high side transformer protection by replacing the existing ground switch MOAB with a new 138 kV high side circuit breaker.**

Total Estimated Transmission Cost: ~~\$3.0M~~ \$4.0M

Reason for the change: It's a scope clarification to include that piece of the baseline solution. When replacing the transformer, the existing high side ground switch MOAB will also be replaced with a circuit switcher. This is considered baseline work because it is required with the replacement of the transformer.

Projected In-service: 6/1/2022

Project Status: Scoping



Baseline Project Cancellation: B2594, Previously presented in 1/7/15 TEAC

Problem Statement:

TO criteria violation: The Brantly – Bridge S 69KV line is overloaded for the loss of Danville – Riverside 138kV line

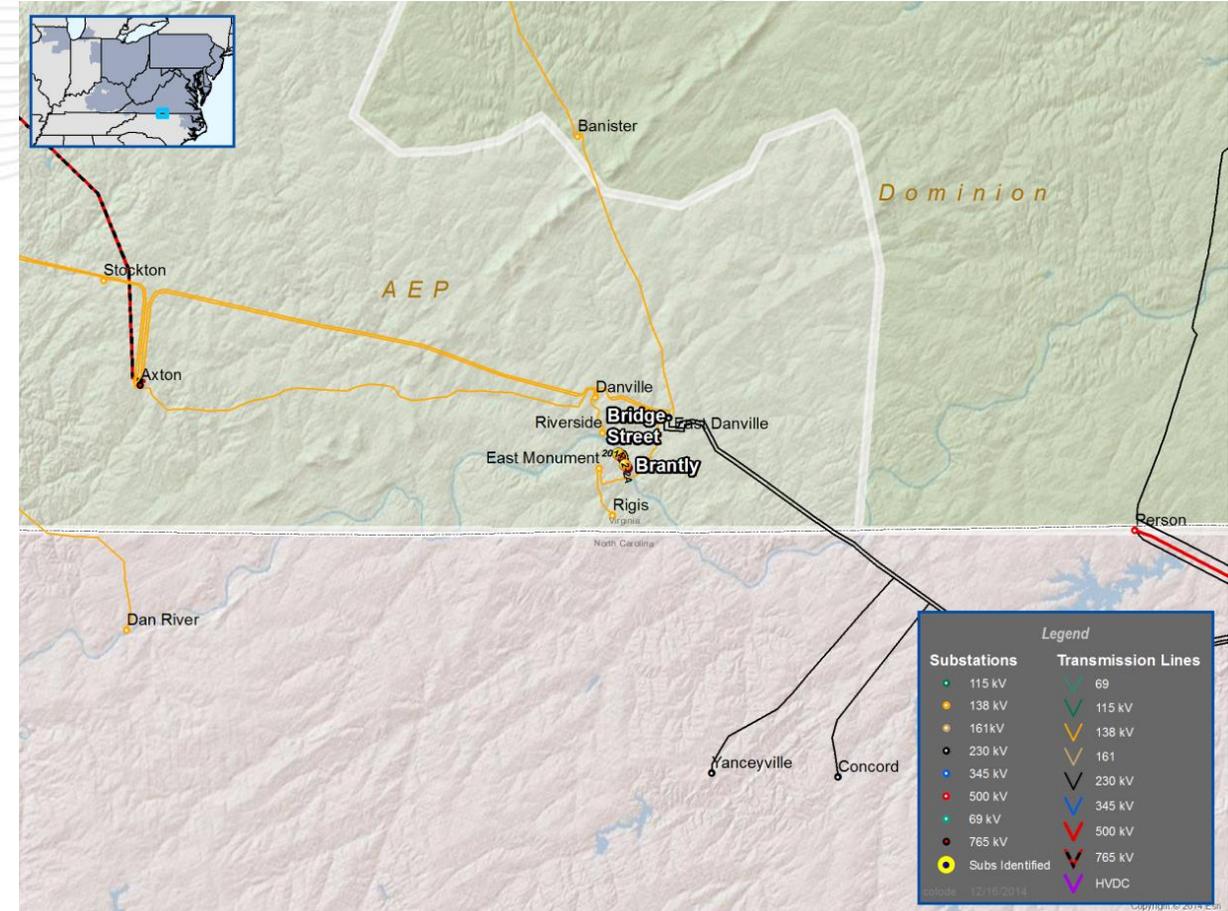
Recommended Solution:

Rebuild 1.0 mile of Brantly-Bridge Street 69 kV Line with 1033 ACSR overhead conductor. (P2014_2-2A)

Estimated Project Cost: \$1.5 M

Required IS Date: 6/1/2019

Reason for the Cancellation: The line is entirely owned by Danville, not AEP. This is not a PJM tariff facility.



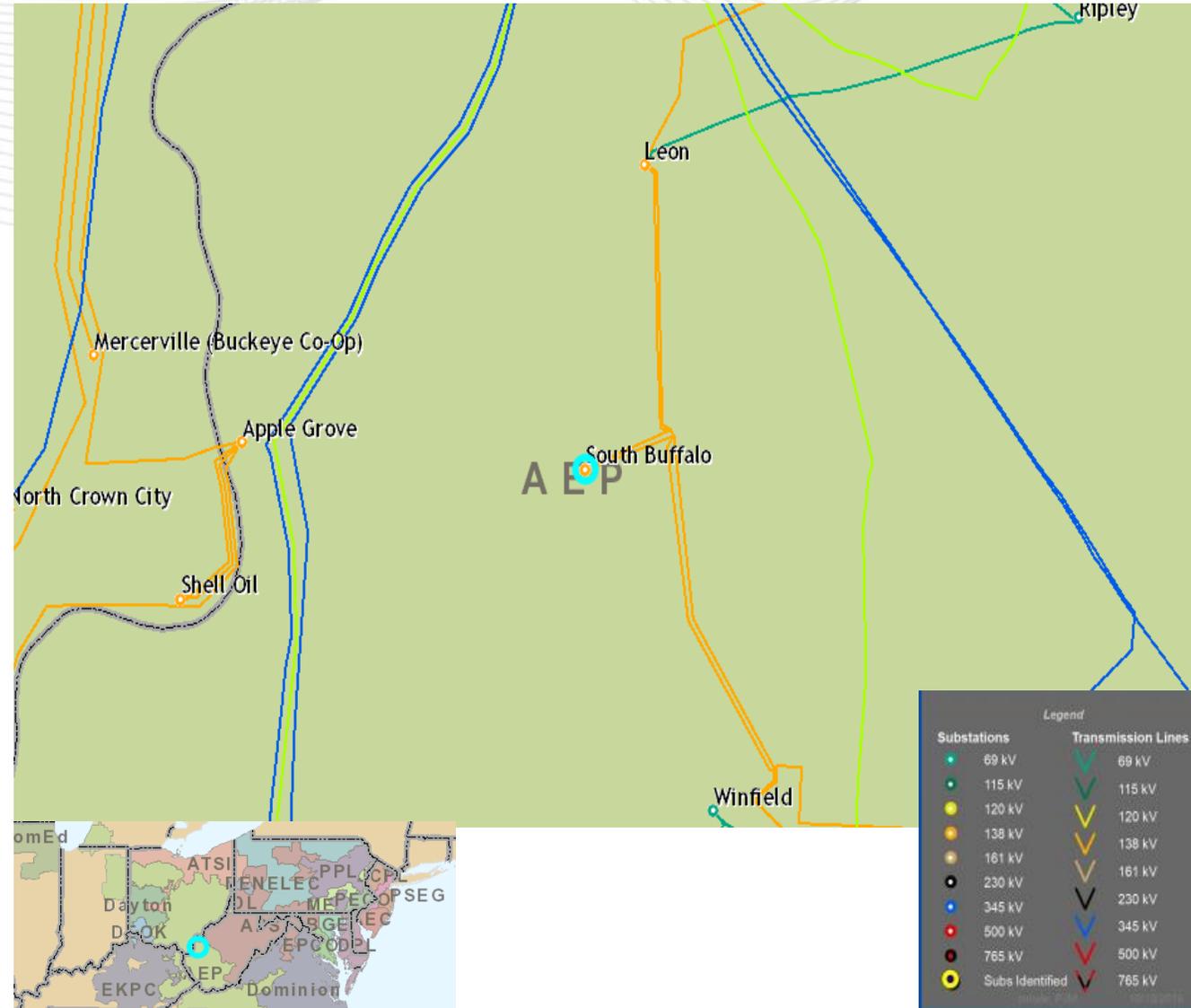
Baseline Scope Change: B3040.6, Previously presented 8/31/19 and 9/28/19 in SRRTEP

Original Scope: South Buffalo: Install 28.8 MVAR Cap Bank
New Scope: South Buffalo: Install 34.6 MVAR Cap Bank

Old Estimated Project Cost: \$0.8 M
New Estimated Project Cost: \$0.8 M

Required IS Date: 6/1/2022

Reason for the Change: AEP, in working with vendors to ensure the most cost effective equipment is available, changed their standard equipment list with respect to capacitor banks. 28.8 MVAR capacitor banks were removed as part of this review, so the next size available is 34.6 MVAR. This change has no cost impact on the project and is re-presented here due to the required change to future cases.



Questions?



- V1 – 7/10/2020 – Original slides posted