Dominion Supplemental Projects

Transmission Expansion Advisory Committee
November 1, 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

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0054
Process Stage: Need Meeting 11/01/2022
Project Driver: Customer Service

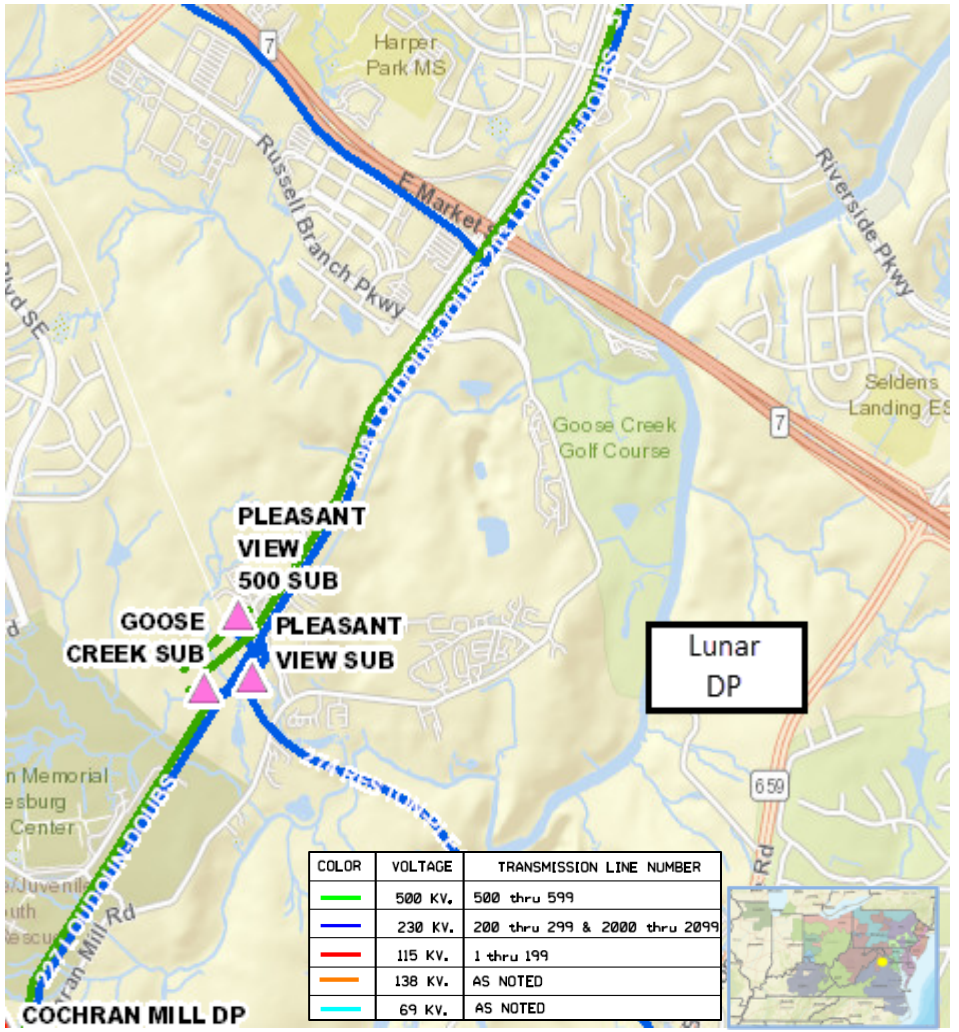
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

DEV has submitted a DP Request for a new substation (Lunar) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 3/01/2024.

Initial In-Service Load	Projected 2027 Load
Summer: 12.0 MW	Summer: 211.0 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0055
Process Stage: Need Meeting 11/01/2022
Project Driver: Customer Service

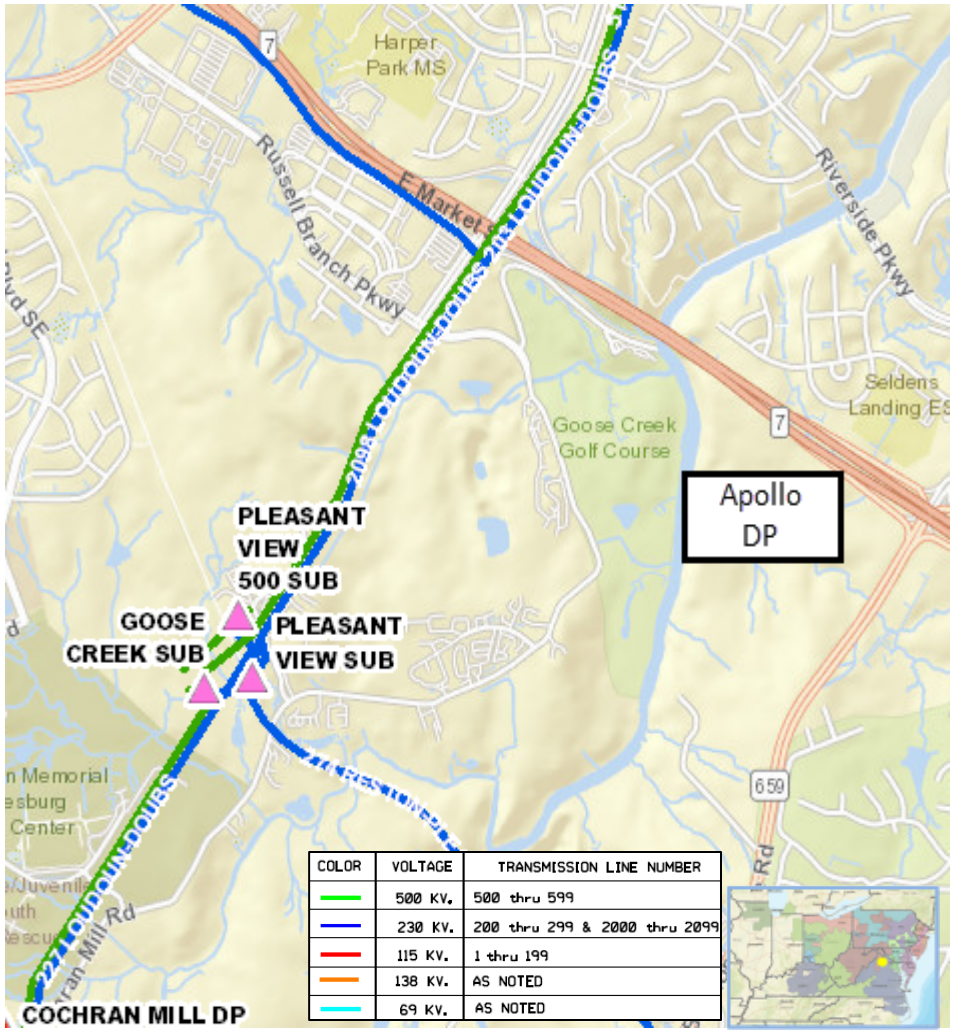
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

DEV has submitted a DP Request for a new substation (Apollo) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 1/1/2025.

Initial In-Service Load	Projected 2027 Load
Summer: 27.0 MW	Summer: 176.0 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0056
Process Stage: Need Meeting 11/01/2022
Project Driver: Customer Service

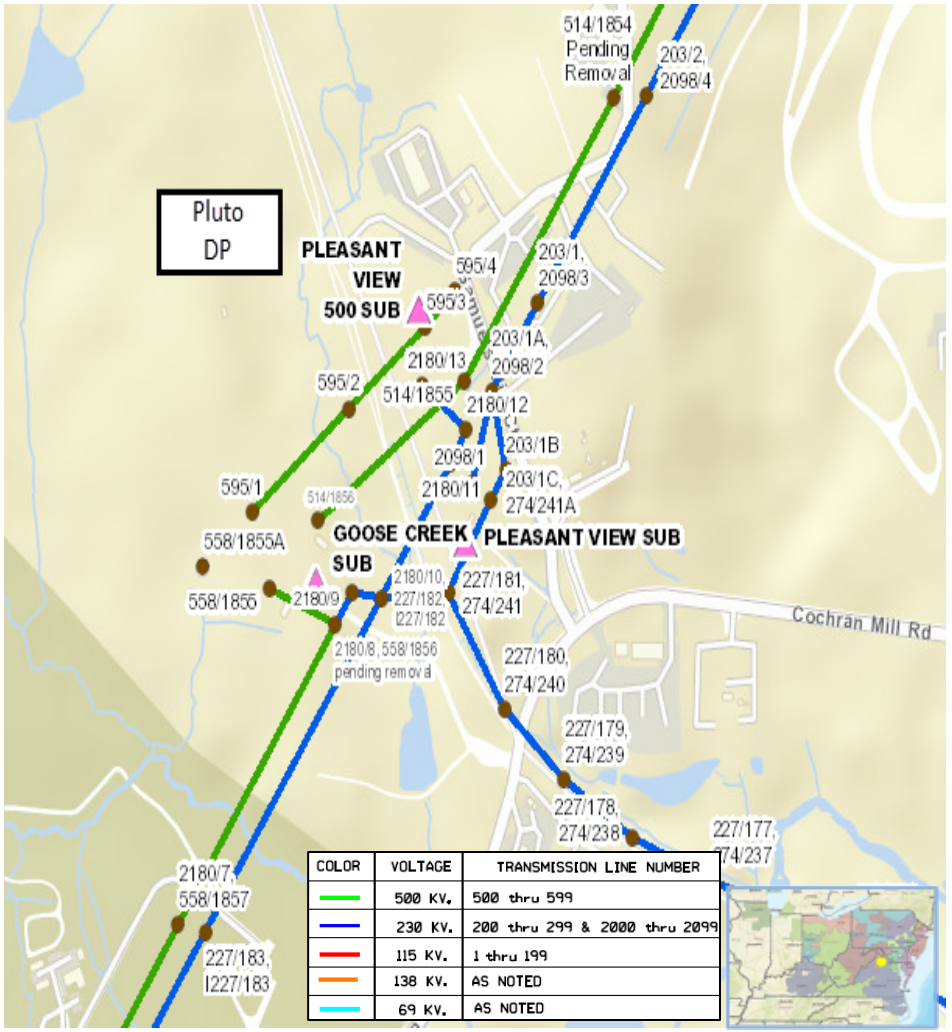
Specific Assumption References:

Customer load request will be evaluated per Dominion's Facility Interconnection Requirements Document and Dominion's Transmission Planning Criteria.

Problem Statement:

DEV has submitted a DP Request for a new substation (Pluto) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 11/1/2025.

Initial In-Service Load	Projected 2027 Load
Summer: 54.0 MW	Summer: 139.0 MW



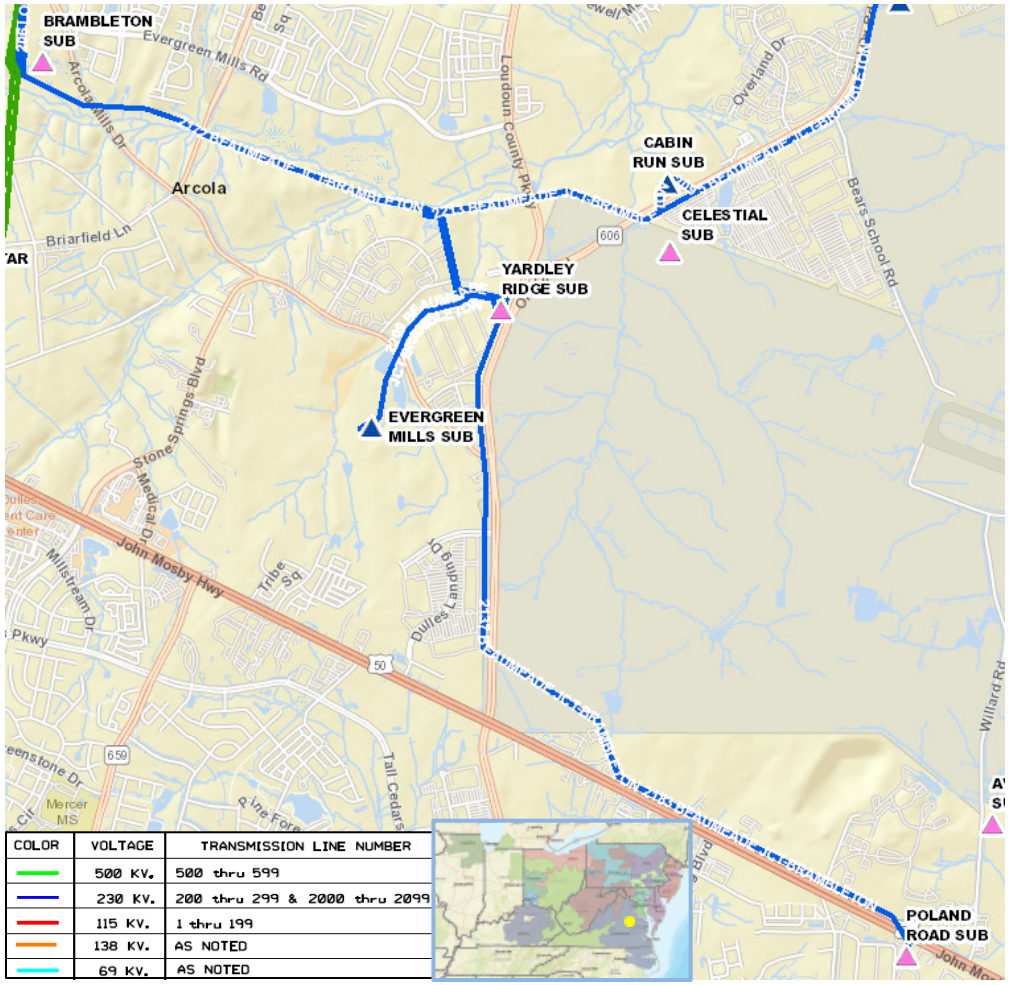
Dominion Transmission Zone: Supplemental Operational Flexibility and Efficiency

Need Number: DOM-2022-0057
Process Stage: Need Meeting 11/01/2022
Project Driver: Operational Flexibility and Efficiency

Specific Assumption References:
See details on Operational Flexibility and Efficiency in Dominion's Planning Assumptions presented in December 2021.

Problem Statement:
Near-term planning studies and Dominion Energy Operations Engineering studies have identified overloads on 230 kV Line #2172 (Brambleton – Evergreen Mills) for the loss of Line #2183 (Brambleton – Poland Road).

The Dominion Energy Operations team needs a temporary solution to avoid this overload on Line #2172 and accordingly provide flexibility for future construction outages.



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

Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

Need Number: DOM-2022-0051

Process Stage: Solution Meeting 11/01/2022

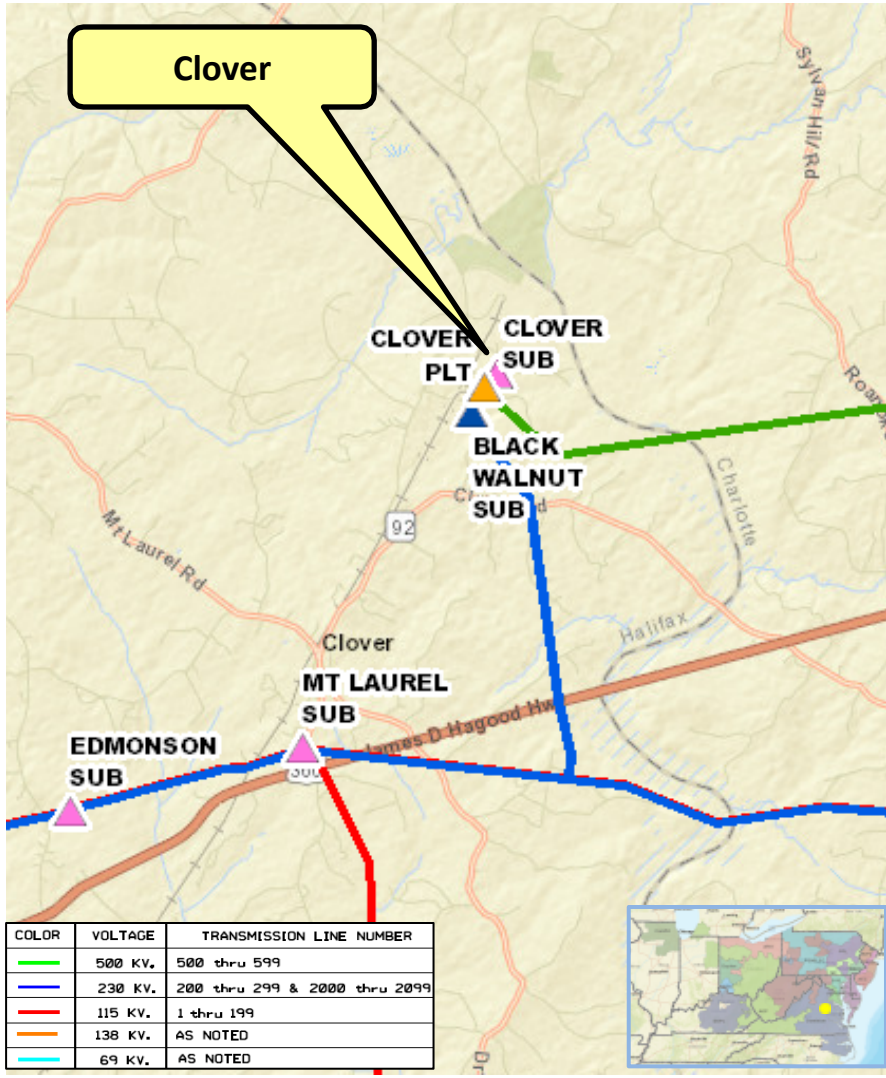
Previously Presented: Need Meeting 09/06/2022

Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:
See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2021.

Problem Statement:

Dominion Energy has identified a need to replace five 230kV breakers (L912, 206812, SX1212, SX12T235 & 23512) and six disconnect switches (SX1214, SX1215, SX1218, 23518, 23514, & 23515) at Clover Substation. These breakers and switches were manufactured in 1993 and are at end of life. Additionally, there has been an increase in maintenance issues and difficulties in obtaining spare parts.



Dominion Transmission Zone: Supplemental
Replace Clover Substation Breakers and Switches

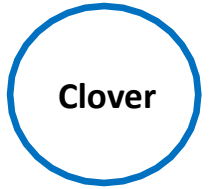
Need Number: DOM-2022-0051

Process Stage: Solution Meeting 11/01/2022

Proposed Solution:

Replace the following 230kV breakers and switches at Clover Substation -

- Two breakers (L912 and 206812) with 3000 amp 50kA breakers.
- Three breakers (SX1212, SX12T235 & 23512) with 4000 amp 63kA breakers.
- Six disconnect switches (SX1214, SX1215, SX1218, 23518, 23514, & 23515) with 4000 amp switches.



Estimated Project Cost: $ 2.75M

Alternatives Considered: None

Projected In-Service Date: 6/01/2023

Project Status: Engineering

Model: 2027 RTEP

Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

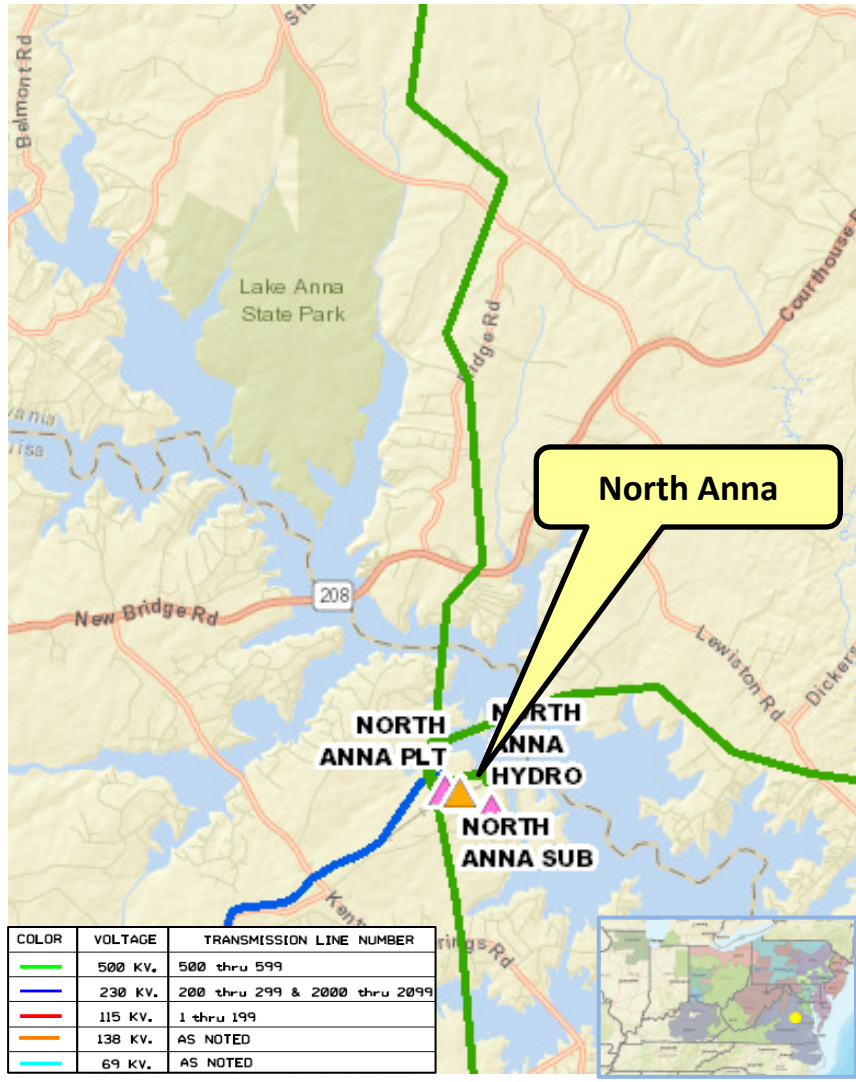
Need Number: DOM-2022-0052
Process Stage: Solution Meeting 11/01/2022
Previously Presented: Need Meeting 09/06/2022

Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:
See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2021.

Problem Statement:
Dominion Energy has identified a need to replace 230kV equipment at North Anna substation:

- Breaker 25502 at end of life, manufactured in 1993
- Center breaker switches H304, H305, 25504 and 25505 at end of life about 20 years old
- Line #255 wave trap at end of life 21 years old
- Transformer #3 high side circuit switcher H302 due to fault interruption requirements



Dominion Transmission Zone: Supplemental
Replace North Anna Substation Breakers and Switches

Need Number: DOM-2022-0052
Process Stage: Solution Meeting 11/01/2022

Proposed Solution:
Replace the following 230kV equipment at North Anna Substation -

- Breaker 25502 with a 3000 amp 63kA breaker.
- Center breaker switches H304, H305, 25504 and 25505 with 3000 amp switches
- Line #255 wave trap with a 3000 amp wave trap
- Transformer #3 high side circuit switcher H302 with a 1200 amp 40kAIC circuit switcher

Estimated Project Cost: $ 2.36M

Alternatives Considered: None

Projected In-Service Date: 8/30/2023
Project Status: Engineering
Model: 2027 RTEP

Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance and Risk

Need Number: DOM-2022-0053

Process Stage: Solutions Meeting 11/01/2022

Previously Presented: Need Meeting 09/06/2022

Project Driver: Equipment Material Condition, Performance and Risk

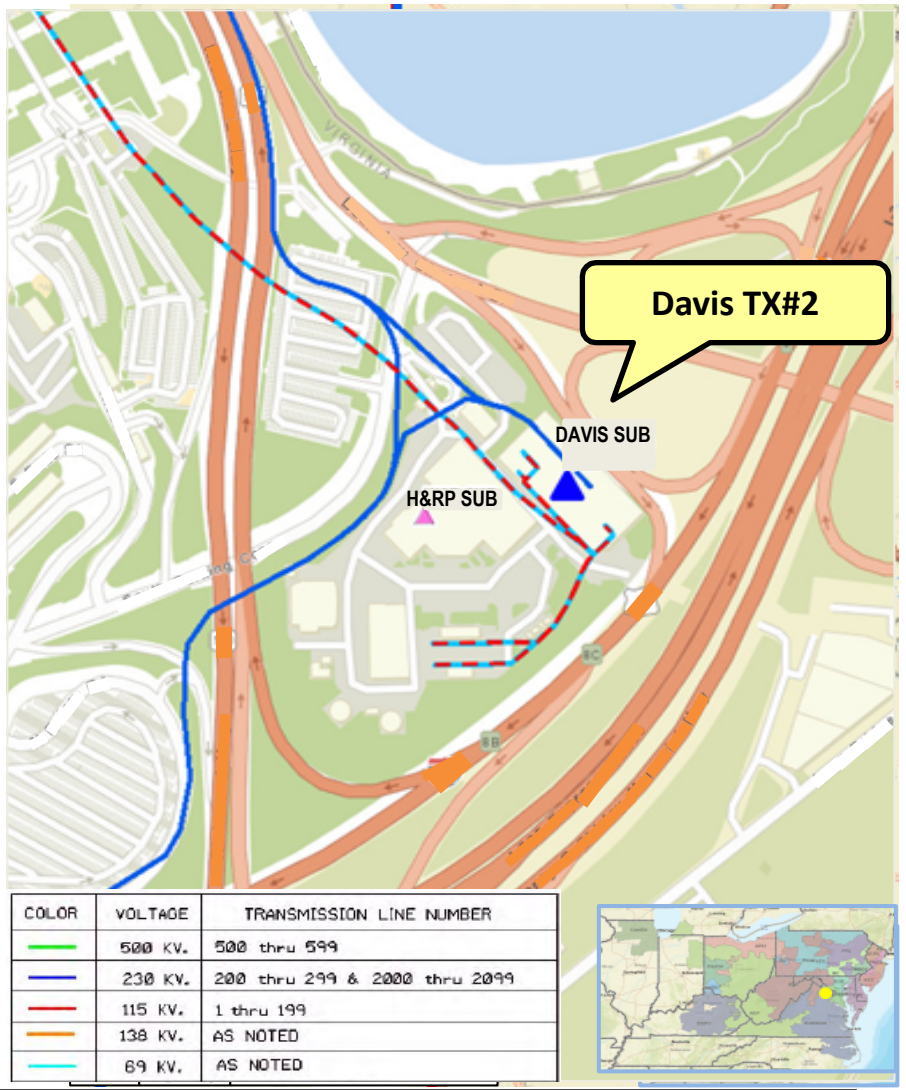
Specific Assumption References:
See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2021.

Problem Statement:

Davis TX#2 is a 168 MVA, 230/69/13.2 kV transformer bank that was manufactured in 1990. This transformer bank has been identified for replacement based on the results of Dominion's transformer health assessment (THA) process. Detailed drivers include:

- Age (>30 years old).
- Reduced BIL ratings (2 levels below standard).
- Tertiary winding design not meeting current MVA requirement for loading.
- Degraded porcelain type bushings.

Additionally, a protection scheme update at Davis requires the addition of multiple external bushing CT's to the low-voltage and high-voltage bushings which will compromise strike distances on the bushings. The ability to add more internal CT's was not considered when the transformer was ordered in 1989.



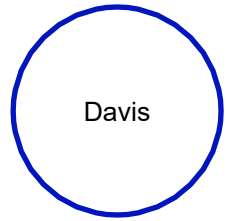
Dominion Transmission Zone: Supplemental
Replace Davis TX#2 - DEV

Need Number: DOM-2022-0053
Process Stage: Solution Meeting 11/01/2022

Proposed Solution:
Replace Davis TX#2 with a new three-phase, 230/69/13.2 kV, 168 MVA unit.
Include other ancillary equipment (arresters, switches, relays, etc.) as needed.

Estimated Project Cost: $4.5 M

Alternatives Considered:
None



Projected In-service Date: 06/30/2023

Project Status: Engineering

Model: 2027 RTEP

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

10/25/2022 – V1 – Original version posted to pjm.com

10/31/2022 – V2 – Updated wording on slides 10 & 11.