Dominion Supplemental Projects

Transmission Expansion Advisory Committee
August 8, 2023

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-2023-0042

Process Stage: Need Meeting 08/08/2023

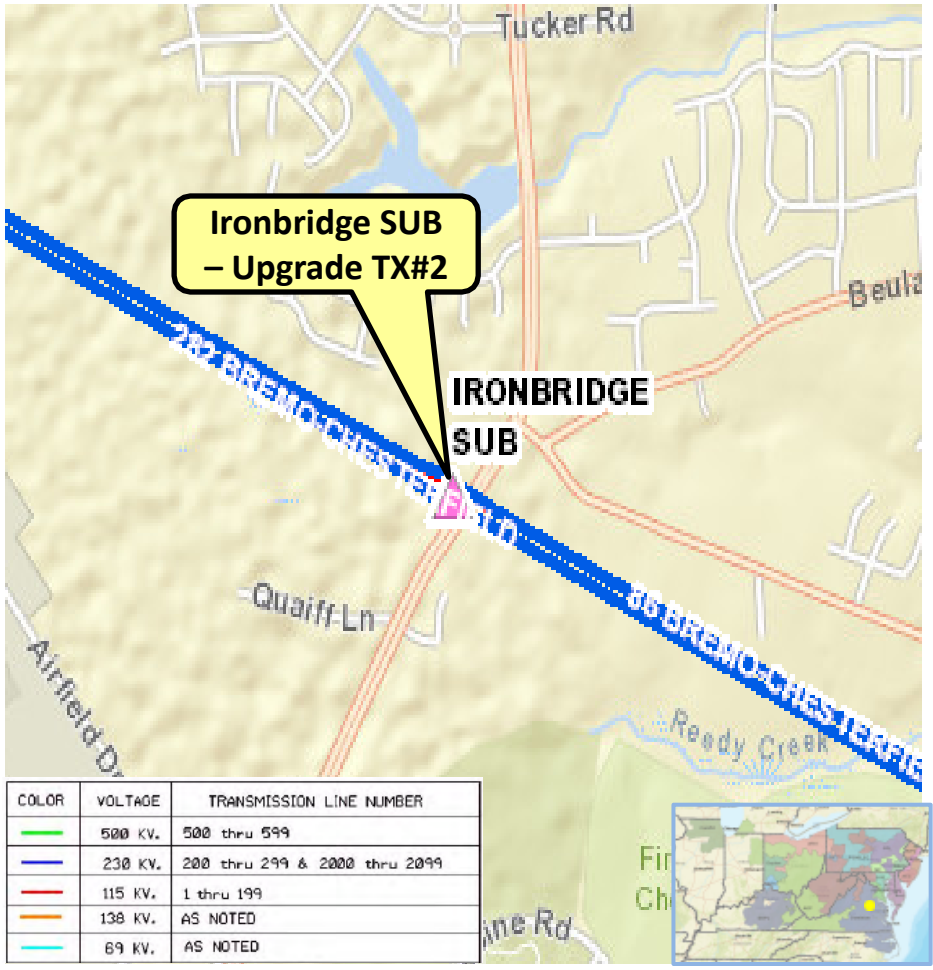
Project Driver: Customer Service

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 Distribution has submitted a DP Request to upgrade TX #2 at Ironbridge Substation. The driver for the upgrade is the forecasted load growth in the area. The total station load will exceed 100 MVA.



Initial In-Service Load	Projected 2033 Load
Summer: 126.4 MW Winter: 145.0 MW	Summer: 143.6 MW Winter: 164.0 MW

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

Need Number: DOM-2023-0044

Process Stage: Need Meeting 08/08/2023

Project Driver: Equipment Material Condition, Performance Risk

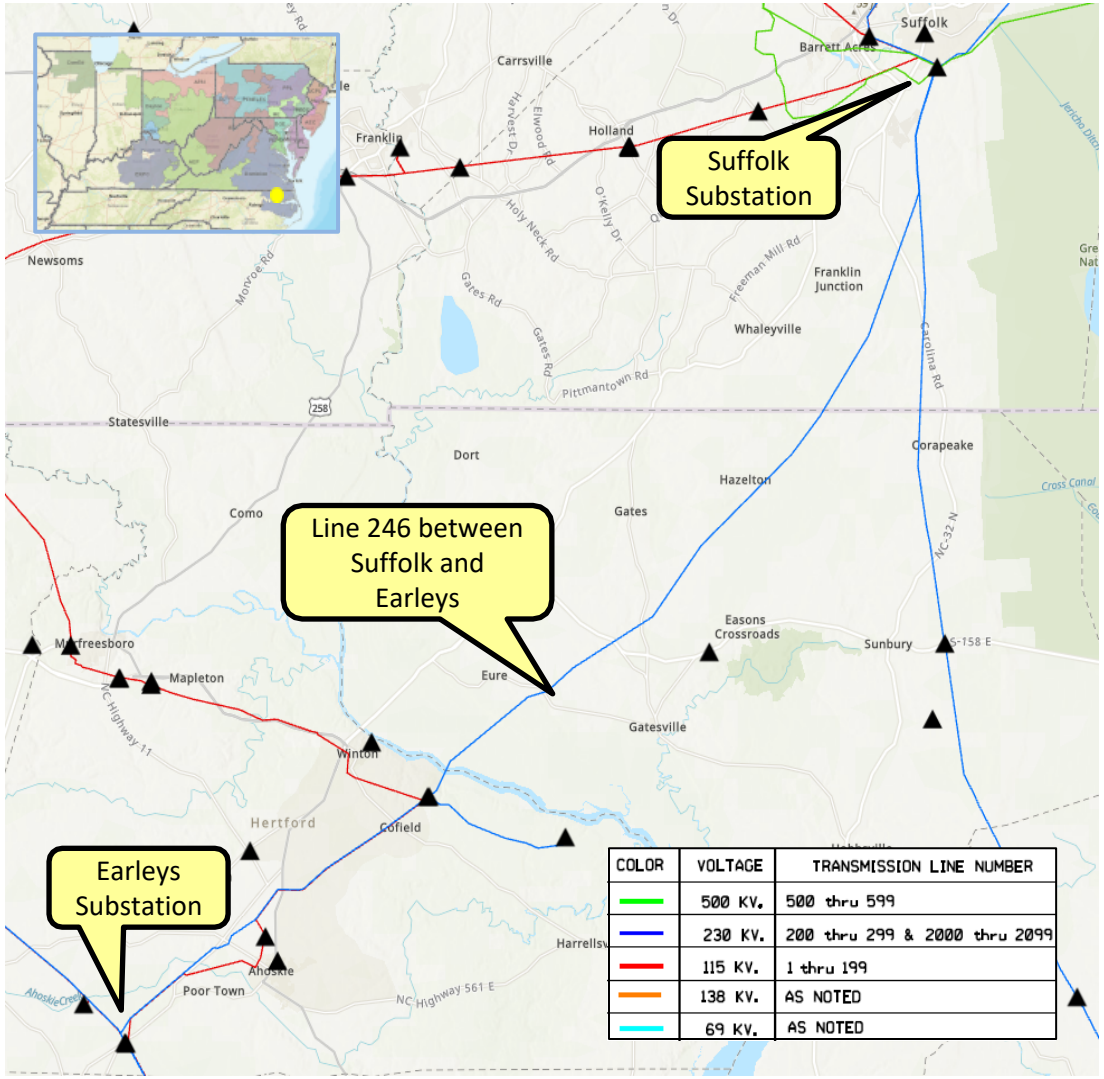
Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2022.

Problem Statement:

Dominion Energy has identified a need to replace approximately 44.3 miles of 230kV Line #246 (Suffolk to Earleys) based on the Company's End of Life criteria.

- Line #246 was constructed on primarily wood H-frame structures in 1971, with many in need of replacement due to deterioration.
- Industry guidelines indicate equipment life for steel structures is 40-60 years, wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.
- Line #246 provides service to Nucor substation with approximately 36.7MW of load



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0045

Process Stage: Need Meeting 08/08/2023

Project Driver: Customer Service

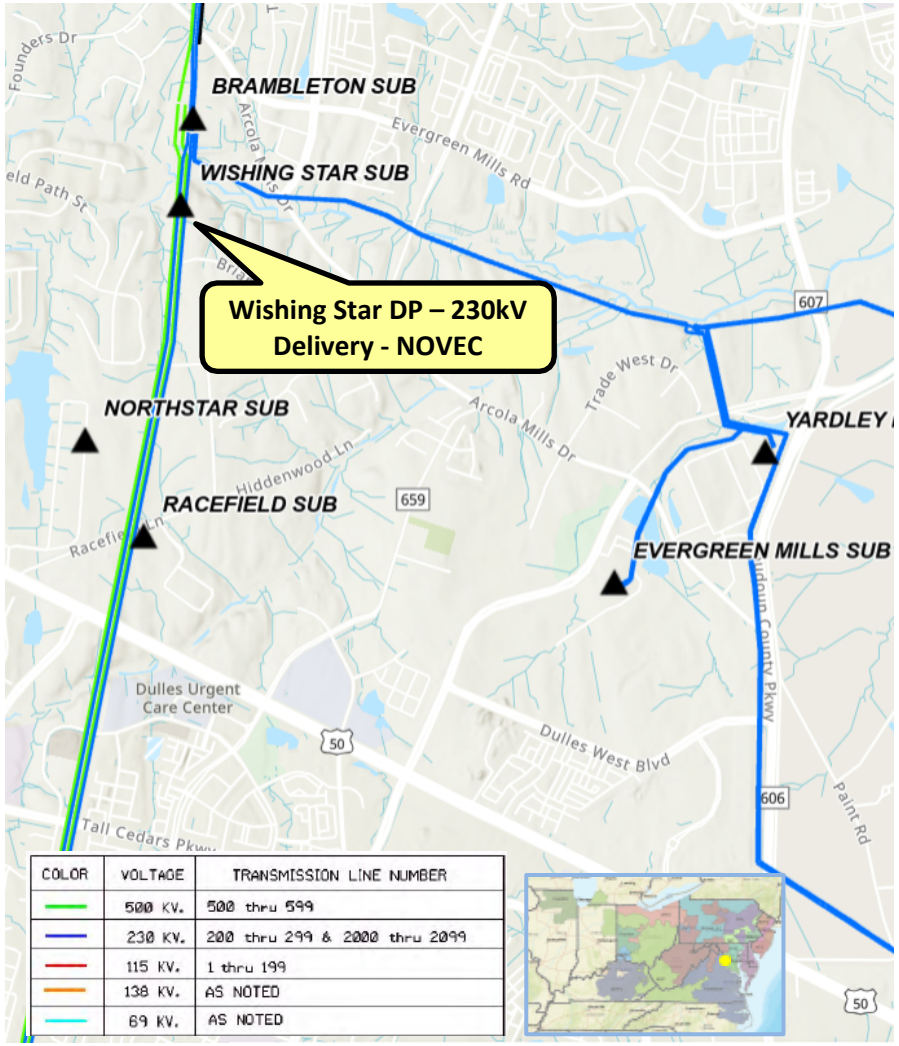
Specific Assumption References:

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

Problem Statement:

NOVEC has submitted a DP Request for a Delivery Point (Wishing Star DP) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 12/1/2026.

Initial In-Service Load	Projected 2028 Load
Summer: 16.0 MW Winter: 1.0 MW	Summer: 57.0 MW Winter: 30.0 MW



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0046

Process Stage: Need Meeting 08/08/2023

Project Driver: Customer Service

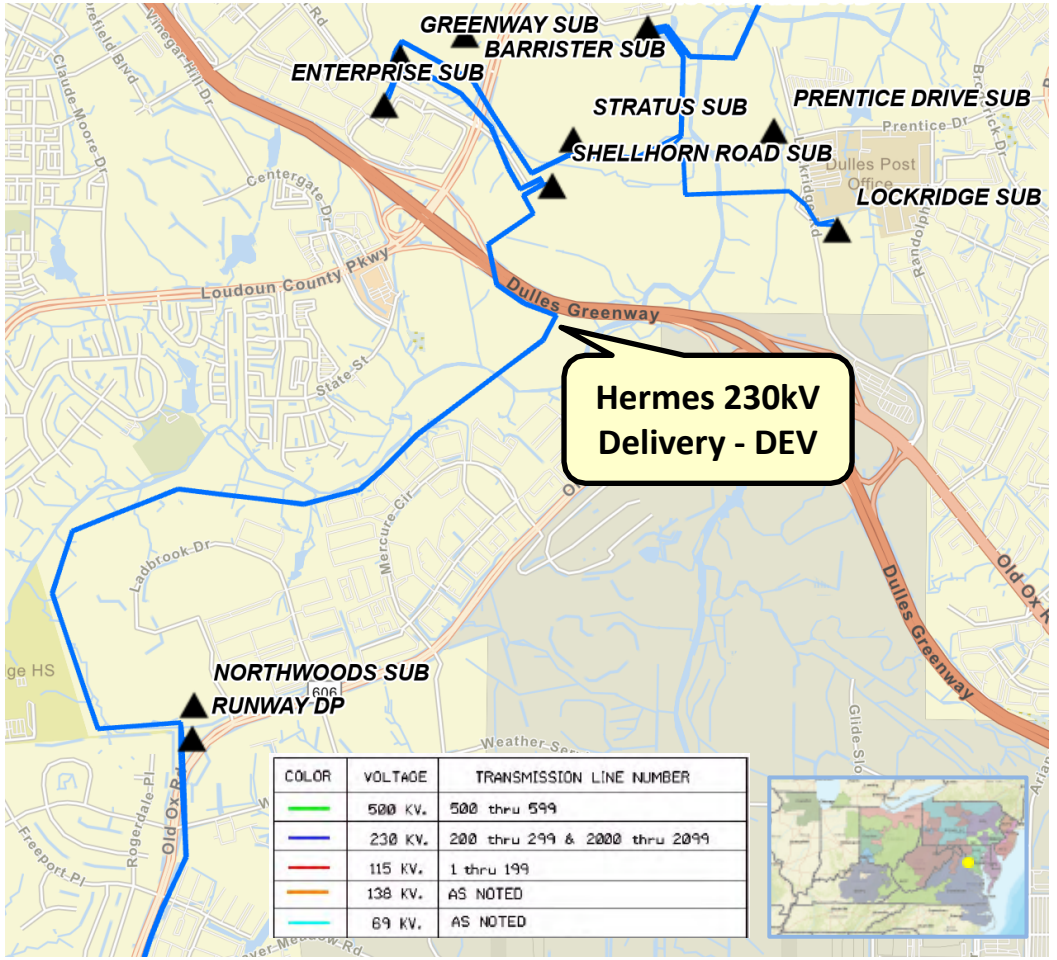
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Hermes) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 6/1/2025.

Initial In-Service Load	Projected 2028 Load
Summer: 50.0 MW Winter: 0.0 MW	Summer: 162.5 MW Winter: 140.6 MW



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 Customer Load Request

Need Number: DOM-2022-0003

Process Stage: Solutions Meeting 08/08/2023

Previously Presented: Need Meeting 06/07/2022

Project Driver: Customer Service

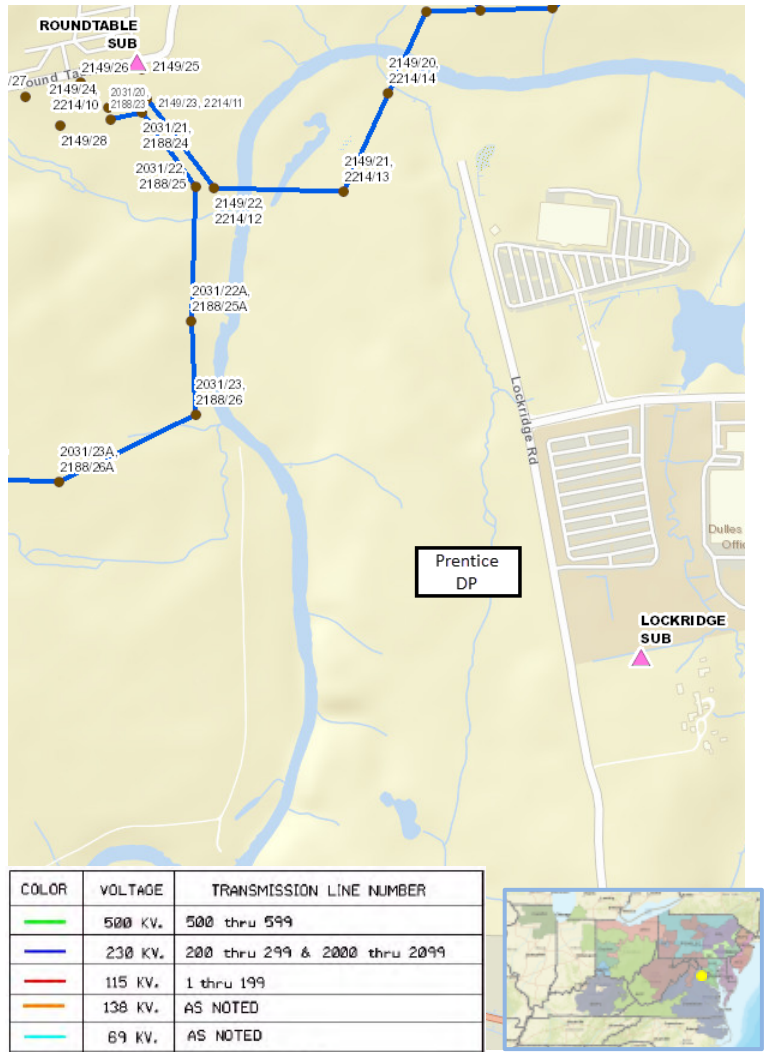
Specific Assumption References:

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 (Prentice) in Loudoun County with a total load in excess of 100MW. Requested in-service date is 12/30/2024.

Initial In-Service Load	Projected 2028 Load
Summer: 5.0 MW Winter: 0.0 MW	Summer: 160.0 MW Winter: 145.7 MW



Dominion Transmission Zone: Supplemental Prentice Drive 230kV Delivery - DEV

Need Number: DOM-2022-0003

Process Stage: Solutions Meeting 08/08/2023

Proposed Solution:

Interconnect the new substation by cutting and extending Line #2188 (Lockridge – Shellhorn) to the proposed Prentice Drive Substation. Lines to terminate in a 230kV six-breaker ring arrangement.

Estimated Project Cost: $20.0 M

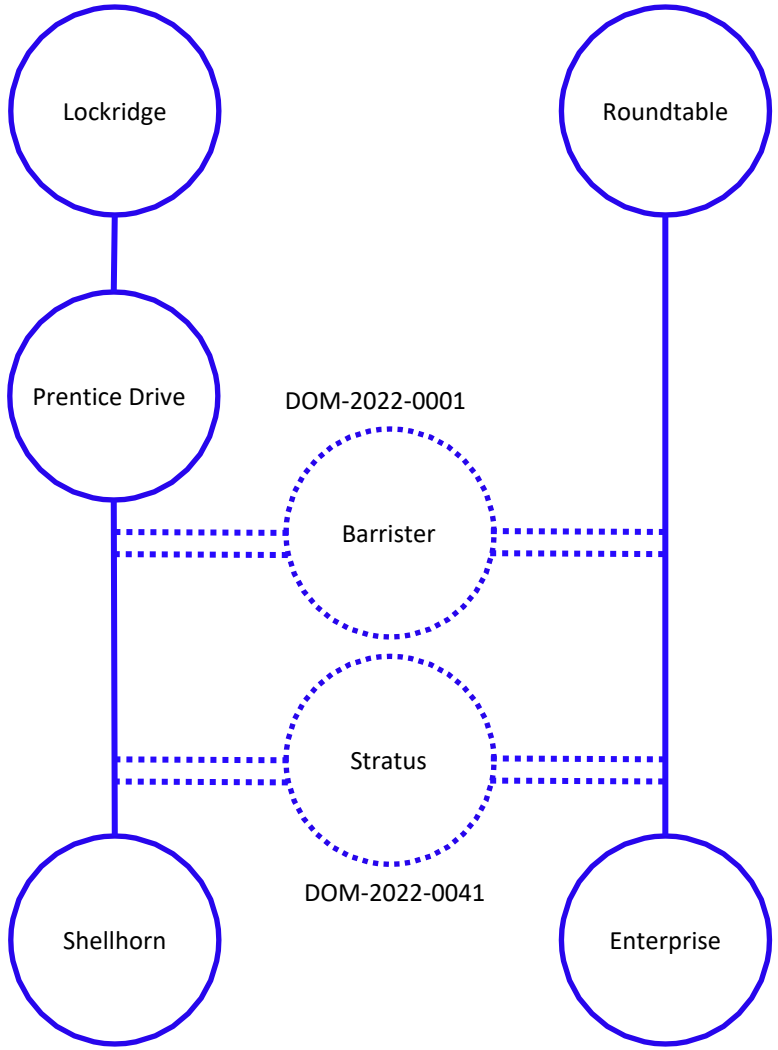
Alternatives Considered:

None. Tapping closest source.

Projected In-service Date: 12/30/2024

Project Status: Engineering

Model: 2027 RTEP



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2022-0056

Process Stage: Solutions Meeting 08/08/2023

Previously Presented: Need Meeting 10/04/2022

Project Driver: Customer Service

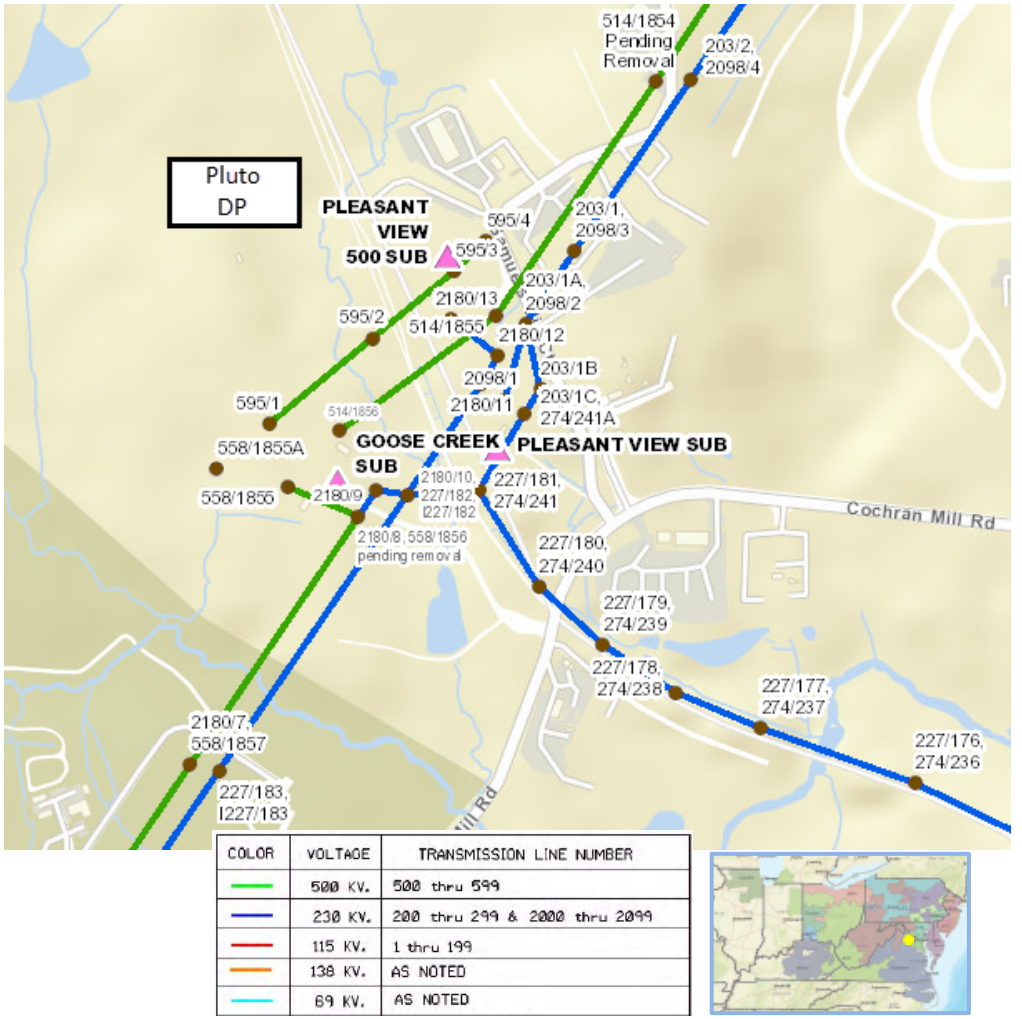
Specific Assumption References:

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 06/1/2026.

Initial In-Service Load	Projected 2028 Load
Summer: 3.0 MW Winter: 0.0 MW	Summer: 110.0 MW Winter: 72.0 MW



Dominion Transmission Zone: Supplemental Pluto 230kV Delivery - DEV

Need Number: DOM-2022-0056

Process Stage: Solutions Meeting 08/08/2023

Proposed Solution:

Interconnect the new substation by cutting and extending Line #2180 (Pleasant View – Belmont) to the proposed Pluto Substation. Lines to terminate in a 230kV four-breaker ring arrangement.

Estimated Project Cost: $20.0 M

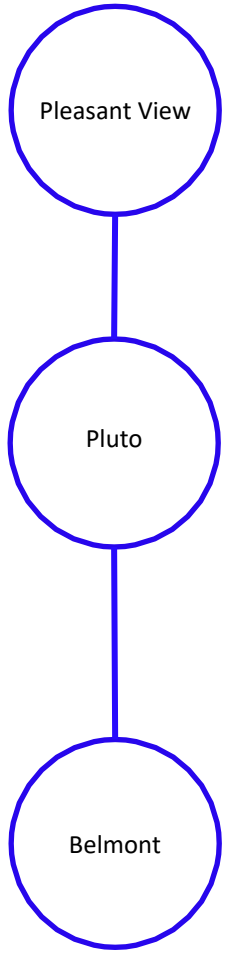
Alternatives Considered:

None. Tapping closest source.

Projected In-service Date: 06/01/2026

Project Status: Engineering

Model: 2027 RTEP



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2023-0020

Process Stage: Solution Meeting 08/08/2023

Previously Presented: Need Meeting 03/07/2023

Project Driver: Customer Service

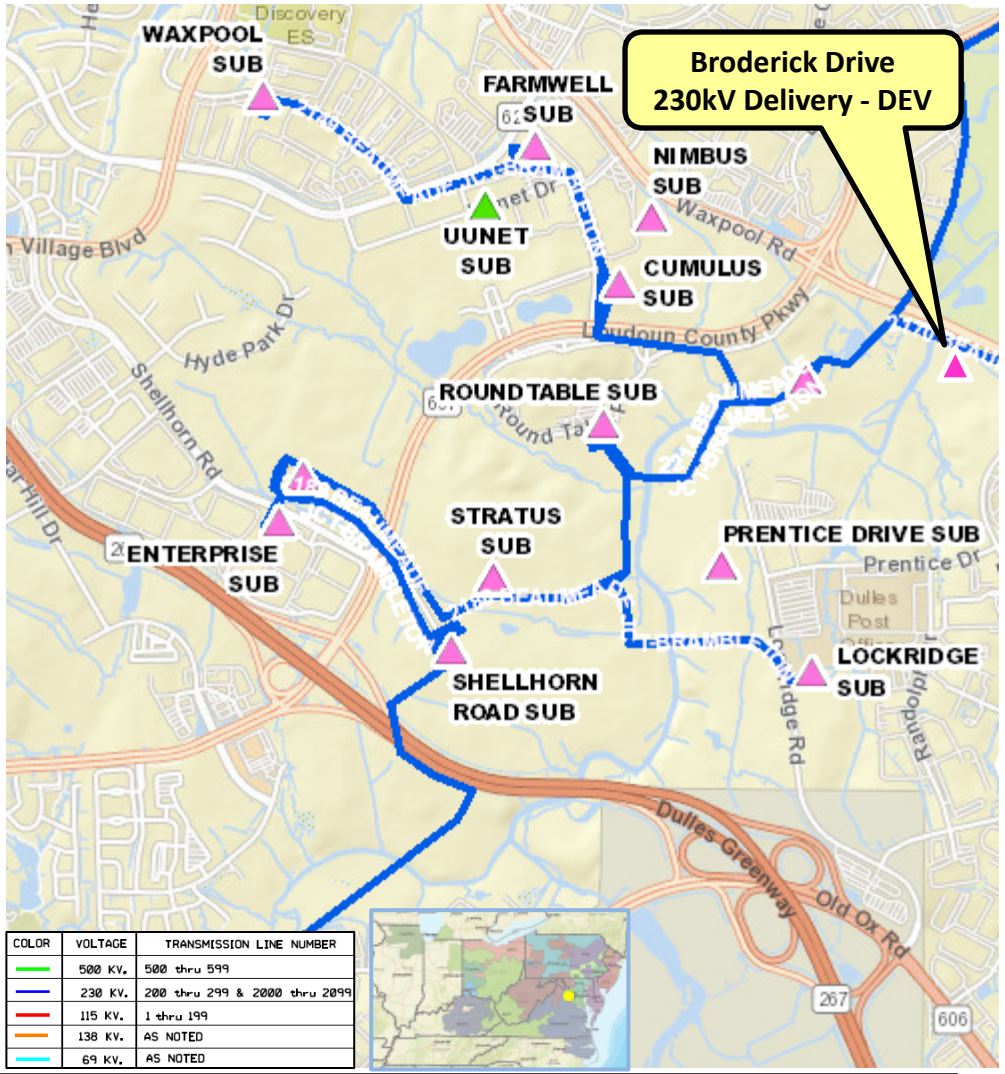
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a DP Request for a new substation (Broderick Drive) to serve a data center campus in Loudoun County with a total load in excess of 100 MW. Requested in-service date is 03/01/2026.

Initial In-Service Load	Projected 2028 Load
Summer: 8.0 MW Winter: 0.0 MW	Summer: 112.0 MW Winter: 72.0 MW



Dominion Transmission Zone: Supplemental Broderick Drive 230kV Delivery - DEV

Need Number: DOM-2023-0020

Process Stage: Solutions Meeting 08/08/2023

Proposed Solution:
Interconnect the new substation by cutting and extending Line #2170 (Buttermilk-Pacific) to the proposed Broderick Drive Substation. Lines to terminate in a 230kV four-breaker ring arrangement.

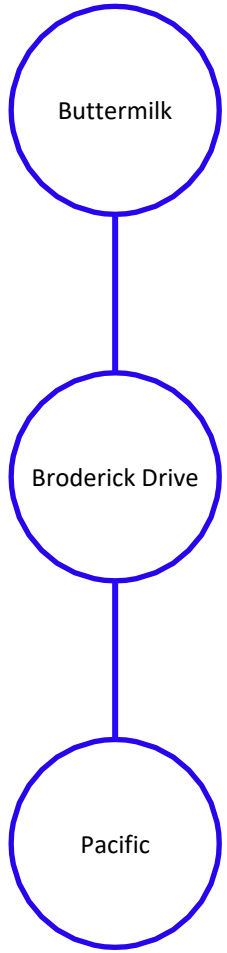
Estimated Project Cost: $24.5 M

Alternatives Considered:
No feasible alternatives

Projected In-service Date: 03/01/2026

Project Status: Engineering

Model: 2027 RTEP



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

Need Number: DOM-2021-0047

Process Stage: Solution Meeting 08/08/2023

Previously Presented: Solution Meeting 08/09/2022, Need Meeting 06/08/2021

Project Driver: Equipment Material Condition, Performance and Risk

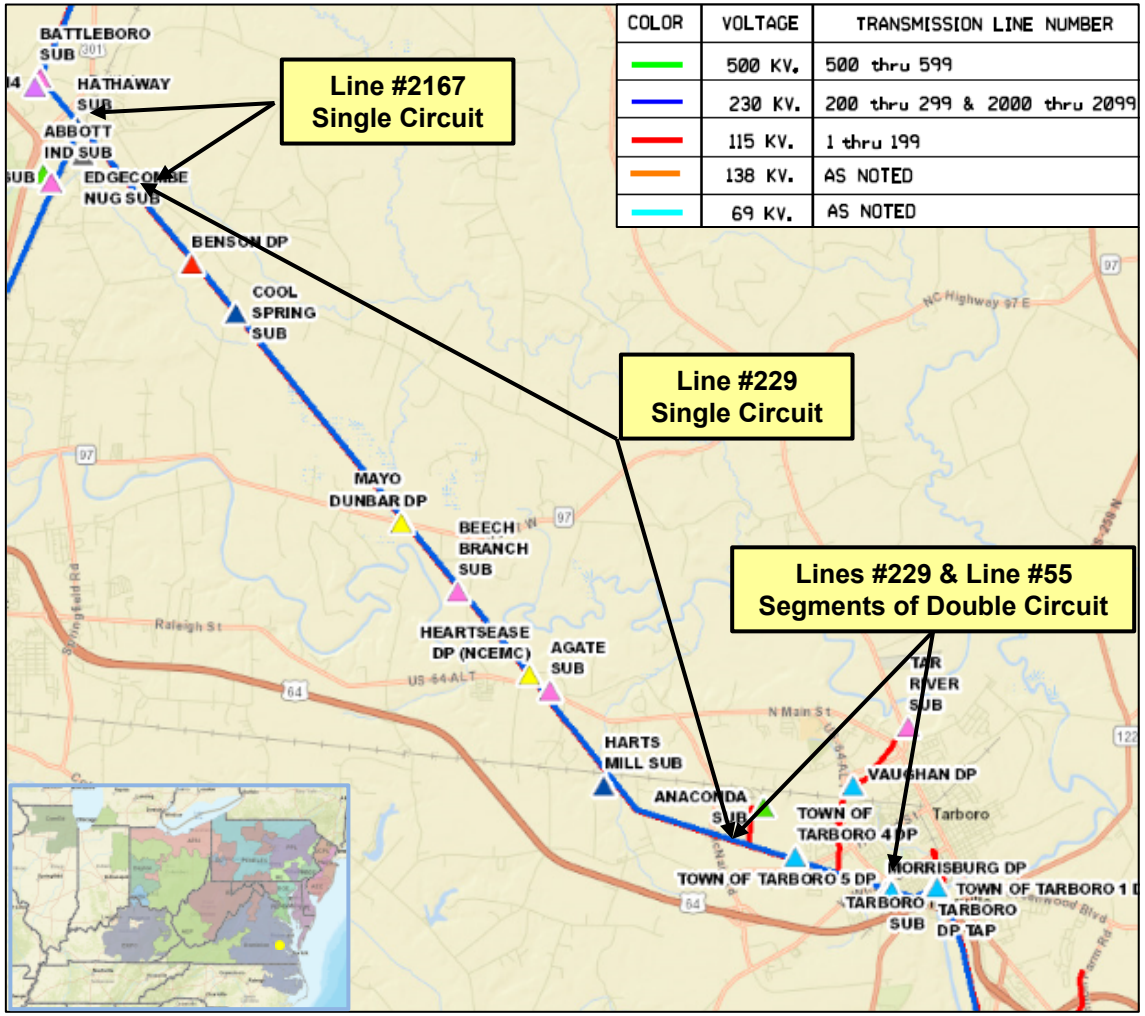
Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2020.

Problem Statement:

Dominion Energy has identified a need to replace approximately 0.73 miles of 230kV Line #2167 (Hathaway to Edgecombe NUG), and 16.9 miles of 230kV Line #229 (Tarboro to Edgecombe NUG) which includes 2.1-mile segments of double circuit with Line #55 (Tarboro to Anaconda) and 0.95 miles single circuit segments of Line #55 based on the Company's End of Life criteria.

- Double-circuit is on steel towers and single-circuit is on 2-pole wood H-frame structures all dating back to 1967. Conductor is ACSR.
- A field-condition assessment indicated woodpecker damage and broken insulators.
- Industry guidelines indicate equipment life for steel structures is 40-60 years, wood structures 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years.



Dominion Transmission Zone: Supplemental Line #229 and Line #55 Partial Rebuild

Need Number: DOM-2021-0047

Process Stage: Solutions Meeting 08/08/2023 - update

Proposed Solution:

Rebuild ~~entire~~ Line #2167 Edgecombe NUG Tap – Hathaway (approximately ~~0.73~~ 0.4 miles) to current 230kV standards with appropriate structures. The minimum normal summer conductor rating of this line will be 1573 MVA.

Rebuild ~~entire~~ Line #229 Edgecombe NUG Tap – Tarboro (approximately ~~16.9~~ 16.6 miles) to current 230kV standards with appropriate structures. The minimum normal summer conductor rating of the line will be 1573 MVA.

Line #2167 rebuilt section will be connected to Line #229 at the Edgecombe NUG Tap and will be renumbered to Line #229. Line #229 becomes Tarboro to Hathaway and the double-circuit line from Edgecombe NUG Tap to Edgecombe NUG will be disconnected and made idle.

Rebuild approximately 3 miles from Tarboro to Str 55/133 of Line #55 Tarboro – Harts Mill to current 115kV standards with appropriate structures. The minimum normal summer conductor rating of the line will be 393 MVA.

Terminal equipment will be upgraded as necessary.

Estimated Project Cost: $ ~~40~~ 43M

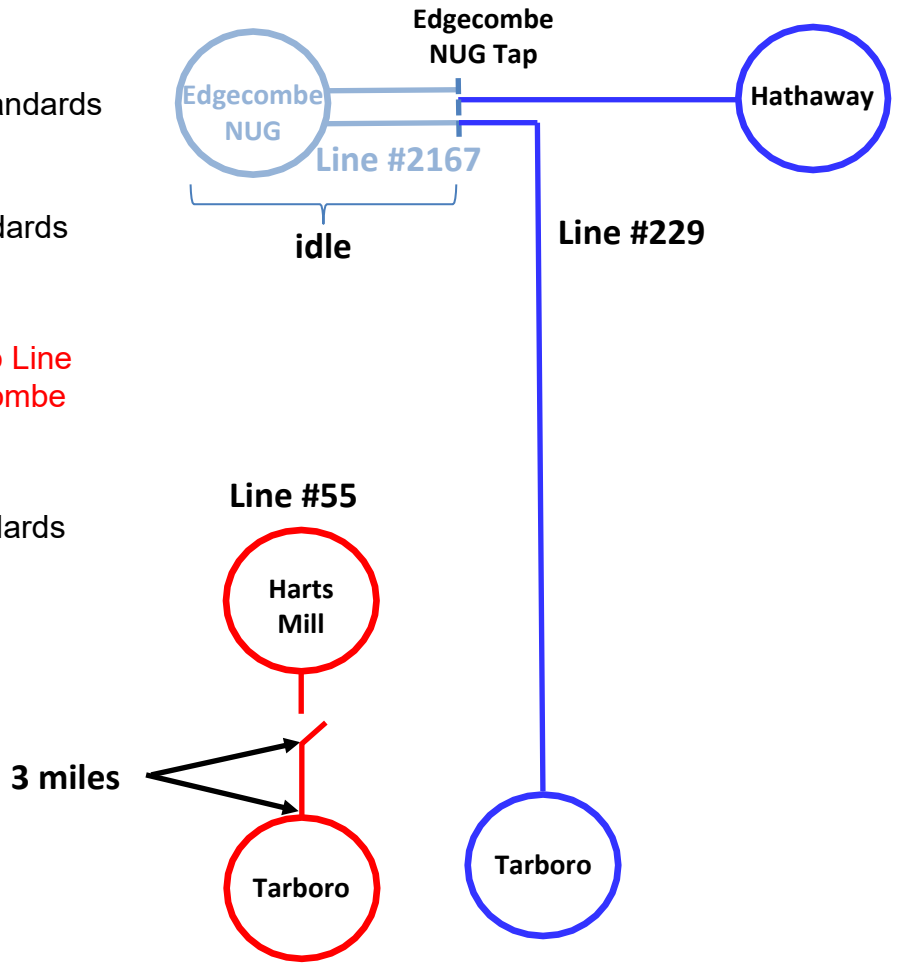
Alternatives Considered:

No feasible alternatives

Project Target In-service Date: 12/31/2023

Project Status: ~~Conceptual~~ Construction

Model: 2025 RTEP



Dominion Transmission Zone: Supplemental Edgecombe NUG Sub – 230kV Delivery- DEV

Need Number: DOM-2022-0049 - cancelled

Process Stage: Cancellation Meeting 08/08/2023

Need Meeting 08/09/2022, Solutions Meeting 09/06/2022

Project Driver: Customer Service

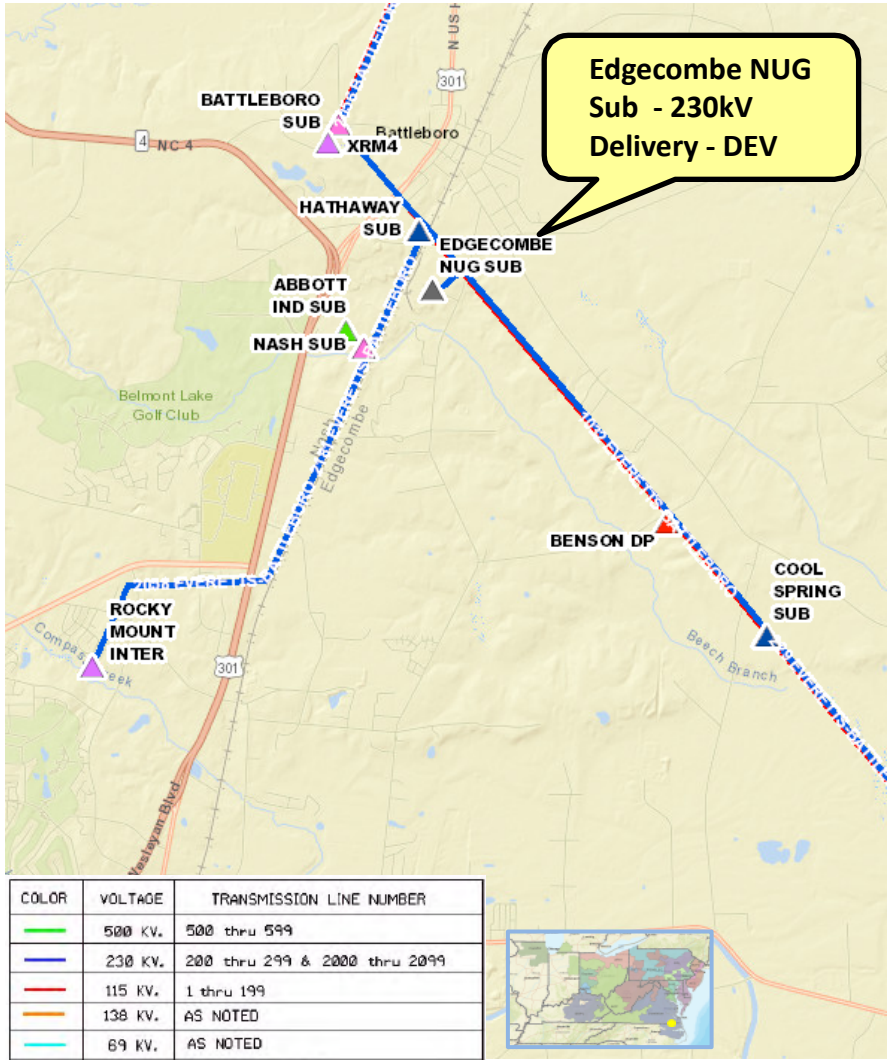
Specific Assumption References:

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

Problem Statement:

DEV Distribution has submitted a delivery point request to serve a crypto mining customer in Battleboro, NC. The total load is less than 100 MW. The customer requests service by December 30, 2022.

Initial In-Service Load	Projected 2027 Load
Winter: 95.0 MW	Summer: 95.0 MW



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

07/28/2023 – V1 – Original version posted to pjm.com