Dominion Supplemental Projects

Transmission Expansion Advisory Committee
August 10, 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

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

Need Number: DOM-2021-0058

Process Stage: Need Meeting 8/10/2021

Project Driver: Equipment Material Condition, Performance and Risk

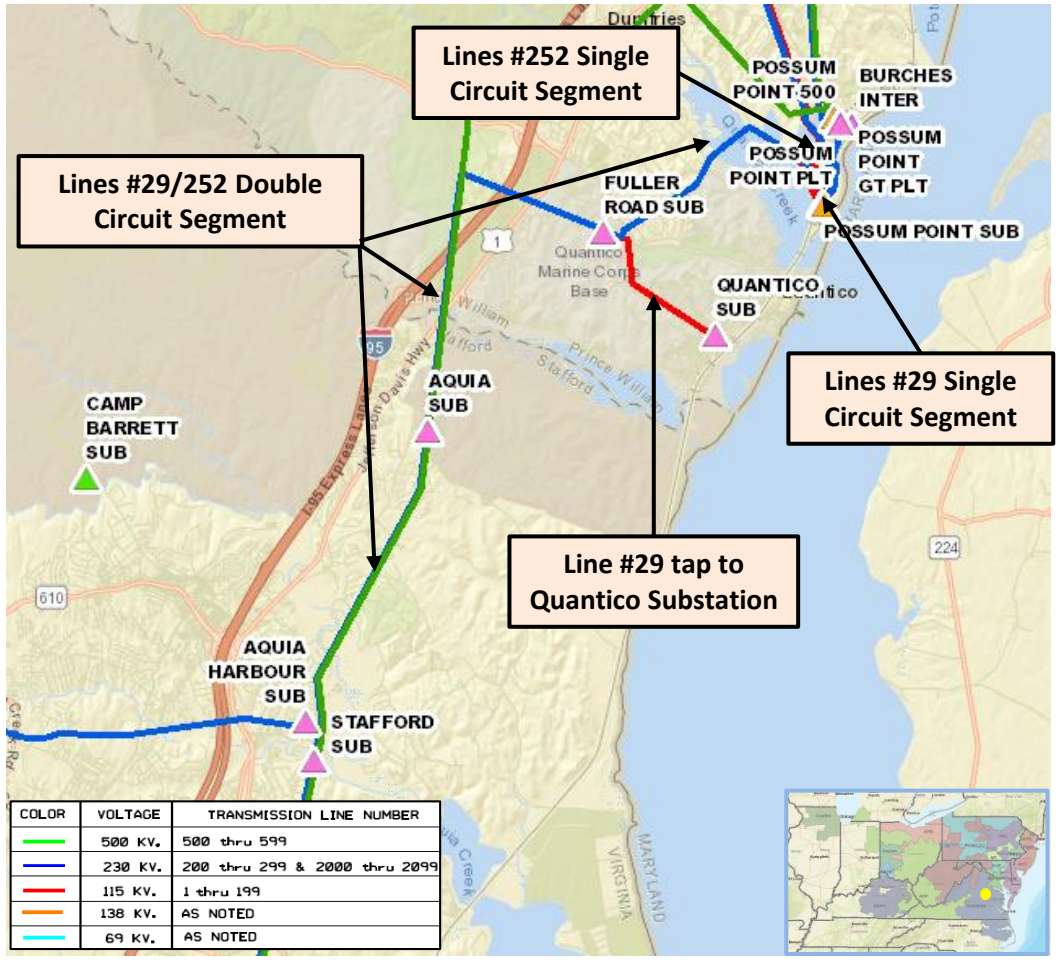
Specific Assumption References:

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

Problem Statement:

Dominion Energy has identified the need to rebuild approximately 12.0 miles of 115kV Line #29 and 230kV Line #252 between Aquia Harbor to Possum Point and the approximately 1.7 miles of 115kV tap line to Quantico Substation based on the Company's End of Life Criteria.

- Lines #29 and #252 were mostly constructed on double circuit CORTEN steel structures in 1978. The 115kV tap line to Quantico Substation was constructed on wood structures in 1978.
- A recent field inspection indicated continued degradation of structures where steel members are delaminating and cracking, and wood structures are showing woodpecker damage.
- Industry guidelines indicate equipment life for wood structures is 35-55 years, conductor and connectors are 40-60 years, and porcelain insulators are 50 years. A 50-year cycle for CORTEN steel structures is often cited.
- Line #29 is the only feed to the customers at Quantico 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

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2020-0040 (Update)

Process Stage: Solutions Meeting 08/10/2021

Previously Presented: Solutions Meeting 05/11/2021

Project Driver: Customer Service

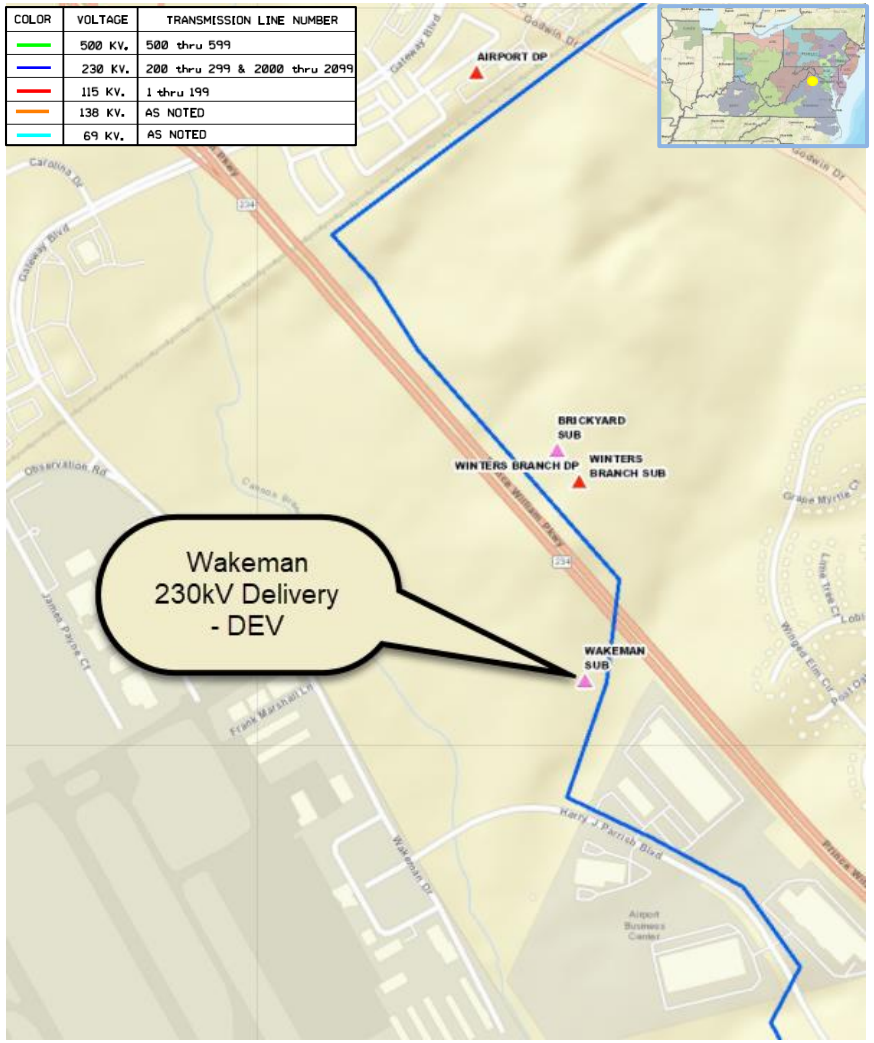
Specific Assumption References:

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 (Wakeman) to accommodate a new datacenter campus in Prince William County with a total load in excess of 100MW by 2024. Requested in-service date is 12/01/2022.

Initial In-Service Load	Projected 2026 Load
Summer: 5.0 MW	Summer: 196.25 MW



Dominion Transmission Zone: Supplemental Wakeman 230kV Delivery - DEV

Need Number: DOM-2020-0040 (Update)

Process Stage: Solutions Meeting 08/10/2021

Proposed Solution to Interconnect Customer Load:

Interconnect the new substation by cutting and extending ~~Line #2132 (Cloverhill-Winters Branch) and~~ Line #2148 (Cannon Branch-Cloverhill) to the proposed Wakeman Substation. Lines to terminate in a four-breaker ring with the station being set up for an ultimate six-breaker ring arrangement.

Proposed Solution to DNH 300MW N-1-1 Load Drop Violation:

Extend a new 230kV Line 0.25 miles between Winters Branch and Wakeman. Add a 230kV breaker at Winters Branch and Wakeman substations to terminate the new 230kV line.

Estimated Project Cost: ~~$11.0 M~~ $10.6 M (Total)

Wakeman Substation - $9.0 M

DNH 230kV line extension - $1.0 M

DNH Substation expansion - $0.6 M

Alternatives Considered:

No feasible alternatives

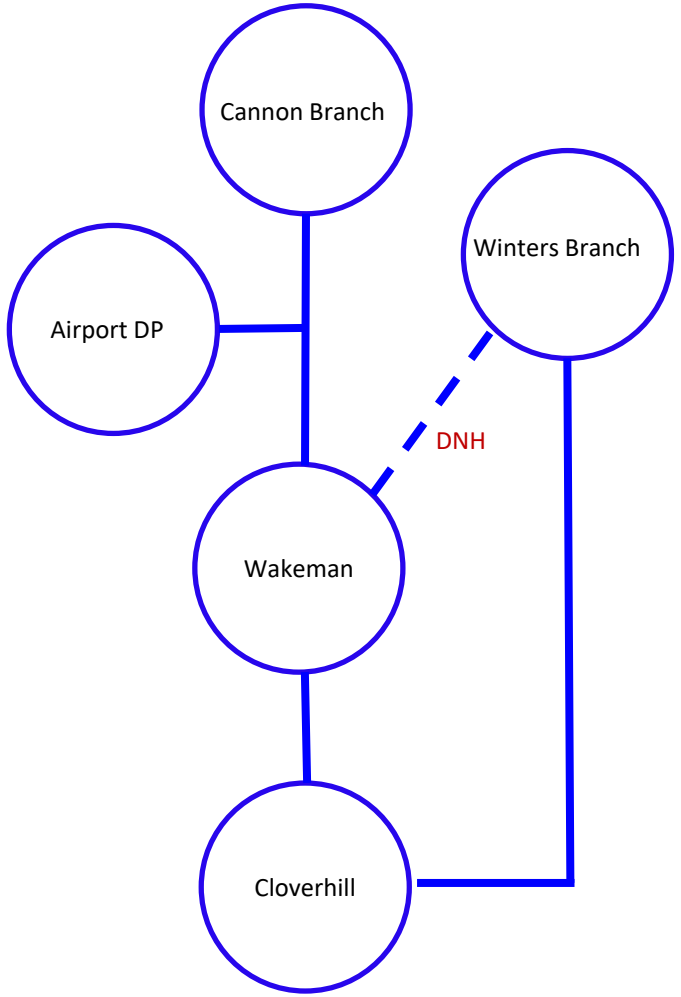
Projected In-service Date:

Customer Service - 12/01/2022

DNH Solution - 6/15/2026

Project Status: Engineering

Model: 2025 RTEP



Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0048

Process Stage: Solutions Meeting 08/10/2021
Previously Presented: Need Meeting 07/13/2021
Project Driver: Customer Service

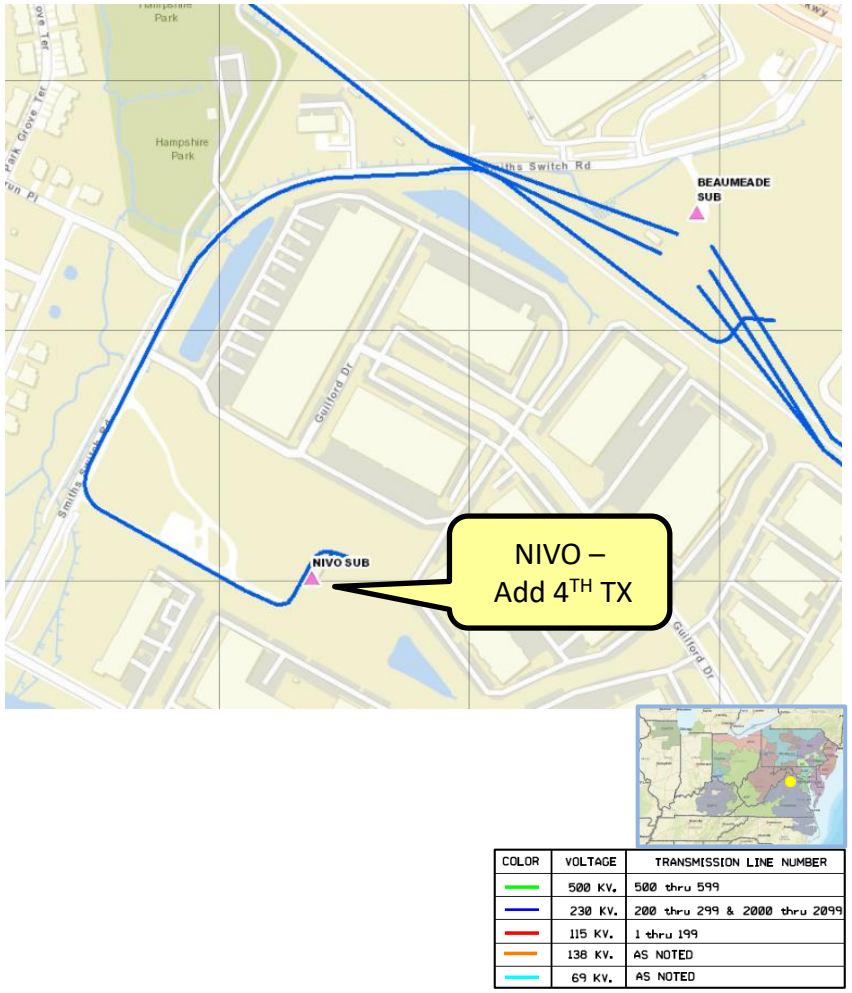
Specific Assumption References:

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 add the 4th distribution transformer at NIVO Substation in Loudoun County. The new transformer is being driven by continued load growth in the area.

Requested in-service date is 09/01/2022.



Initial In-Service Load	Projected 2026 Load
Summer: 193.0 MW	Summer: 158.0 MW

Dominion Transmission Zone: Supplemental
NIVO - Add 4th TX - DEV

Need Number: DOM-2021-0048

Process Stage: Solutions Meeting 08/10/2021

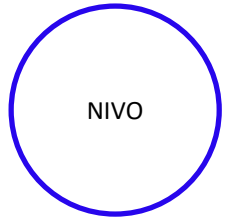
Proposed Solution:

- Expand the substation to include a 4-breaker 230kV ring bus arrangement to comply with the Company's Facility Interconnection Requirements (Section 7.2).
- Install a 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, relaying, etc.) to feed the new transformer at NIVO.

Estimated Project Cost: $7.0 M

Alternatives Considered:

No feasible alternatives



Projected In-service Date: 09/01/2022

Project Status: Engineering

Model: 2025 RTEP

Dominion Transmission Zone: Supplemental Customer Load Request

Need Number: DOM-2021-0053

Process Stage: Solutions Meeting 08/10/2021

Previously Presented: Need Meeting 07/13/2021

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 add the 4th distribution transformer at Shellhorn Substation in Loudoun County. The new transformer is being driven by continued load growth in the area. Requested in-service date is 12/15/2022.

Initial In-Service Load	Projected 2026 Load
Summer: 148.0 MW	Summer: 243.0 MW

Dominion Transmission Zone: Supplemental Shellhorn - Add 4th TX - DEV

Need Number: DOM-2021-0053

Process Stage: Solutions Meeting 08/10/2021

Proposed Solution:

Install a 1200 Amp, 50kAIC circuit switcher and associated equipment (bus, relaying, etc.) to feed the new transformer at Shellhorn.

Estimated Project Cost: $0.5 M

Alternatives Considered:

No feasible alternatives

Projected In-service Date: 12/15/2022

Project Status: Engineering

Model: 2025 RTEP

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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

07/30/2021 – V1 – Original version posted to pjm.com.

08/04/2021 – V2 – Removed slides 11 and 12 (Solution for DOM-2021-0025)