SRRTEP Committee Southern
Dominion Supplemental Projects

April 14, 2026

Needs

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

Need Number: DOM-2025-0089

Process Stage: Need Meeting 04/16/2026

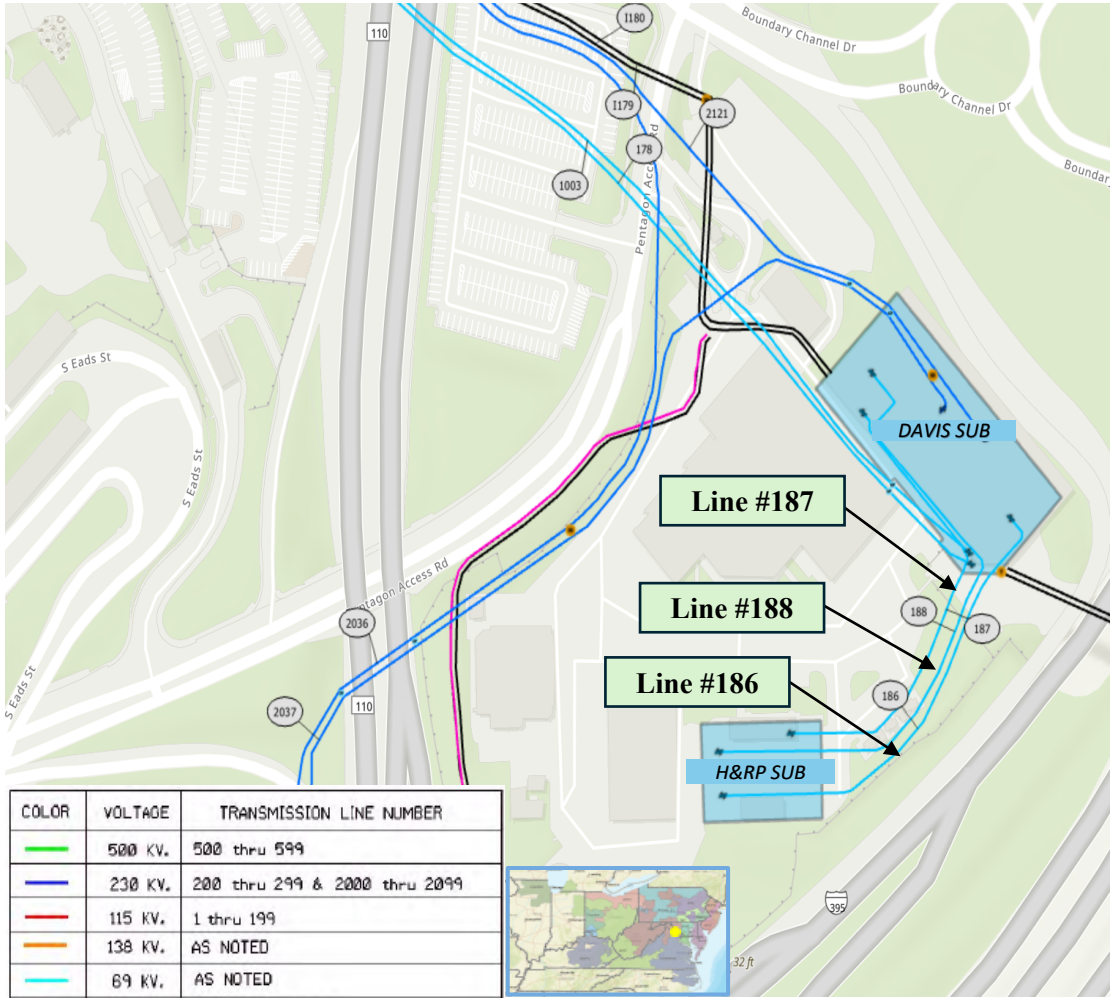
Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2025.

Problem Statement: Dominion Energy (DEV) has identified the need to replace approximately 0.17 mile each of Underground (UG) Lines #186, #187 and #188 (runs between H&RP and Davis) to new 69kV standards based on the Company's End of Life Criteria.

- The existing cable systems consist of 1000 kcmil segmented copper conductors with Ethylene Propylene Rubber (EPR) insulation, rated for a maximum operating temperature of 90°C. These conductors are installed in PVC conduits and have been in service for over 30 years, significantly exceeding the typical industry life expectancy for EPR cable systems.
- The conduit system lacks adequate sealing, resulting in constant water exposure to the EPR cables. The Raychem heat shrink terminations are exhibiting shrink-back on the cable core, exposing underlying layers. These terminations have also exceeded their expected service life.
- Lines #186, #187 and #188 provides service to H&RP and Davis Substations. These lines services a combined load of 30 MW.
- Given the age of the infrastructure, and the condition of the conduit system, the need for replacement of the existing EPR systems is well justified. This project will enhance system reliability, improve operational performance, and support future load growth in the region.



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

Need Number: DOM-2025-0095

Process Stage: Need Meeting 04/16/2026

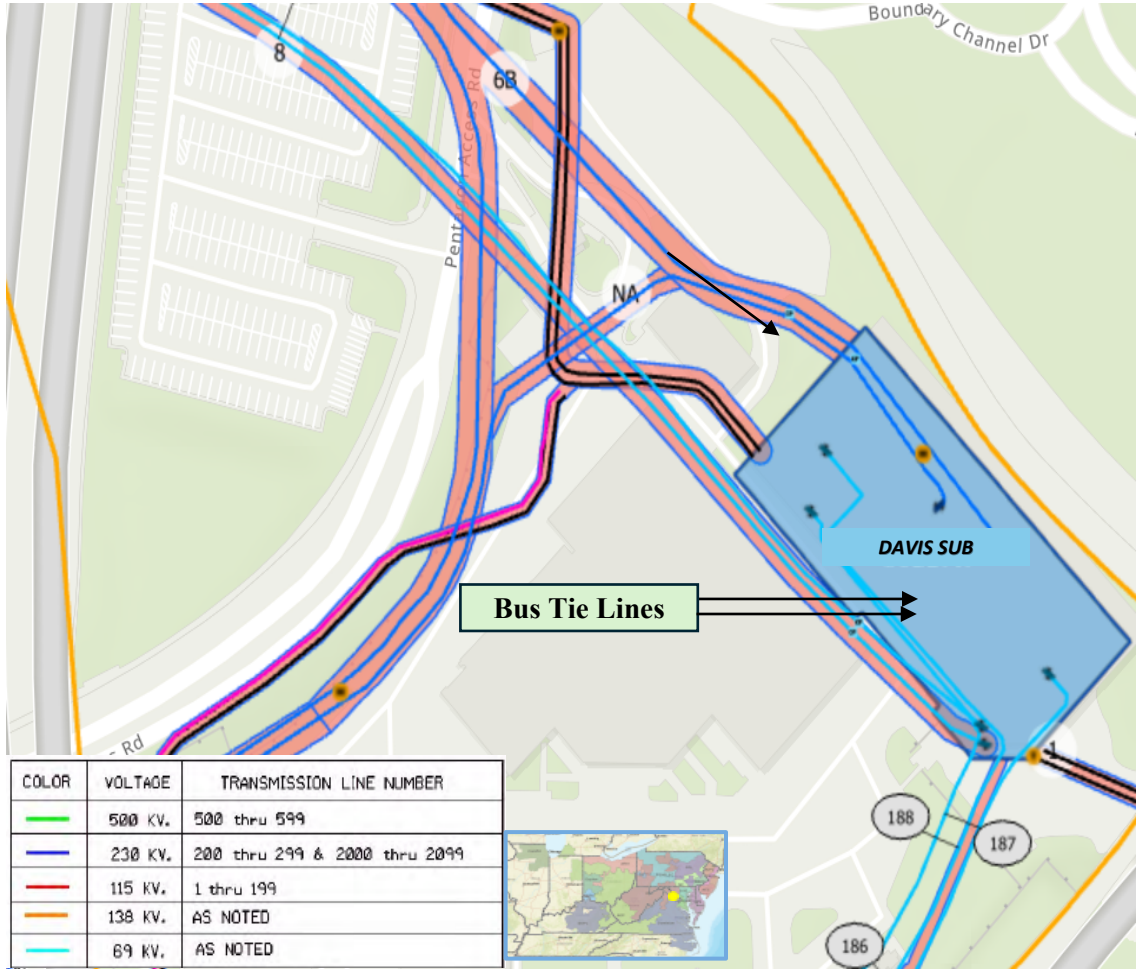
Project Driver: Equipment Material Condition, Performance and Risk

Specific Assumption References:

See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2025.

Problem Statement: Dominion Energy (DEV) has identified the need to replace two underground bus tie circuits within the Davis Substation. Each conductor spans approximately 330 feet, with two conductors per phase, totaling 0.75-mile across all phases. These circuits connect buses #1 to #2 and #3 to #4, serving a critical role in maintaining internal substation connectivity. This replacement effort is being undertaken in accordance with the new 69 kV standards and the Company's End-of-Life criteria.

- The existing cable systems consist of 1000 kcmil segmented copper conductors with Ethylene Propylene Rubber (EPR) insulation, rated for a maximum operating temperature of 90°C. These conductors are installed in PVC conduits and have been in service for over 30 years, significantly exceeding the typical industry life expectancy for EPR cable systems
- Additionally, the conduit system lacks adequate sealing, resulting in constant water exposure to the EPR cables. The Raychem heat shrink terminations are exhibiting shrink-back on the cable core, exposing underlying layers. These terminations have also exceeded their expected service life.
- Given the age of the infrastructure, and the condition of the conduit system, the need for replacement of the existing EPR systems is well justified. This replacement project will ensure continued reliability, improve system performance, and support future load growth in the region.



Dominion Transmission Zone: Supplemental Equipment Material Condition, Performance Risk

Need Number: DOM-2026-0017

Process Stage: Need Meeting 4/16/2026

Project Driver: Equipment Material Condition, Performance Risk

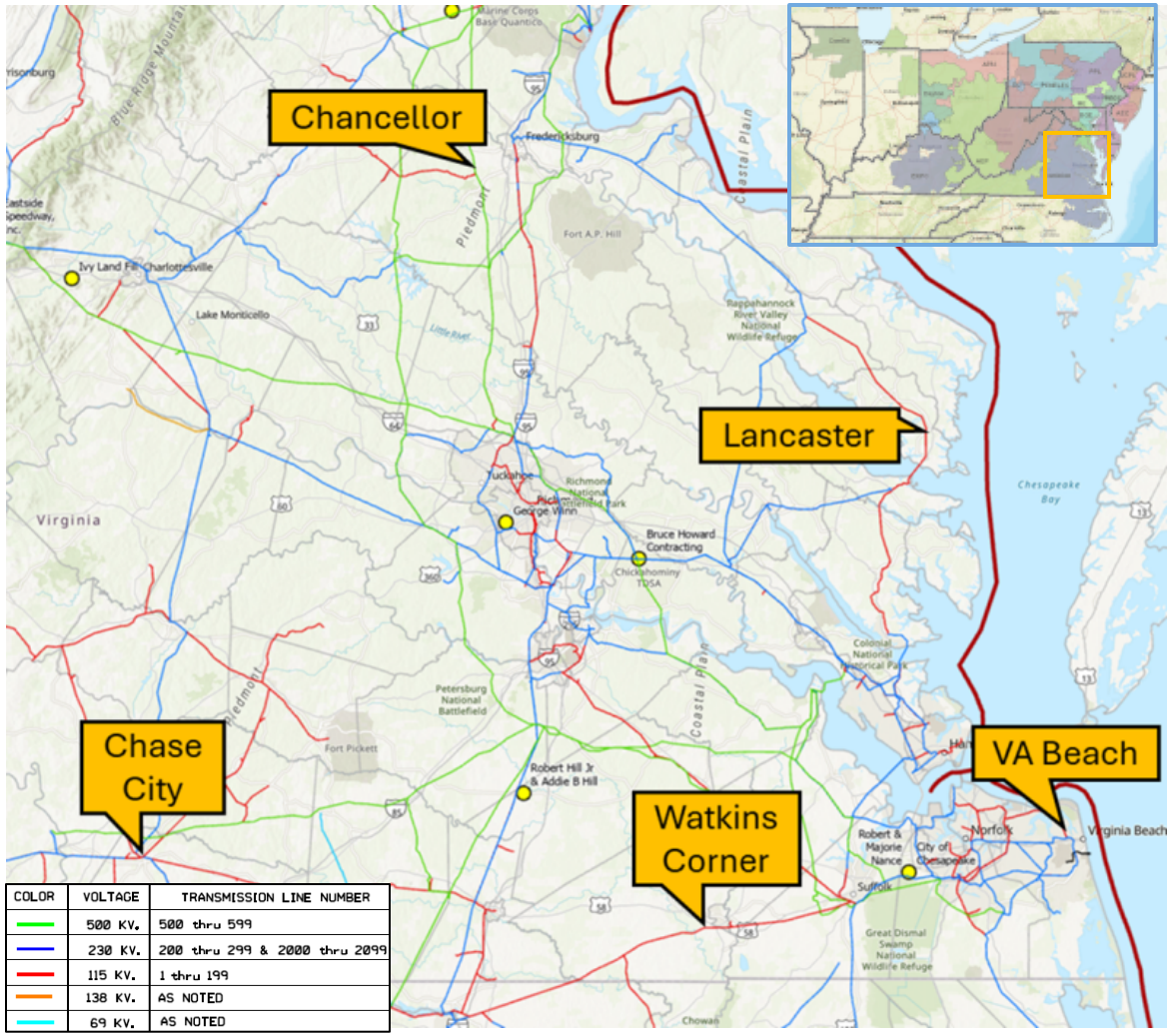
Specific Assumption References: See details on Equipment Material Condition, Performance and Risk in Dominion's Planning Assumptions presented in December 2025.

Problem Statement:

Multiple cap banks have been identified needing replacement within Dominion's transmission system. Field assessments indicate these cap banks are approaching the end of useful service life. These will need to be replaced to avoid future equipment failures which would lead to voltage violations and potential cascading outage scenarios.

Useful lifespan for shunt capacitor banks is generally considered to be 20-25 years in a typical application; however, this is greatly affected by the local network and in-service conditions. The integrity of the dielectric media in high voltage capacitor banks can be degraded over time by factors such as increased duty (time in service and number of on/off cycles), overvoltage transients (110%+ of rated), increasing magnitude of inrush currents, harmonics, etc., all of which we are experiencing. Over time, the accumulated effect of these phenomenon leads to increased stress and accelerated aging of the insulating material inside of a capacitor can, leading to dielectric breakdown and ultimately protection lockouts. Due to the increasing load in Dominion Energy territory, the need for reliable capacitive compensation is more necessary than ever. For this reason, we find it prudent to replace the proposed banks based on a combination of age, expected duty, and effect of an outage on grid reliability.

The 115 kV cap banks needing replacement between 2027 and 2028 are located at Chancellor, Lancaster, Chase City, Watkins Corner, and Virginia Beach substations.



Questions?

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

04/03/2026 – V1 – Original version posted to pjm.com.