PJM Facilities Study Report

For

Network Upgrade N9647

Transition Cycle #1

July 2025

Introduction

This Facilities Study has been prepared in accordance with the PJM Open Access Transmission Tariff and PJM Manuals. The Transmission Owner (TO) is Virginia Electric and Power Company (VEPCO or Dominion).

A. Project Description

The System Impact Study for PJM Interconnection Transition Cycle #1 has identified the need for PJM Network Upgrade N9647. The scope of this Network Upgrade includes the following:

- Install a STATCOM at Fentress

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N9647:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N9647. These facilities shall be designed according to the Transmission Owner's Applicable Technical Requirements and Standards. Once built the Transmission Owner will own, operate, and maintain these facilities.

See Preliminary Scoping Summaries located in the Appendices, Attachment #1.

2. MILESTONE SCHEDULE FOR COMPLETION OF DOMINION WORK

Facilities outlined in this report are estimated to take 44 months to construct, from the time of full execution of the Generation Interconnection Agreement and completion of a construction kickoff call. This schedule may be impacted by the timeline for procurement and installation of long lead items and the ability to obtain outages to construct and test the proposed facilities.

Description	Start month	Finish month
Engineering	1	10
Permitting/Procurement	3	33
Construction	34	44

Due to outage congestion, Network Upgrades and/or internal Dominion projects have been identified as having possible outage conflicts with this network upgrade that may affect the estimated milestones listed above. Additional outage sequencing may be required that includes, but not limited to the following projects:

- Coordinate with other projects at Fentress Substation

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- The preliminary construction schedule is dependent on outage availability.
- See Attachment 1– Preliminary Scoping Summary for additional assumptions

4. LAND REQUIREMENTS

Dominion will be responsible for the following expectations in the area of Real Estate:

- Any additional land needed for Storm Water Management, Landscaping, and Wetlands/Wetlands Mitigation.
- Any other Land/Permitting requirements required by the Network Upgrade

5. ENVIRONMENTAL AND PERMITING

Dominion will be responsible for the following expectations in the area of Environmental and Permitting:

- Assessment of environmental impacts related to the Network Upgrade including:
  - Environmental Impact Study requirements
  - Environmental Permitting
- A stormwater easement and/or specific stormwater design BMP's to allow access to and use of the facilities, including a maintenance agreement for said stormwater facilities.
- Conditional Use Permit for Substation
- Any additional land needed for Storm Water Management, Landscaping, and Wetlands/Wetlands Mitigation
- Any other Permitting requirements required by the Network Upgrade

C. APPENDICES

Attachment #1: Preliminary Scoping Summary – Substation

Attachment #1

Project Number: N9647 – Fentress Substation

Project Description: Add New 300MVAR STATCOM

SUBSTATION SCOPE OF WORK

Date: 7/14/2025

Revision Number: 0

Project Summary

Network upgrade N9647 provides for the addition of 300 MVAR STATCOM at Fentress Substation, in Chesapeake, Virginia.

Assumptions & Clarifications:

1. The scope of work depicted on the drawings assumes that there is no overlap with other designs and construction activities, except if mentioned in this Project Summary.
2. A preliminary general arrangement drawing was not developed as part of the estimate, the physical location of the STATCOM is to be determined.
3. Relay Settings and P&C design will be revised as part of the SPE Scope of Work.

Purchase and install substation material – Network Upgrade:

1. One (1), 230kV, 4000A, 63kAIC, SF-6 circuit breaker
2. One (1), 230kV, 4000A, 3-phase double end break switch
3. Three (3), 230kV, relay accuracy CCVT
4. One (1), 300MVAR STATCOM
5. Station stone as required
6. Station lighting as required
7. Steel structures as required including switch stands, bus supports, and CCVT supports
8. Foundations and steel structures required for the 300MVAR STATCOM.
9. Foundations as required including equipment and bus support stands
10. Conductors, connectors, conduits, control cables, cable trough, and grounding materials as per engineering standards

Purchase and install relay material – Network Upgrade:

1. One (1), 1110 – 24” SEL-587Z/351A transmission bus panel
2. One (1), 4200_W1 – bus differential CT make-up box
3. One (1), 1510 – 24” dual SEL-351-7 transmission breaker with reclosing panel
4. One (1), 4510 – SEL-2411 breaker annunciator
5. One (1), 4526_A – circuit breaker fiber optic make-up box
6. One (1), 4506 – 3-phase CCVT potential make-up box
7. One (1), 5603 – station network panel no. 3