PJM Facilities Study Report

For

Network Upgrade N9379

Transition Cycle #1

June 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 N9379. The scope of this Network Upgrade includes the following:

- Replace existing 230/500 kV Transformer #6 at Midlothian Substation.

The Preliminary Scoping Document located in the Appendices, Attachment #1.

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N9379:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N9379. 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 59 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	45
Construction	47	59

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 projects associated with Midlothian Substation

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

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

The 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 Midlothian

Attachment #1

Project Number: N9379 – Midlothian Substation

Project Description: Replace Transformer No. 6 **SUBSTATION SCOPE OF WORK**

Date: 06/20/2025

Revision Number: 0

Project Summary

Project number N9379 provides for replacement of transformer no. 6 at Midlothian Substation in Chesterfield County, Virginia.

Purchase and install substation material – Network Upgrade:

1. Four (4), 500-230kV, 480MVA, single phase transmission transformer
2. Four (4), 396kV, 318kV MCOV, surge arrester
3. Four (4), 180kV, 144kV MCOV, surge arrester
4. Steel structures as required including switch stands, oil containment, bus supports, and CCVT supports
5. Foundations as required including equipment and bus support stands
6. Conductors, connectors, conduits, control cables, and grounding materials as per engineering standards

Remove Substation Material – Network Upgrade:

1. Conductor, connectors, conduit, control cable, foundations, structures, and grounding Material as per engineering standards

Purchase and install relay material – Network Upgrade:

1. Four (4), SPR Relay/Aux package
2. Four (4), 4510 – SEL-2411 equipment annunciator
3. Four (4), 4501 – voltage reduction master control box
4. Four (4), 4526_C - >=84MVA transformer fiber makeup box