PJM Facilities Study Report

for

Network Upgrade N9115

"Shawville 115 kV

Conductor Replacement"

Revision 0: August 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 Mid-Atlantic Interstate Transmission, LLC ("MAIT").

A. Project Description

The Phase II System Impact Study for PJM Interconnection Transition Cycle #1 has identified the need for PJM Network Upgrade N9115. The scope of this Network Upgrade includes the following:

- Replace substation conductor at the 115 kV tie at Shawville.

Upon completion of the Network Upgrade above, the expected final ratings are expected to be 188/239/263 MVA (SN/SLTE/SLD)

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N9115:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N9115. 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.

1.1 Shawville 115 kV Substation

Replace 115 kV Conductor.

- Below Grade Scope of Work
    - None
- Above Grade Scope of Work
    - Remove existing substation conductor that ties 115 KV Bus 1 to 115 KV Bus 2 along with existing insulators. Replace with 3" aluminum pipe and new insulators to meet ratings of 191.367 MVA.
- Relay & Controls
    - Review and revise relay settings as required.
- Scope of Work Assumptions
    - Assume existing steel structure can accommodate new bus and insulators.
    - Assume bus can be de-energized and isolated for work to be done within Activity Construction date range.
    - Substation conductor sizing and feasibility will need to be confirmed.
- Ancillary Scope of Work
    - Project Management
        - Project management will be required for this asset.
    - Testing & Commissioning
        - Testing and commissioning services as required for new equipment.

2. MILESTONE SCHEDULE FOR COMPLETION OF MAIT WORK

Facilities outlined in this report are estimated to take 14 months to construct, from the time the Generation Interconnection Agreement is fully executed. This schedule is based on the ability to obtain outages to construct and test the proposed facilities.

Description	Start Month	Finish Month
Preliminary Engineering	1	2
Siting, Permits & Real Estate	3	9
Detailed Engineering	3	9
Equipment Delivery	11	11
Construction	12	14
Testing & Commissioning	14	14

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

4.1 Scope Assumptions:

- N/A

4.2 Cost Estimate Assumptions:

- The cost estimates provided for this report were developed as of January 23, 2025, based upon current market conditions. Hence, they are subject to significant changes in the event that project implementation is delayed. Notwithstanding the cost estimates from this report being used in the applicable Interconnection Agreement for the related project, FirstEnergy reserves the right to re-evaluate and provide a more accurate cost estimate during the implementation phase of the project.

4.3 Schedule Assumptions:

- FirstEnergy's ability to support this schedule also depends on the feasibility of taking the required outages to support construction. Outages that are determined to negatively impact system reliability or cause congestion may be delayed or denied, at any time, even if they are submitted on time based on the Outage Submittal Rules in section 4.2.1 of PJM Manual 03. This includes, but is not limited to, outages requested between the months of June and September, as well as January and March, which typically get denied due to summer and winter peak conditions. Therefore, the construction schedule will be adjusted as needed to accommodate any outage restrictions that have been identified by FirstEnergy or the Transmission Provider.

4. LAND REQUIREMENTS

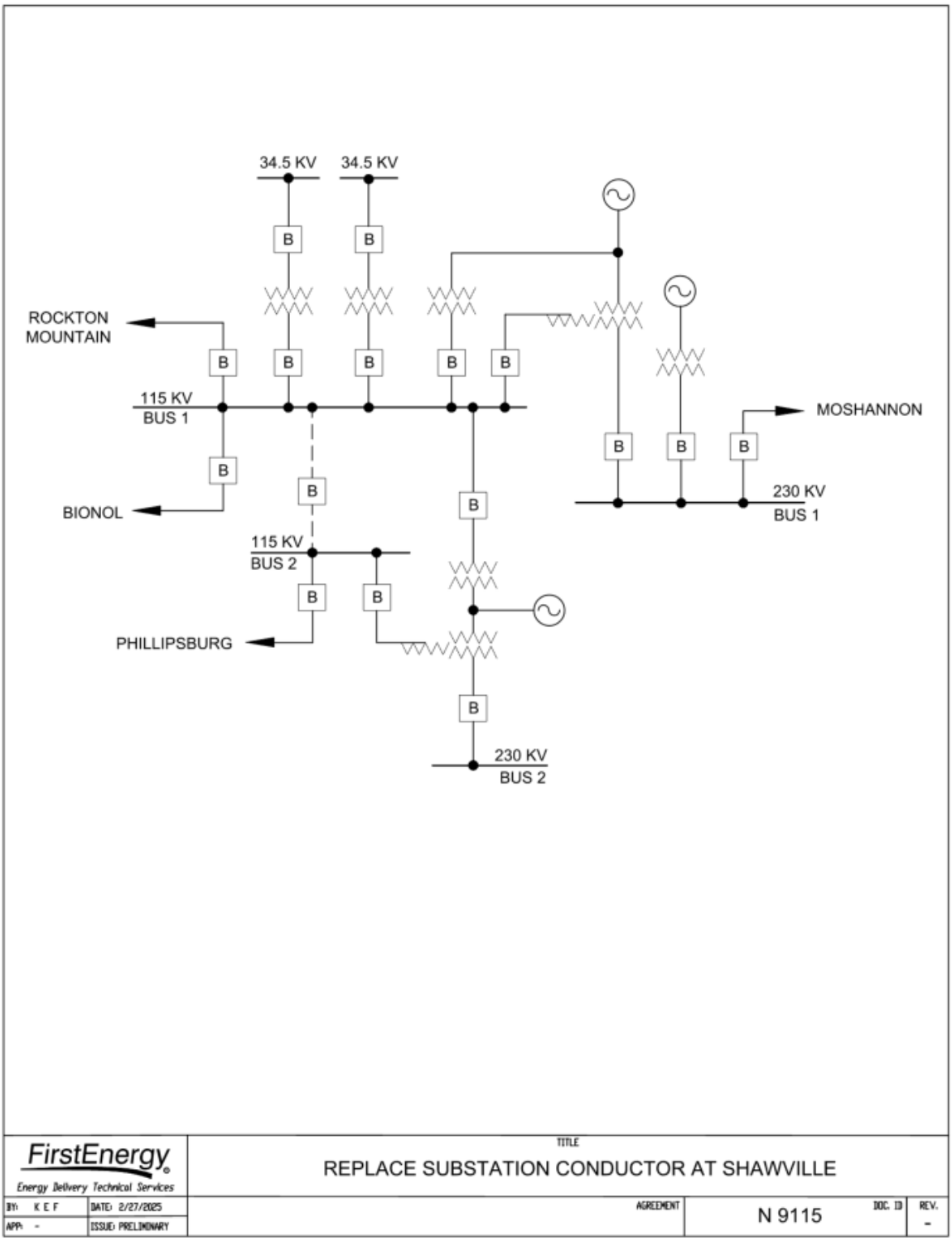
Not Applicable.

5. ENVIRONMENTAL AND PERMITING

Not Applicable.

C. APPENDICES

ATTACHMENT #1: SINGLE LINE DIAGRAM



FirstEnergy Energy Delivery Technical Services	TITLE REPLACE SUBSTATION CONDUCTOR AT SHAWVILLE			
BY: K E F	DATE: 2/27/2025	AGREEMENT	N 9115 DOC. ID	REV. -
APP: -	ISSUE: PRELIMINARY			

ATTACHMENT #2: PROTECTION REQUIREMENTS

Not Applicable.