PJM Facilities Study Report

For

Network Upgrade N9165

Cycle TC1

Revision [0]: [May] [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 ComEd.

A. Project Description

The System Impact Study for PJM Interconnection Cycle TC1 has identified the need for PJM Network Upgrade N9165.0. The scope of this Network Upgrade includes the following:

- Update relay settings at 345kV substation TSS 155 Nelson to support upgrade of 345kV L.15502.
- Replace the cables between the 345kV BT2-3 circuit breaker and the adjacent 345kV MODs on Bus 2 and Bus 3 with cables that have a minimum rating of 1966 MVA SSTE.
- Upgrade TSS 155 Nelson by upgrading existing 345kV L.15502 disconnect switch and 345kV Bus 4 disconnect switches.

The expected final ratings will be the following:

- The limiting summer (35℃/95℉) ratings of L15502 will be SN/SLTE/SSTE/SLD: 1679/2058/2107/2280 MVA. The final ratings will be calculated after construction is completed in the field.
- TSS 155 Nelson terminal & series equipment for 345kV L.15502 will have a minimum rating of 1966 MVA SSTE.

The scope of Network Upgrade is shown in Attachment #1.

B. Transmission Owner Facilities Study Results

1. Detailed scope of work for Network Upgrade N9165.0:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N9165.0. 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.

TSS 155 Nelson

- Replace the existing 2156 kcmil ASCR cables between the 345kV BT2-3 circuit breaker and both the adjacent 345kV MODs on Bus 2 and Bus 3 with cables that have a minimum rating of 1966 MVA SSTE. Replace connectors, ground studs, etc. that connect the cables to the 345kV MODs and breaker to meet this minimum rating of 1966 MVA SSTE.
- Replace existing 345kV L.15502 disconnect switch with one (1) new 345kV Motor Operated Disconnect (MOD). MOD shall have a minimum thermal capability of 1966 MVA SSTE.

- Replace existing 345kV Bus 4 disconnect switches with two (2) new 345kV Motor Operated Disconnects (MODs). MODs shall have a minimum thermal capability of 1966 MVA SSTE.
- All other series and terminal equipment with station conductor meets or exceeds a minimum thermal capability of 1966 MVA SSTE.
- Review and reset relay settings for 345kV L.15502 87L-1 & 87L-2.

TSS 967 Lee Road

- Review and reset relay settings for 345kV L.15502 87L-1 & 87L-2.

2. MILESTONE SCHEDULE FOR COMPLETION OF COMED WORK

Facilities outlined in this report are estimated to take 36 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
Detailed Design/Settings	1	12
Material Procurement	6	27
Construction	27	36

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- This cost estimate assumes that work will be performed during normal weekdays and with no overtime. Transmission line outages for construction have not been identified but generally are available from September to May. These outages are controlled by PJM.
- Costs are based on 2025 rates and do not reflect a potential increase in Labor or Material costs after 2025.
- ComEd cost estimate is valid for six (6) months after Facilities Study release by PJM.
- Foundation design assumes typical soil conditions at locations and will be subject to change after soil boring tests.
- All upgrades to facilities included in this document will be required to meet latest ComEd standards.
- Upgrades are subject to change based on detailed design development.

- ComEd will complete pre-design and post construction survey for the transmission and substation upgrades, as required. This includes, but is not limited to, the LIDAR survey and video imaging for transmission lines. Costs associated with this are at the expense of the Project Developer(s). Pre-design survey must be completed prior to detailed engineering.
- This study assumes that there will be no additional right-of-way and/or easement work required.
- This Facilities Study is time dependent. If the project is not into construction within one year of the issuance, the study will be void and the project re-studied, requiring the completion of a new Facilities Study.
- It is assumed that all PJM Phase 1 projects are complete prior to this Network Upgrade.
    - This scope assumes that TSS 967 Lee Road has been built, and any associated relay, SCADA, and communication upgrades at TSS 155 Nelson have been completed.

4. LAND REQUIREMENTS

No additional easements, access rights, or temporary or permanent real property rights or acquisitions were identified as required for network upgrades to the ComEd system within this study. However, as further needs are assessed in detailed engineering, design and/or construction activities, if it is determined that there is a need for easements, access rights, or temporary or permanent real property rights or acquisitions, the developer is fully responsible for the costs to acquire these required land rights. Also, as necessary, the schedule will be adjusted accordingly to account for the necessary time to obtain these required land rights. All easements, access rights, or temporary or permanent real property rights or acquisitions shall comply with all ComEd requirements as detailed in “Land requirements for Interconnection Substations”.

5. ENVIRONMENTAL AND PERMITTING

- There were no concerns identified regarding environmental approvals and permitting.

C. APPENDICES

Attachment #1: Single line Diagram for the Network Upgrade

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