PJM Facilities Study Report

For

Network Upgrade N8162

Cycle TC1

Revision 1: 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 N8162. The scope of this Network Upgrade includes the following:

- Upgrade the existing substation Station 3 Powerton by replacing two sets of disconnect switches with ones capable of interrupting 3000 Amps of charging current.
- Perform sag mitigation on 9 miles of 345kV transmission line L0304 from Station 3 Powerton to Tazewell (Ameren). 0.9 miles will need to be retensioned to accommodate the sag mitigation.

Upon completion of the Network Upgrade above, the expected final ratings will be:

- Disconnect switch upgrade will have a minimum thermal capability of 4584/5196/5988/6000 A (2739/3105/3578/3585) SN/SLTE/SSTE/SLD.
- L0304 will have a minimum thermal capability of 1892 MVA SSTE, 2028 MVA SLD. The limiting summer (35℃/95℉) ratings of L0304 will be SN/SLTE/SSTE/SLD: 1576/1862/1900/2035 MVA.
    - AMEREN to provide limiting Transmission Facility ratings for their portion of 345kV L0304, in accordance with NERC FAC-008, FERC Order 881 and PJM Operational requirements for normal and emergency ratings from -55F to 130F in 5F increments.

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

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N8162:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N8162. 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.

Sag mitigation will be performed on L0304 to meet 1892 SSTE, 2028 MVA SLD.

- ComEd will be performing the design, procurement, and construction of the new structures and related remediation methods required for L0304 sag mitigation.

- 5 spans of the approximately 9-mile line will be affected.
- The following facility upgrades are required for the L0304 sag mitigation.

Structure/Span #	Existing Structure Type	Comments
9	ADT-3+5	Replace insulators on bottom two phases with floating dead ends.
15	ADT-1+15	Replace structure with approx. 172' double circuit suspension steel monopole.
17-18		Remove approx. 18" of grade near midspan.
21-22		Remove approx. 8" of grade near midspan.
38-39		Coordinate with Ameren distribution on potential POI with distribution pole number 375358.

Substation Upgrades:

- At STA 03 Powerton, replace two sets of existing disconnect switches adjacent to 345kV L0304, with disconnect switches capable of interrupting 3000 amps of charging current and having a minimum thermal capability of 4584/5196/5988/6000 A (2739/3105/3578/3585) SN/SLTE/SSTE/SLD.
- 345kV L0304 relay settings to be reset at STA 03 Powerton and Tazewell (Ameren). Existing relays to be retained.

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	1	12
Permitting	12	24
Construction	24	36

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- 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 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 ComEd. 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 associated network upgrades, as listed in the study, are complete prior to this New Service Request Project being placed in service.

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 or for the project to interconnect at this location 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

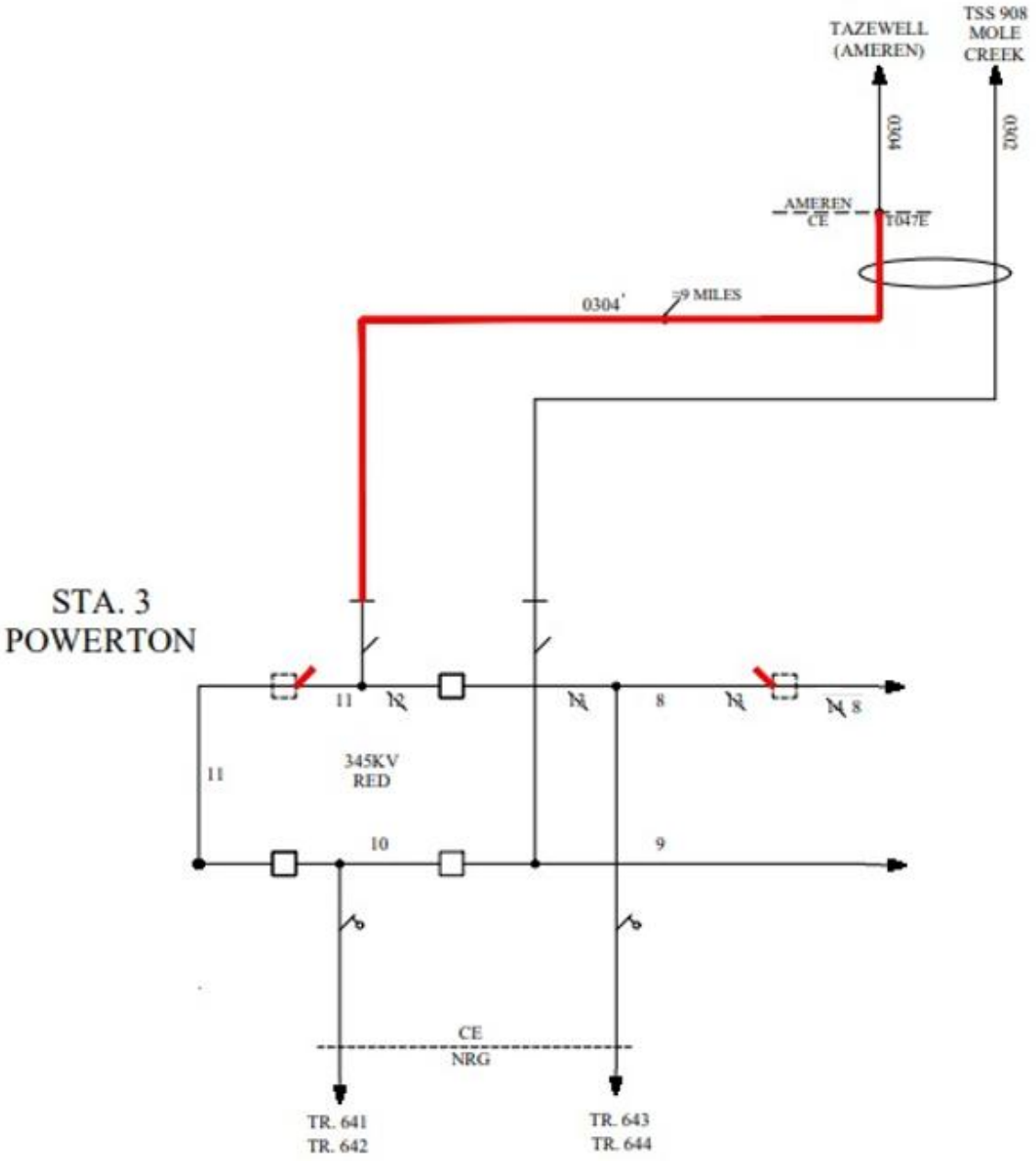
easements, access rights, or temporary or permanent real property rights or acquisitions, the developer is fully responsible for the costs to acquire these required land rights. Also, as necessary, the schedule will be adjusted accordingly to account for the necessary time to obtain these required land 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 PERMITING

- Project Developer(s) will be responsible for site restoration required for transmission upgrades. This includes, but is not limited to road restoration/improvements, wetland restoration, and farm field restoration/crop damage. Costs associated with this are at the expense of ComEd.
- Project Developer(s) will be responsible for the cost to purchase real estate or obtain the necessary right-of-way easement for all upgrades associated with this project. These associated upgrades are not included in the costs listed in this study.
- Project Developer(s) will be responsible for remediation costs for locations found to have environmental contaminations and remediation. This may require contaminated soil disposal as well as lead paint removal for existing structure work.
- It is assumed that all necessary permits will be obtained in a timely manner to allow engineering and construction to proceed according to the Milestone Schedule.
- It is assumed that conveyance of property and rights will be obtained to support the PJM Transmission Outage Schedule.
- It is assumed that the required Environmental Study will yield no impediments to the development of the site.
- ComEd will complete geotechnical soil borings, resistivity study, and analysis for substation and transmission upgrades. Costs associated with this are at the expense of the Project Developer.

C. APPENDICES

Attachment #1: Single line Diagram for Network Upgrade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