PJM Facilities Study Report

For

Network Upgrade N6639.2

Cycle TC1

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 Commonwealth Edison (ComEd).

A. Project Description

The System Impact Study for PJM Interconnection Cycle TC1 has identified the need for PJM Network Upgrade N6639.2. The scope of this Network Upgrade includes the following:

- Reconductor 27.2 Miles of 345kV transmission line 93407 from structure 339 to structure 454
- Perform sag mitigation on 13.5 miles of 345kV transmission line 93407 from structure 454 to TSS 111 Electric Junction
- Upgrade the existing substation TSS 111 Electric Junction by replacing L.93407 CB motor-operated disconnect switches on both sides of the breaker.

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

35C (95F) (Summer) MVA	**Norm Day**	**LTE (4Hr) Day**	**STE (30Min) Day**	**LD (15Min) Day**
new L93407 rating	1,872	2,112	2,336	2,485

- Reconductored section of 345kV line 93407 will have a final rating of 2336 MVA SSTE
- TSS 111 Electric Junction 345kV L.93407 MODs shall have a final rating of 1961/2112/2524/3015 MVA SN/SLTE/SSTE/SLD

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

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N6639.2:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N6639.2. 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.

- 345kV transmission line 93407 will be reconductored from structure 339 to structure 454. Approximately 27.2 circuit miles of new bundled 2-1033.5 kcmil "Curlew" ACSS/TW will be installed. New 7#6 Alumoweld static wire will be installed. The following structures are required to be replaced as part of this work:

Structure Number	Existing Structure Type	New Structure Type
359	HS-10	Suspension

Structure Number	Existing Structure Type	New Structure Type
340, 341, 342, 343, 344, 345, 349, 354, 355, 357, 361, 362, 363, 364, 365, 366, 367, 368, 369, 379, 380, 381, 382, 384, 387, 388, 389, 391, 396, 404, 405, 406, 410, 412, 413, 414, 417, 426, 429, 430, 436, 442, 445, 447	LSV+0	Suspension
347, 348, 358, 370, 371, 377, 383, 390, 392, 399, 400, 401, 403, 424, 427, 431, 438, 441, 443, 444, 446	LSV+5	Suspension
346, 378	LSV+15	Suspension
360, 452, 453	LSV+20	Suspension
440	LSV+35	Suspension
372	LSV-5	Suspension
339, 350, 351, 352, 356, 373, 374, 375, 385, 386, 393, 394, 395, 397, 398, 402, 407, 408, 409, 415, 416, 418, 419, 420, 421, 422, 423, 425, 428, 432, 433, 434, 435, 439, 448, 449, 450, 451	LSV-10	Suspension
353, 376, 411, 437	MSIV-10	Suspension

- Tower modifications will be required for existing structure 454.
- Sag mitigation will be performed on 345kV transmission line 93407 from structure 454 to TSS 111 Electric Junction. No structures are required to be replaced as part of this work.

TSS 111 Electric Junction

- Replace existing 345kV L.93407 CB Motor Operated Disconnects (MODs on both sides of the breaker. MODs shall have a minimum capability of 3282/3534/4224/5046 A (1961/2112/2524/3015 MVA SN/SLTE/SSTE/SLD).
- Replace the cable leads, bolted connectors, grounding attachments, compression lugs, cable supports on 345kV L.93407 CB for all 2156kcmil ACSR cable and 2-1113kcmil ACSE cable with 2-1590kcmil ACSR.
- Review and reset 345kV L93407 relay settings

TSS 155 Nelson

- Review and reset 345kV L.15502 relay settings

TSS 934 Herman Road

- Review and reset 345kV L.93407 relay settings

2. MILESTONE SCHEDULE FOR COMPLETION OF COMED WORK

Facilities outlined in this report are estimated to take 42 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	15
Permitting/Material Procurement	3	20
Construction	21	42

3. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- This cost estimates assume 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.
- ComEd cost estimate is valid for six (6) months after Facilities Study release by PJM.
- 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 under 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.
- Potential transmission tower replacement may be required with line reconductoring work
- It is assumed the completion of PJM Queue Project AF2-041 Steward Creek Solar 300MW INTERCONNECT AT TSS 934 Herman Rd

4. LAND REQUIREMENTS

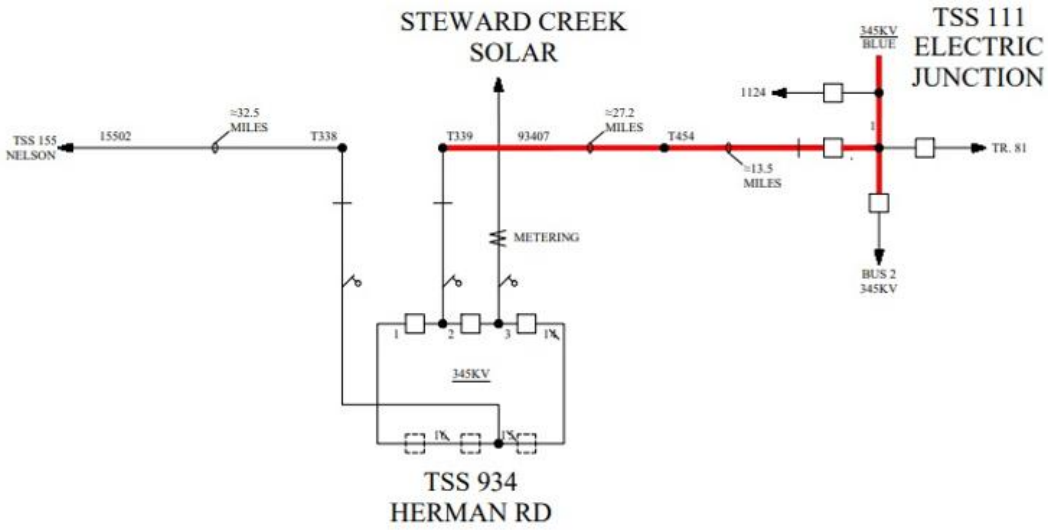
No additional easements, access rights, or temporary or permanent real property rights or acquisitions were identified as required for network upgrades to the ComEd system within this study. However, as further needs are assessed in detailed engineering, design and/or construction activities, if it is 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 PERMITING

- ComEd will be responsible for obtaining all environmental approvals and permitting required. This includes any endangered species studies and monitoring, as required. Costs associated with this permitting are at the expense of the Project Developer(s).
- The 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 the Project Developer(s).
- The 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.
- The Project Developer(s) will be responsible for remediation costs for locations found to have environmental contamination 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(s)

C. APPENDICES

Attachment #1: Single line Diagram for Network Upgrade


STEWARD CREEK
SOLAR
TSS 111
ELECTRIC
JUNCTION
345KV
BLUE
1124
TSS 155
NELSON
15502
≈32.5
MILES
T338
T339
93407
≈27.2
MILES
T454
≈13.5
MILES
TR. 81
METERING
BUS 2
345KV
345KV
TSS 934
HERMAN RD