PJM Facilities Study Report

For

Network Upgrade N9243

Cycle TC1

Revision [0]: [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 Indiana Michigan Transmission Company, Inc. (IMTCo).

A. Project Description

The System Impact Study for PJM Interconnection Cycle TC1 has identified the need for PJM Network Upgrade N9243. The scope of this Network Upgrade includes the following:

At the Jefferson Station:

- Install one (1) 765/345 kV transformer, one (1) 765 kV breaker, and one (1) 345 kV breaker
- Expand the Jefferson Station to accommodate the new equipment

At the Clifty Creek Station:

- Install new breaker string relocating one (1) breaker and installing two (2) new 345 kV breakers

- Remove existing Jefferson – Clifty Creek 345 kV line
- Construct a new Jefferson – Clifty Creek 345 kV double circuit line

B. Transmission Owner Facilities Study Results

1. Detailed Scope of work for Network Upgrade N9243:

The following is a detailed description of Transmission Owner Upgrades for Network Upgrade N9243. 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.

At the Jefferson Station:

- Expand the northeast corner of the station
- Remove Circuit breaker C1
- Install one (1) new 765/345 kV transformer and associated equipment
- Install one (1) new 765 kV circuit breaker with associated control relaying and breaker disconnect switches
- Install one (1) new 345 kV circuit breaker with associated control relaying and breaker disconnect switches
- Install a new station service center

At the Clifty Creek Station:

- Extend 345 kV bus 1 and 2 to make room for a new breaker string
- Move a section of the 138 kV bus underground to make room for the new breaker string
- Relocate circuit breaker S to the new string
- Install two (2) new 345 kV circuit breakers on the new string

- Remove the existing Jefferson – Clifty Creek 345 kV line
- Construct a new Jefferson – Clifty Creek 345 kV double circuit line
- Evaluate line settings for all appropriate lines
- Install direct fiber relaying between the Jefferson and Clifty Creek station
- Associated conductors (buswork, ground grid, jumpers), telecom terminal equipment, insulators, arresters, foundations, and structures

2. COST ESTIMATE OF IMTCo FACILITIES FOR REQUIRED UPGRADES

The following table summarizes the total estimated costs according to FERC criteria. The estimated costs are in 2025 dollars. **This cost excludes a Federal Income Tax Gross Up charges on Contributions in Aid of Construction (CIAC)**. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes. The estimated reimbursement amount is noted in the table below.

2.1 COST ESTIMATE FOR TRANSMISSION OWNER-BUILD OPTION

Work Description	Type of Upgrade	Direct		Indirect		Total Cost
		Labor	Material	Labor	Material	
N9243	Network Upgrade	$61,241,000	$105,670,000	$12,483,000	$20,844,000	$200,238,000

3. MILESTONE SCHEDULE FOR COMPLETION OF IMTCo WORK

Facilities outlined in this report are estimated to take 55 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.

Activity	Dates
Project Engagement	Day 1
Engineering Start	Day 5
Material Ordering	Starts Day 168
Construction (Grading & Below Grade)	Day 1,269
Construction (Above Grade)	Starts Day 1,361
Outage Requests Made By	Day 179
Outage (Structure Foundations)	Day 1,361
Outage (Cut-in & Testing)	N/A
Ready For Back Feed (Interconnected Transmission Owner In-Service Date)	Day 1,667

4. ASSUMPTIONS IN DEVELOPING SCOPE/COST/SCHEDULE

- Clifty Creek Station uses a bus summation protection scheme, new breaker string will utilize this protection scheme
- Assumed right of way width of 150 FT
- Two OVEC owned circuit breakers at Clifty Creek Station, CB DL-1 and CB T, have a 50kA fault current. These may need to be upgraded to 63kA.
- Coordination will be needed with OVEC for outages. Coordination with OVEC unit outage preferred. A Spring or Fall construction window will be required to avoid outages during peak season.

5. LAND REQUIREMENTS

- New easements will be needed for the new Jefferson – Clifty Creek 138 kV line

6. ENVIRONMENTAL AND PERMITING

- Due to the age of much of the existing OVEC owned equipment, PCB contamination RISK present. Remediation added into the estimate.