FirstEnergy – JCPL – 2026
Submission of Supplemental Projects for Inclusion in the Local Plan

JCPL Transmission Zone M-3 Process
West Wharton No. 1 230-34.5 kV Transformer

Need Number: JCPL-2024-002

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Previously Presented: Solution Meeting 09/09/2025
Need Meeting 01/09/2024

Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption References:

System Performance Projects Global Factors

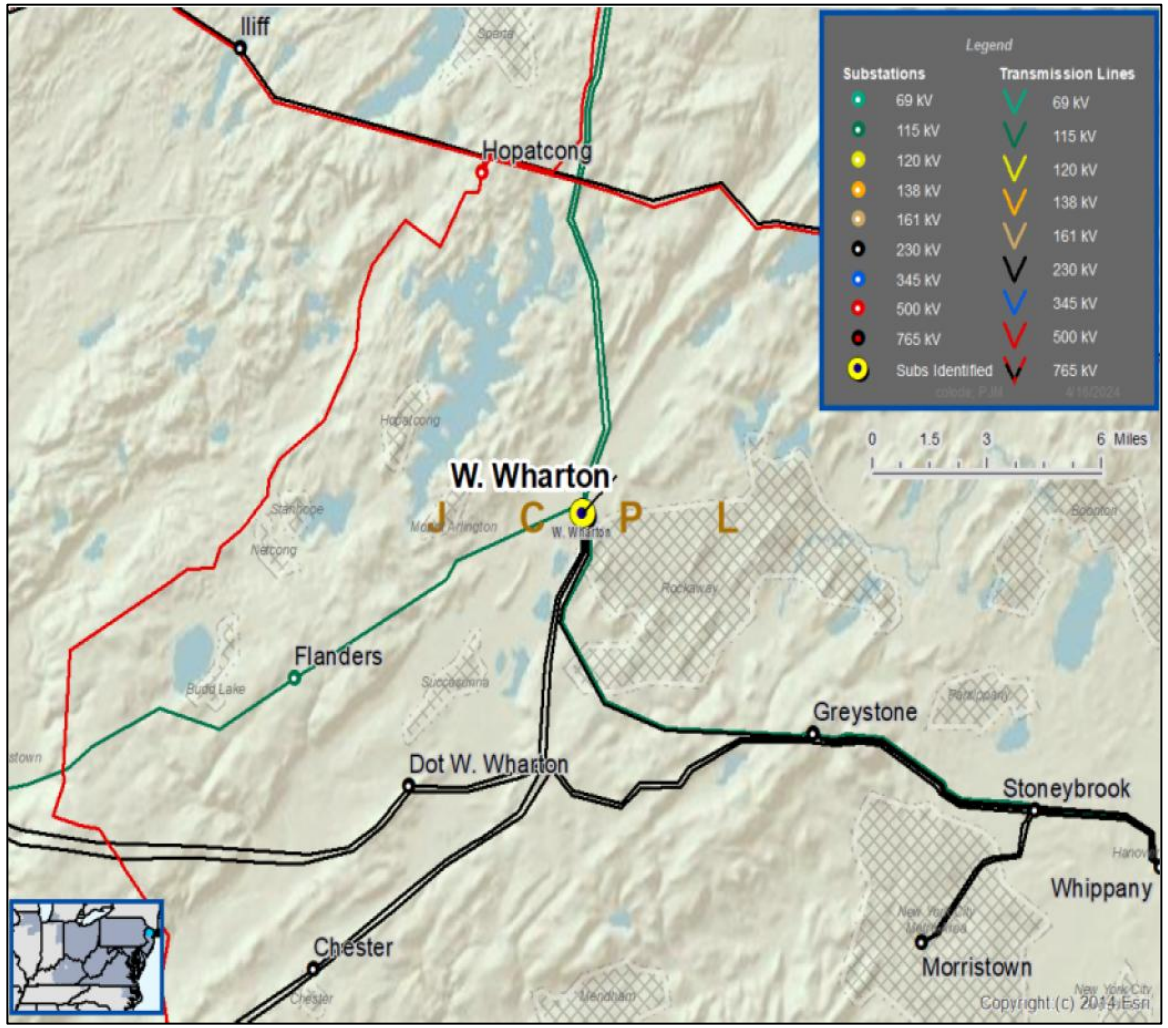
- System reliability and performance
- Reliability of Non-Bulk Electric System (Non-BES) Facilities

Add/Replace Transformers

Past System Reliability/Performance

Problem Statement:

- The 230-34.5 kV No. 1 Transformer at West Wharton Substation is approximately 45 years old and is reaching end of life.
- Dielectric strength of the transformer is measuring below acceptable IEEE limits.
  - Low measured dielectric strength reduces breakdown voltage and greatly increases risk of failure from arcing.
- Existing transformer ratings:
  - 156 / 164 / 197 / 198 MVA (SN/SLTE/WN/WLTE)



JCPL Transmission Zone M-3 Process
West Wharton No. 1 230-34.5 kV Transformer

Need Number: JCPL-2024-002

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

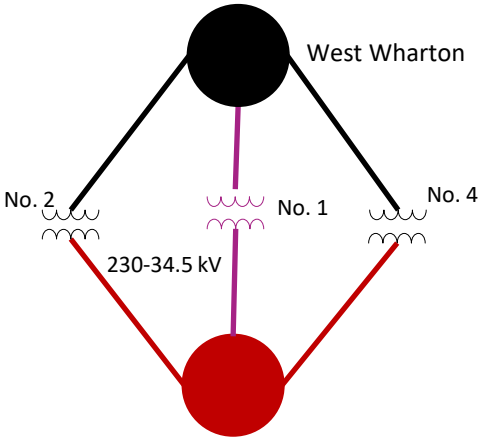
At West Wharton Substation:

- Replace No. 1 230-34.5kV Transformer with a new 230-34.5 kV 168 MVA unit
- Replace one 230 kV circuit switcher with a new 230 kV circuit breaker
- Replace two 34.5 kV circuit breakers and associated disconnect switches

West Wharton No. 1 230-34.5 kV Transformer Ratings:

- Before Proposed Solution: 156 / 164 / 197 / 198 MVA (SN/SLTE/WN/WLTE)
- After Proposed Solution: 168 / 176 / 202 / 218 MVA (SN/SLTE/WN/WLTE)

Estimated Project Cost: $12.00 M
Projected In-Service: 11/9/2029
Supplemental Project ID: s3748.1



Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

JCPL Transmission Zone M-3 Process
West Wharton No. 2 230-34.5 kV Transformer

Need Number: JCPL-2024-024

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Previously Presented: Solution Meeting 09/09/2025
Need Meeting 04/30/2024

Project Driver:

Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

System Performance Projects Global Factors

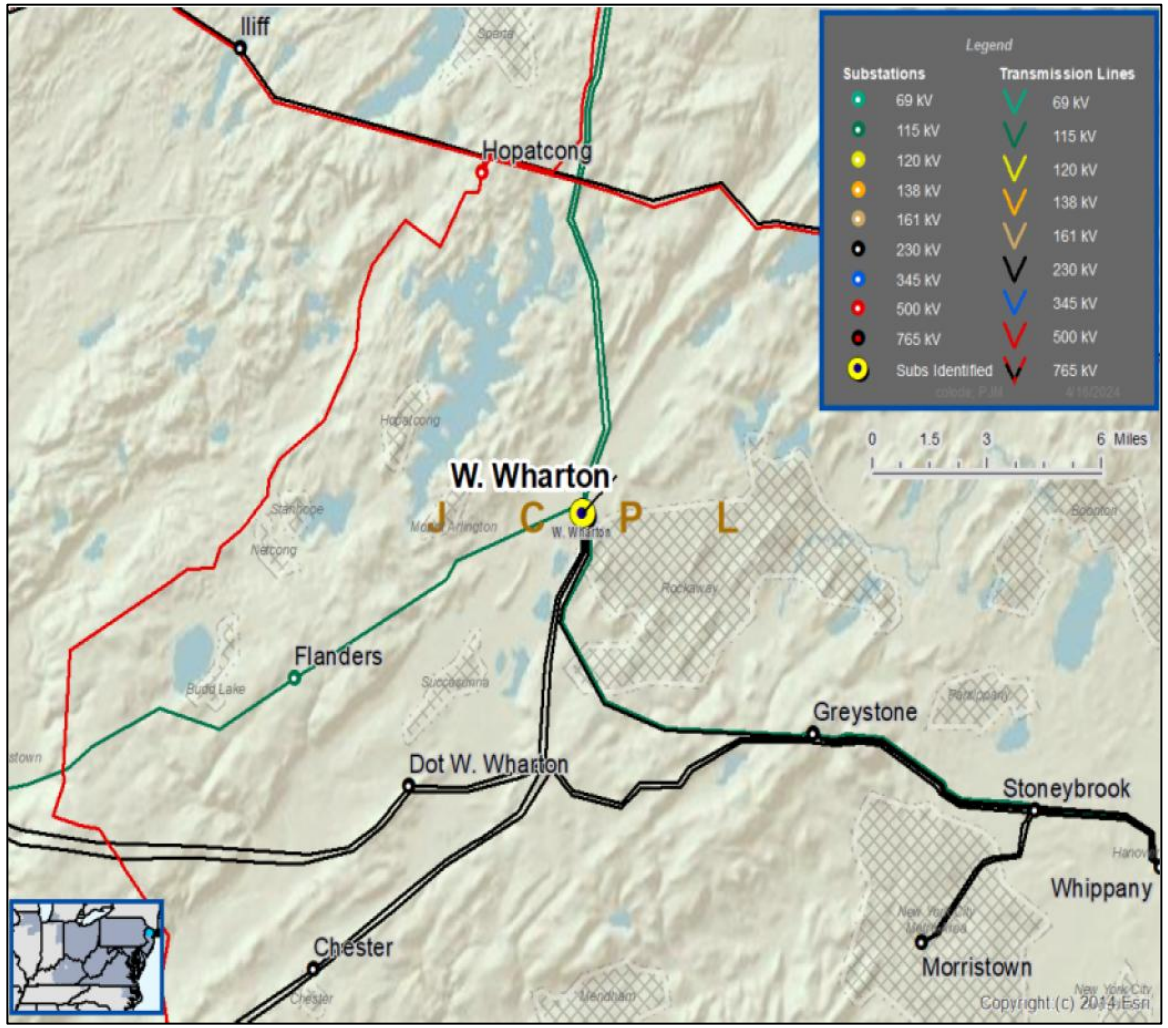
- System reliability and performance
- Substation/line equipment limits

Add/Replace Transformers

Past System Reliability/Performance

Problem Statement:

- The West Wharton No. 2 230-34.5 kV Transformer is approximately 52 years old and is approaching end of life.
- The transformer is experiencing issues with bushing failures.
- The transformer has increased levels of water, carbon monoxide, oxygen and nitrogen in the transformer oil.
- The transformer is limited by terminal equipment.
- Existing Transformer Ratings:
  - 155 / 163 / 197 / 198 MVA (SN/SLTE/WN/WLTE)



JCPL Transmission Zone M-3 Process
West Wharton No. 2 230-34.5 kV Transformer

Need Number: JCPL-2024-024

Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

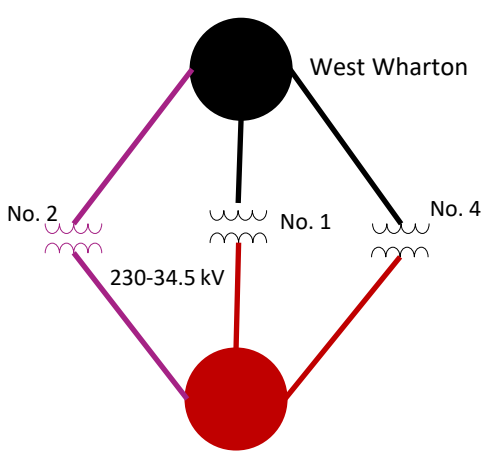
At West Wharton Substation:

- Replace No. 2 230-34.5kV Transformer with a new 230-34.5 kV 168 MVA unit
- Replace one 230 kV circuit switcher with a new 230 kV circuit breaker
- Replace two 34.5 kV circuit breakers and associated disconnect switches

West Wharton No. 2 230-34.5 kV Transformer Ratings:

- Before Proposed Solution: 155 / 163 / 197 / 198 MVA (SN/SLTE/WN/WLTE)
- After Proposed Solution: 168 / 176 / 202 / 218 MVA (SN/SLTE/WN/WLTE)

Estimated Project Cost: $12.00 M
Projected In-Service: 12/22/2028
Supplemental Project ID: s3749.1



Legend	
500 kV	
345 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
34.5 kV	
23 kV	
New	

Revision History

01/05/2026 – V1 s3748 s3749