Subregional RTEP Committee – Mid-Atlantic
FirstEnergy Supplemental Projects

JCPL Transmission Zone

Needs

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

JCPL Transmission Zone M-3 Process
Manitou- Ortley Beach- Seaside Park 34.5 kV D212 Line, NJ

Need Number: JCPL-2026-009

Process Stage: Need Meeting – SRRTEP-MA – 05/14/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

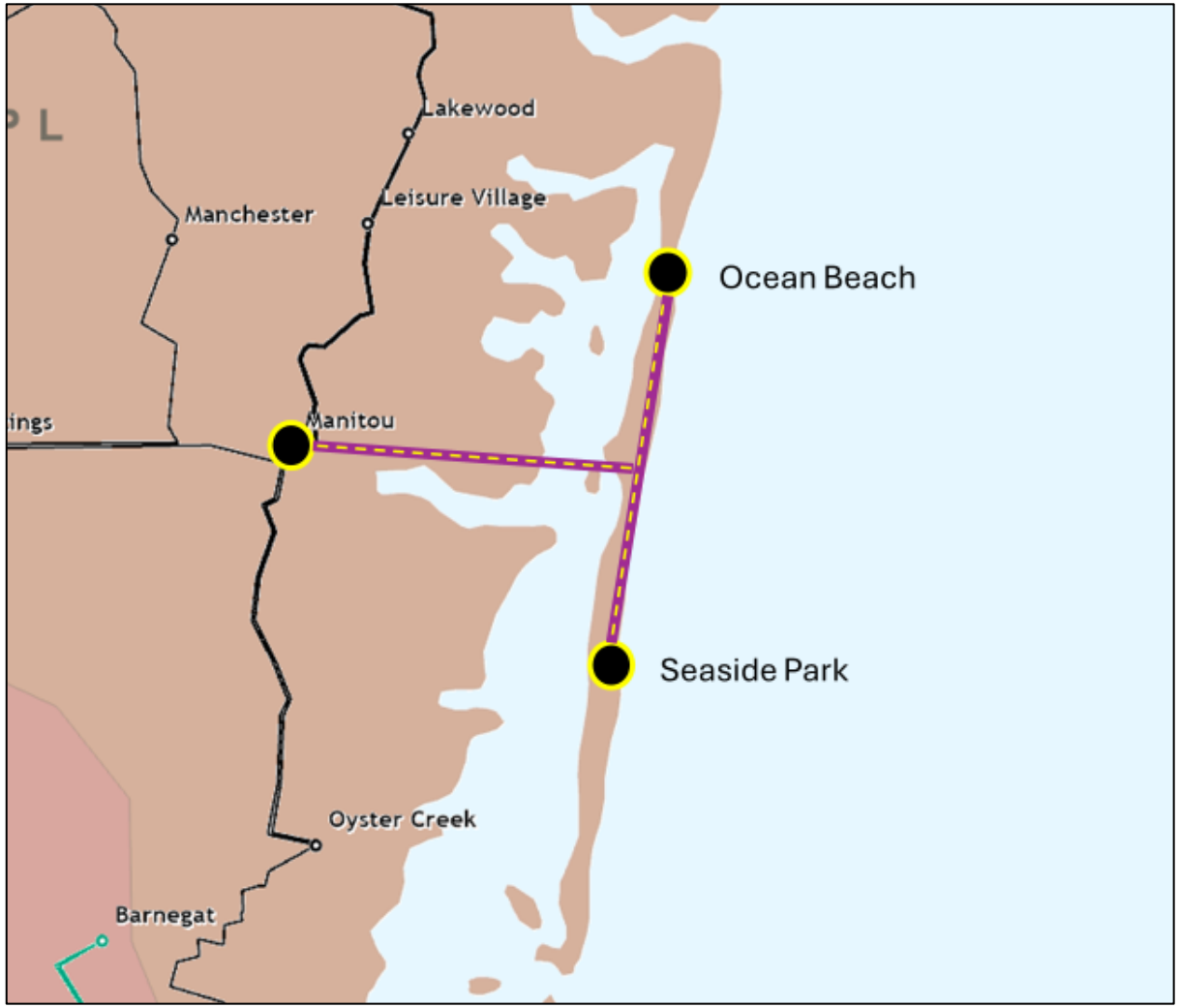
- System Performance Global Factors
  - System reliability/performance
  - Substation/Line equipment limits
- Line Condition Rebuild/Replacement
  - Age/condition of wood pole transmission line structures

Problem Statement:

The Manitou- Ortley Beach- Seaside Park 34.5 kV D212 line was constructed approximately 76 years ago and is approaching end of life. It is approximately 17.7 miles long with 493 wood pole transmission line structures.

Per recent inspections, the line is exhibiting deterioration. Approximately 203 structures require repairs due to deterioration. This includes wood pole decay, damaged grounding system, and wood pole cracking indicating that components are approaching end of life.

In the last five years, the line has had 26 unscheduled, sustained outages.



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Need Number: JCPL-2026-009

Problem Statement: ***(Cont'd from previous slide)***

Existing Ratings:

Facility	Existing Overall Facility Ratings (SN/SE/WN/WE)	Existing Line Conductor Ratings (SN/SE/WN/WE)
Manitou - Toms River Tap 34.5 kV Line	55 / 67 / 63 / 79	55 / 67 / 63 / 79
Toms River - Toms River Tap 34.5 kV Line		
Seaside Park Tap 1 - Toms River 34.5 kV Line		
Seaside Park - Seaside Park Tap 1 34.5 kV Line		
Seaside Heights - Seaside Park Tap 1 34.5 kV Line		
Seaside Park Tap 2 - Seaside Park 34.5 kV Line	40 / 51 / 40 / 51	
Seaside Heights - Seaside Park Tap 2 34.5 kV Line	55 / 67 / 63 / 79	
Seaside Park Tap 2- Ortley Beach Tap 34.5 kV Line		
Ortley Beach Tap- Ortley Beach 34.5 kV Line	35 / 44 / 35 / 44	
Lavallette- Ortley Beach Tap 34.5 kV Line	55 / 67 / 63 / 79	
Lavallette- Ortley Beach 34.5 kV Line	35 / 44 / 35 / 44	

JCPL Transmission Zone M-3 Process
Larrabee - Point Pleasant B106 34.5 kV Line - New Customer Connection, NJ

Need Number: JCPL-2026-011

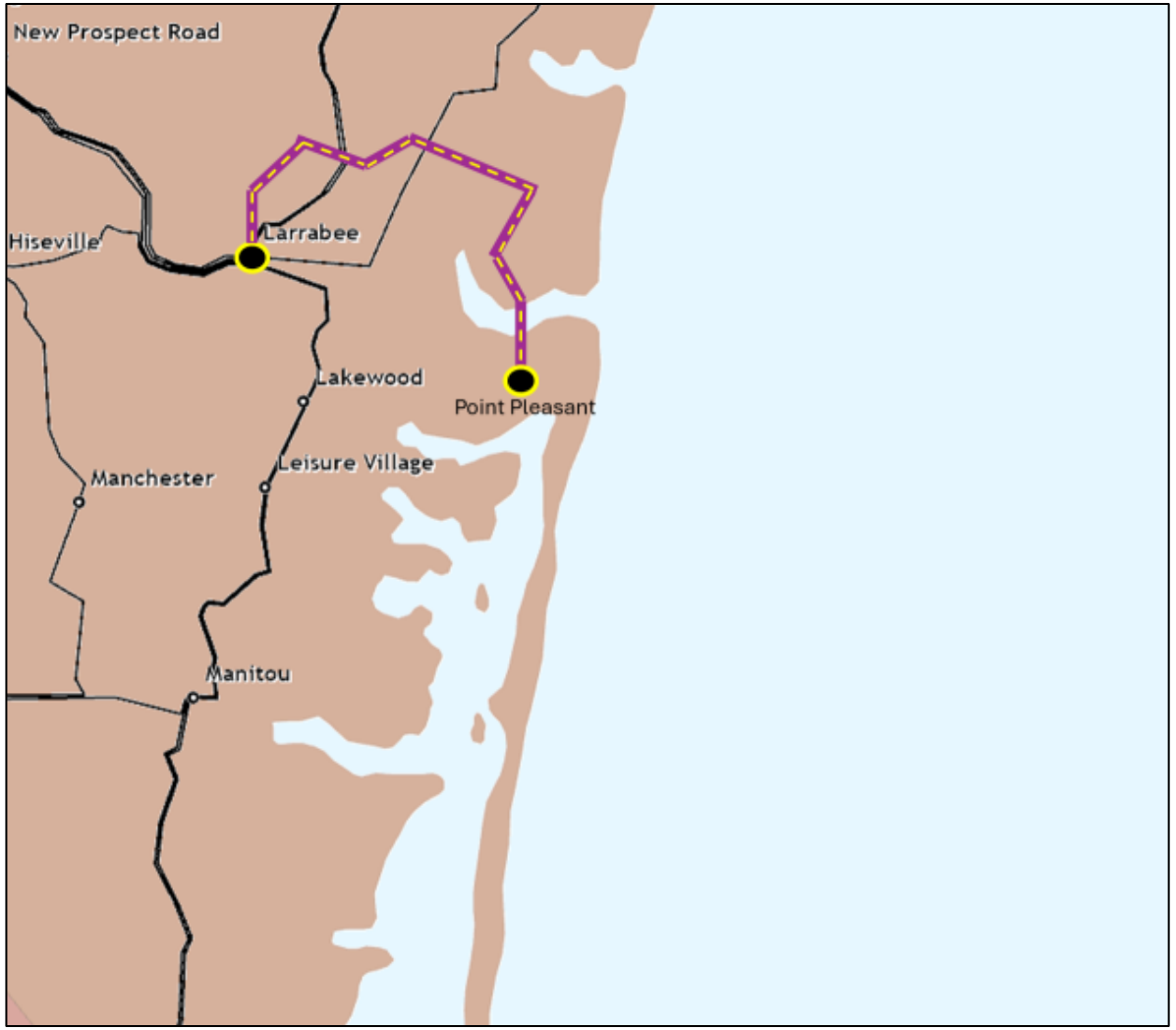
Process Stage: Need Meeting – SRRTEP-MA – 05/14/2026

Project Driver:
Customer Service

Specific Assumption References:
New customer connection requests will be evaluated per FirstEnergy's "Requirements for Transmission Connected Facilities" document and "Transmission Planning Criteria" document.

Problem Statement:
New Customer Connection - A customer requested 34.5 kV service for load of approximately 11 MW near the Larrabee - Point Pleasant B106 34.5 kV Line. The request is approximately eight miles from Larrabee Substation.

Requested in-service date is 12/13/2030.



JCPL Transmission Zone M-3 Process
Rockaway - West Wharton 34.5 kV I711 Line, NJ

Need Number: JCPL-2026-015

Process Stage: Need Meeting – SRRTEP-MA – 05/14/2026

Project Driver:
Equipment Condition/Performance/Risk

Specific Assumption References:
- System Performance Global Factors
  - System reliability/performance
  - Substation/Line equipment limits
- Line Condition Rebuild/Replacement
  - Age/condition of wood pole transmission line structures

Problem Statement:
The Rockaway - West Wharton 34.5 kV I711 Line was constructed approximately 40 years ago and is approaching end of life. It is approximately 12 miles long with 242 wood pole transmission line structures.

Per recent inspections, the line is exhibiting deteriorations. Inspection findings include:

- 23 structures failed inspection due to sound test.
- 142 structures failed inspection due to decay, woodpecker damage and missing grounding.

Within the last five years, the line has had 13 unscheduled, sustained outages.

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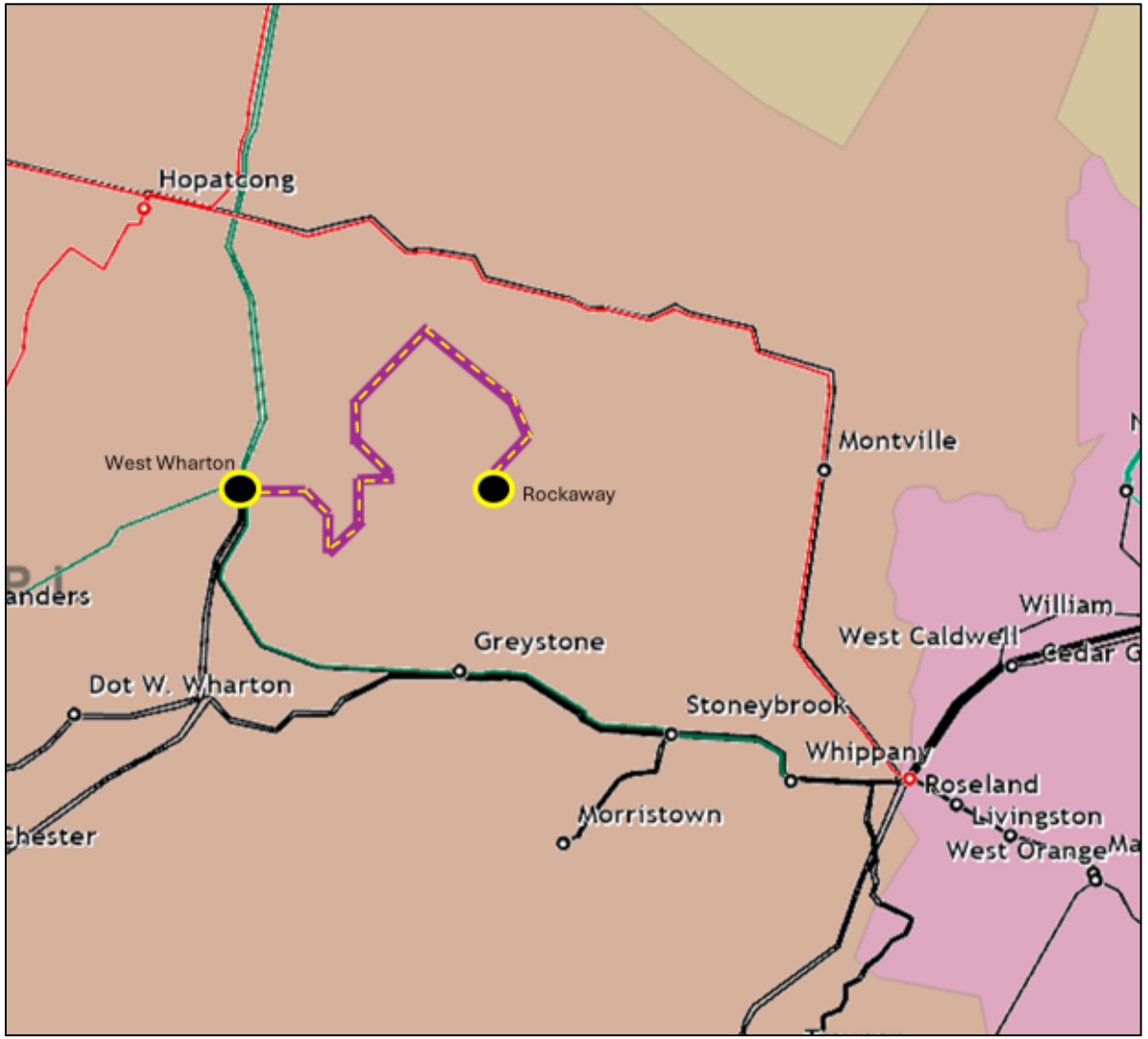

Need Number: JCPL-2026-015

Problem Statement: ***(Cont'd from previous slide)***

Existing Ratings:

Facility	Existing Overall Facility Ratings (SN/SE/WN/WE)
Rockway - Beach Glen 34.5 kV Line	39 / 48 / 45 / 52
Beach Glen - Beaver Brook I T 34.5 kV Line	39 / 48 / 45 / 56
Beaver Brook I T - Hewlett Packard SWPT 34.5 kV Line	39 / 48 / 45 / 56
Hewlett Packard SWPT - Hewlett Packard 34.5 kV Line	41 / 50 / 48 / 60
Beaver Brook I T - Joyce Molding IT 34.5 kV Line	44 / 53 / 50 / 63
Joyce Molding I T - Beaver Brook 34.5 kV Line	41 / 52 / 54 / 62
Hewlett Packard SWPT - Record SW PT 34.5 kV Line	39 / 48 / 45 / 56
Record SW PT - Mt Hope SW PT 34.5 kV Line	39 / 48 / 45 / 56
Mt Hope SW PT - Mt. Hope 34.5 kV Line	40 / 48 / 45 / 57

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Need Number: JCPL-2026-015

Problem Statement: ***(Cont'd from previous slide)***

Existing Ratings:

Facility	Existing Overall Facility Ratings (SN/SE/WN/WE)
Joyce Molding I T - Joyce Molding 34.5 kV Line	30 / 37 / 30 / 37
Mt Hope SW PT - Townsquare T I 34.5 kV Line	39 / 48 / 45 / 56
Mt Townsquare T I - Townsquare Mall T 34.5 kV Line	27 / 34 / 36 / 41
Townsquare Mall T - Bambergers I T -Bambergers 34.5 kV Line	14 / 17 / 14 / 17
Record SW PT - Record 34.5 kV Line	26 / 33 / 26 / 33
Bambergers I T - Rockaway Mall -Pennys 34.5 kV Line	14 / 17 / 14 / 17
Townsquare T I - West Wharton 34.5 kV Line	39 / 48 / 45 / 56

JCPL Transmission Zone M-3 Process
Manitou Substation, NJ

Need Number: JCPL-2026-016

Process Stage: Need Meeting – SRRTEP-MA – 05/14/2026

Project Driver:
Operational Flexibility and Efficiency

Specific Assumption References:

- System Performance Projects
  - Add/Expand Bus Configuration
  - Load at risk in planning and operational scenarios
  - Reduce the amount of exposed potential local load loss during contingency conditions
  - Eliminate simultaneous outages to multiple networked elements
  - Substation and line equipment limits

Problem Statement:
A 34.5 kV bus fault or faulted breaker at Manitou Substation results in the loss of nearly the entire 34.5 kV yard. Manitou Substation serves 24,800 customers and approximately 25 MW of load.

In addition, the existing Manitou Substation 34.5 kV circuit breakers BK2B, Z52, X50, V126, C55, L138, O41, BK8A, BK8B, 69509A and 69509B and associated disconnect switches and protective relaying are more than 30 years old and are approaching end of life. These breakers are a combination of oil and SF6 breakers.

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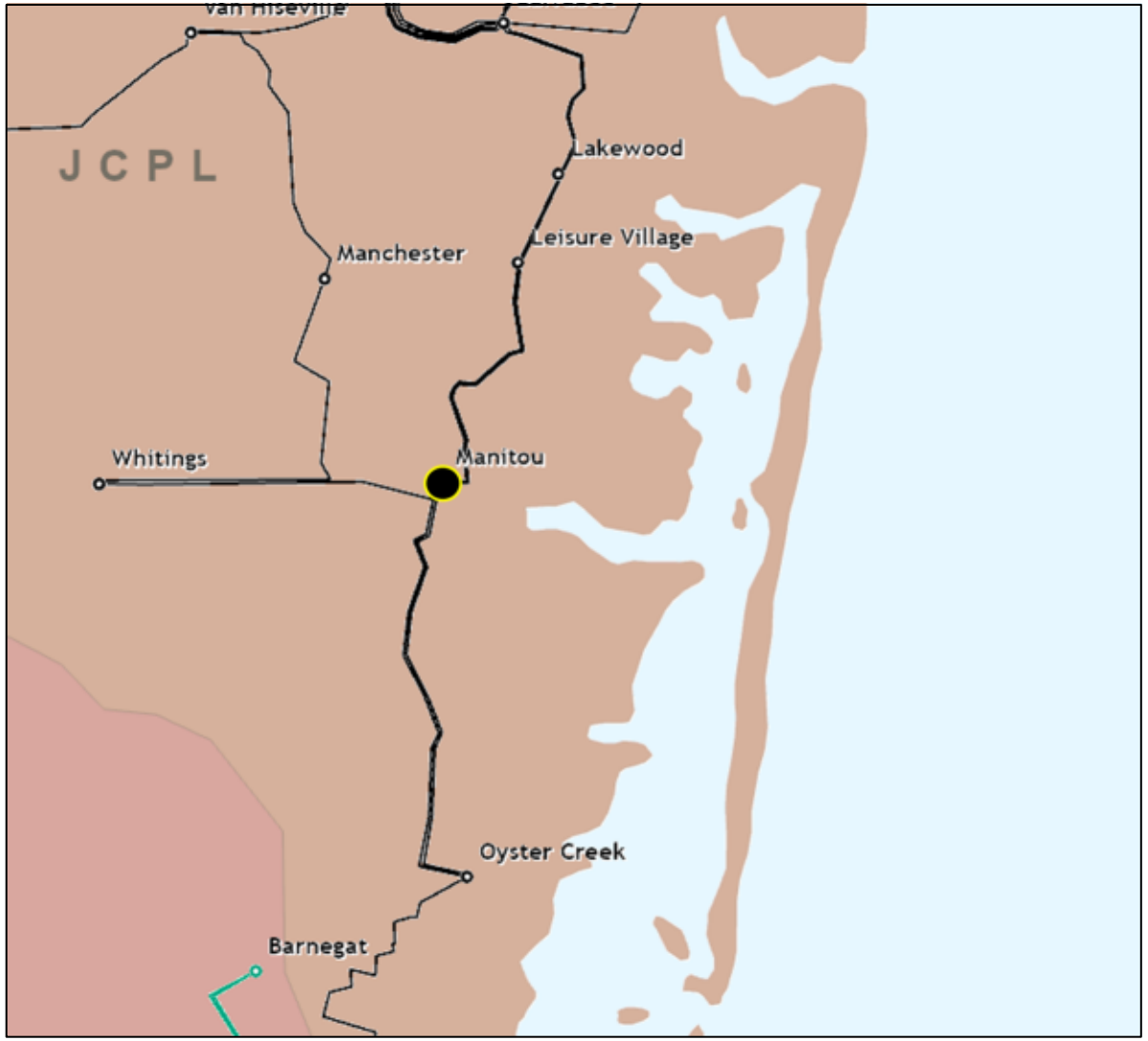


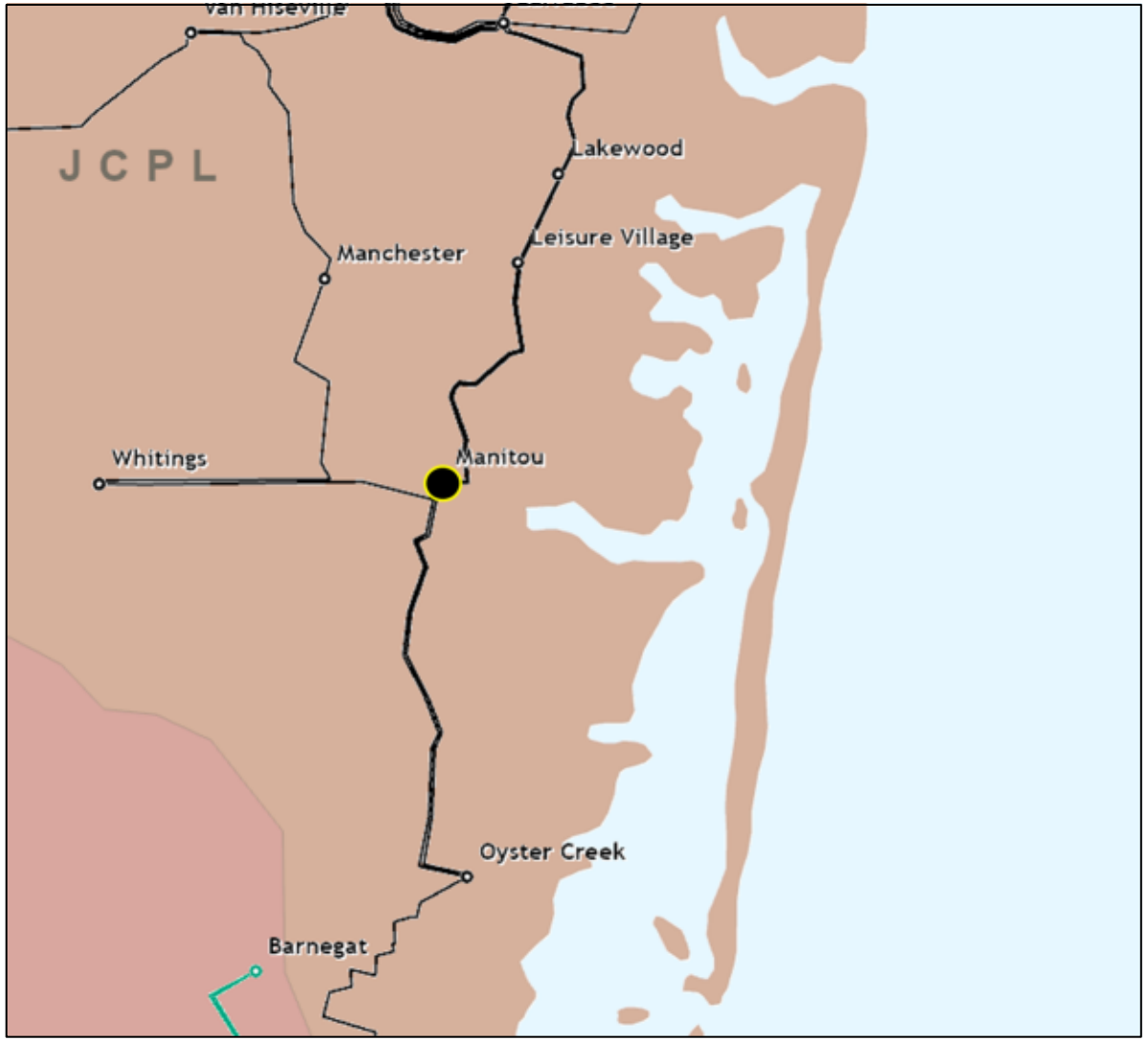
JCPL Transmission Zone M-3 Process
Manitou Substation, NJ

Need Number: JCPL-2026-016

Problem Statement: ***(Cont'd from previous slide)***

Transmission line ratings are limited by terminal equipment.

- Manitou - Motts Corner No. 1 34.5 kV X50 Line:
  - Existing Transmission Line Ratings: 44 / 57 / 63 / 71 MVA (SN/SE/WN/WE)
  - Existing Conductor Ratings: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)
- Manitou - Motts Corner No. 2 34.5 kV Z52 Line:
  - Existing Transmission Line Ratings: 41 / 49 / 51 / 56 MVA (SN/SE/WN/WE)
  - Existing Conductor Ratings: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)



JCPL Transmission Zone M-3 Process
Cookstown Substation, NJ

Need Number: JCPL-2026-019

Process Stage: Need Meeting – SRRTEP-MA – 05/14/2026

Project Driver:
Equipment Condition/Performance/Risk

Specific Assumption References:

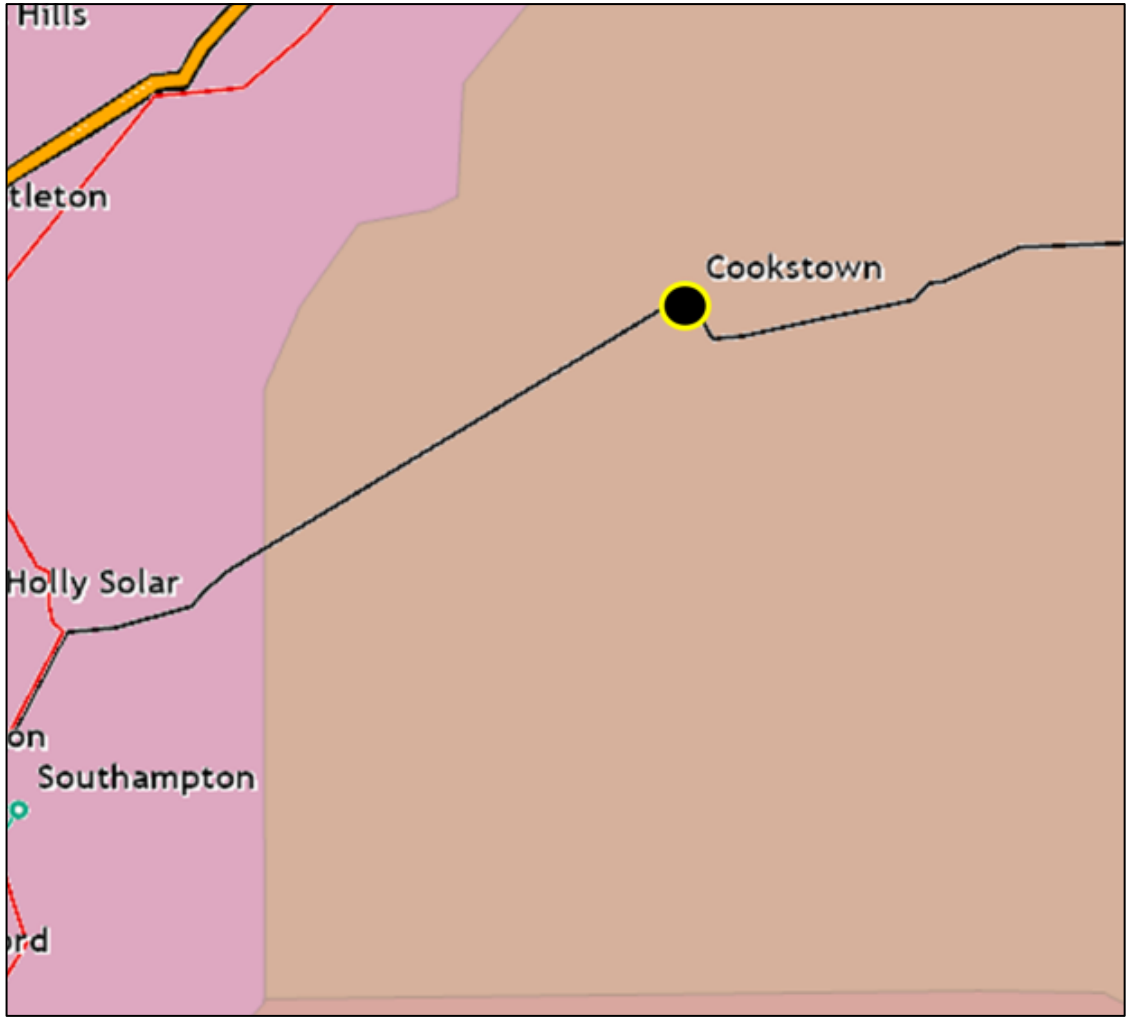
- System Performance Projects Global Factors
  - System reliability and performance
- Add/Replace Transformers
- Past System Reliability/Performance

Problem Statement:

The existing Cookstown Substation 34.5 kV oil circuit breakers BK3B, BK1B, U73, G33A, and T98, associated disconnect switches and protective relaying are more than 55 years old and are approaching end of life. Replacement components are difficult to source leading to non-standard repairs.

The following line and transformer circuit are currently limited by terminal equipment.

- Cookstown - Van Hiseville U73 34.5 kV Line:
  - Existing Transmission Line Ratings: 41 / 50 / 48 / 57 MVA (SN/SE/WN/WE)
  - Existing Conductor Ratings: 41 / 50 / 48 / 60 MVA (SN/SE/WN/WE)
- Cookstown No. 1 230-34.5 kV Transformer:
  - Existing Transformer Circuit Ratings: 137 / 163 / 171 / 196 MVA (SN/SE/WN/WE)
  - Existing Transformer Ratings: 156 / 163 / 195 / 196 MVA (SN/SE/WN/WE)



Solutions

Stakeholders must submit any comments within 10 days of this meeting in order to provide time necessary to consider these comments prior to the next phase of the M-3 process

JCPL Transmission Zone M-3 Process
Deep Run – Englishtown 115 kV DRE2 Line, NJ

Need Number: JCPL-2023-056

Process Stage: Solution Meeting – SRRTEP-MA – 05/14/2026

Previously Presented: Need Meeting – SRRTEP-MA – 11/16/2023

Project Driver:
Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

- Line Condition Rebuild/Replacement
  - Age/condition of wood pole transmission line structures
  - Age/condition of transmission line conductors
- System Performance Projects
  - Substation/line equipment limits

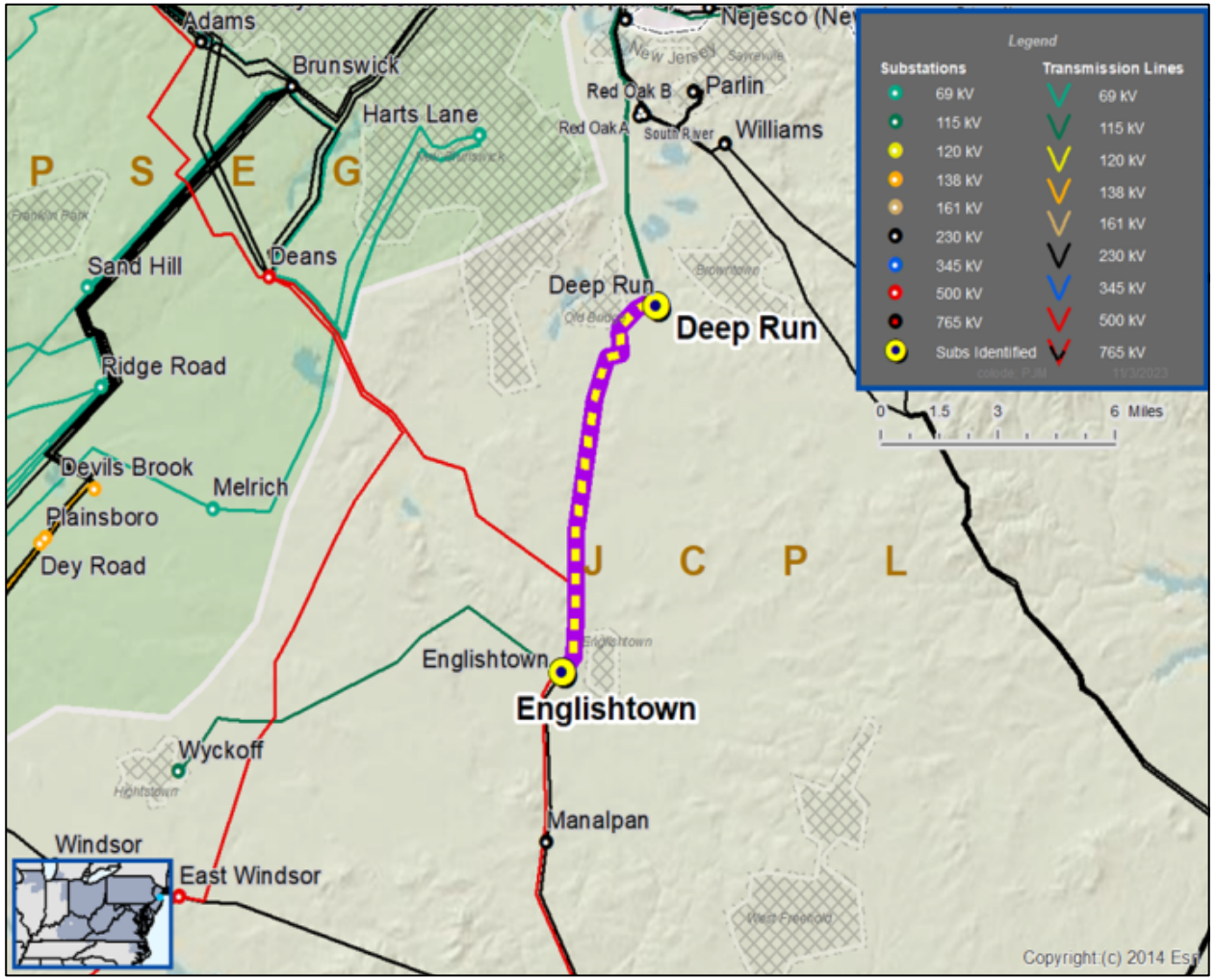
Problem Statement:

Both Deep Run – Englishtown 115 kV DRE1 and DRE2 lines have structures with an average age of 55+ years. Upon visual inspection, 88-91% fail inspection due to rot/decay and woodpecker damage.

Line sections are exhibiting deterioration and increasing maintenance needs.

DRE2 Transmission line ratings are limited by terminal equipment.

- Existing Circuit Rating (SN / SE): 166 / 210
- Existing Conductor Rating (SN / SE): 232 / 282
- Length of Line (miles): 7.6
- Identified Structures (end of life / total): 71/80 (88% Failure Rate)



JCPL Transmission Zone M-3 Process
Deep Run – Englishtown 115 kV DRE2 Line, NJ

Need number: JCPL-2023-056

Process Stage: Solution Meeting –SRRTEP-MA – 05/14/2026

Proposed Solution:
Deep Run - Englishtown 115 kV DRE2 Line Rebuild

Rebuild the Englishtown - Deep Run 115 kV DRE2 Line using new conductor. At Englishtown Substation, replace relays and substation conductor. At Deep Run Substation, replace relays and substation conductor.

Ratings:

Deep Run - Englishtown 115 kV DRE2 Line

- Before Proposed Solution: 176 / 223 / 227 / 286 MVA (SN/SE/WN/WE)
- After Proposed Solution: 373 / 430 / 374 / 452 MVA (SN/SE/WN/WE)

Alternatives Considered:
Maintain line in existing condition with risk of failure due to equipment deterioration.

Estimated Project Cost:	$36.34M
Projected In-Service:	05/18/2029
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

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
Deep Run – Englishtown 115 kV DRE1 Line, NJ

Need Number: JCPL-2023-066

Process Stage: Solution Meeting – SRRTEP-MA – 05/14/2026

Previously Presented: Need Meeting – SRRTEP-MA – 11/16/2023

Project Driver:
Equipment Material Condition, Performance and Risk

Specific Assumption Reference:

- Line Condition Rebuild/Replacement
  - Age/condition of wood pole transmission line structures
  - Age/condition of transmission line conductors
- System Performance Projects
  - Substation/line equipment limits

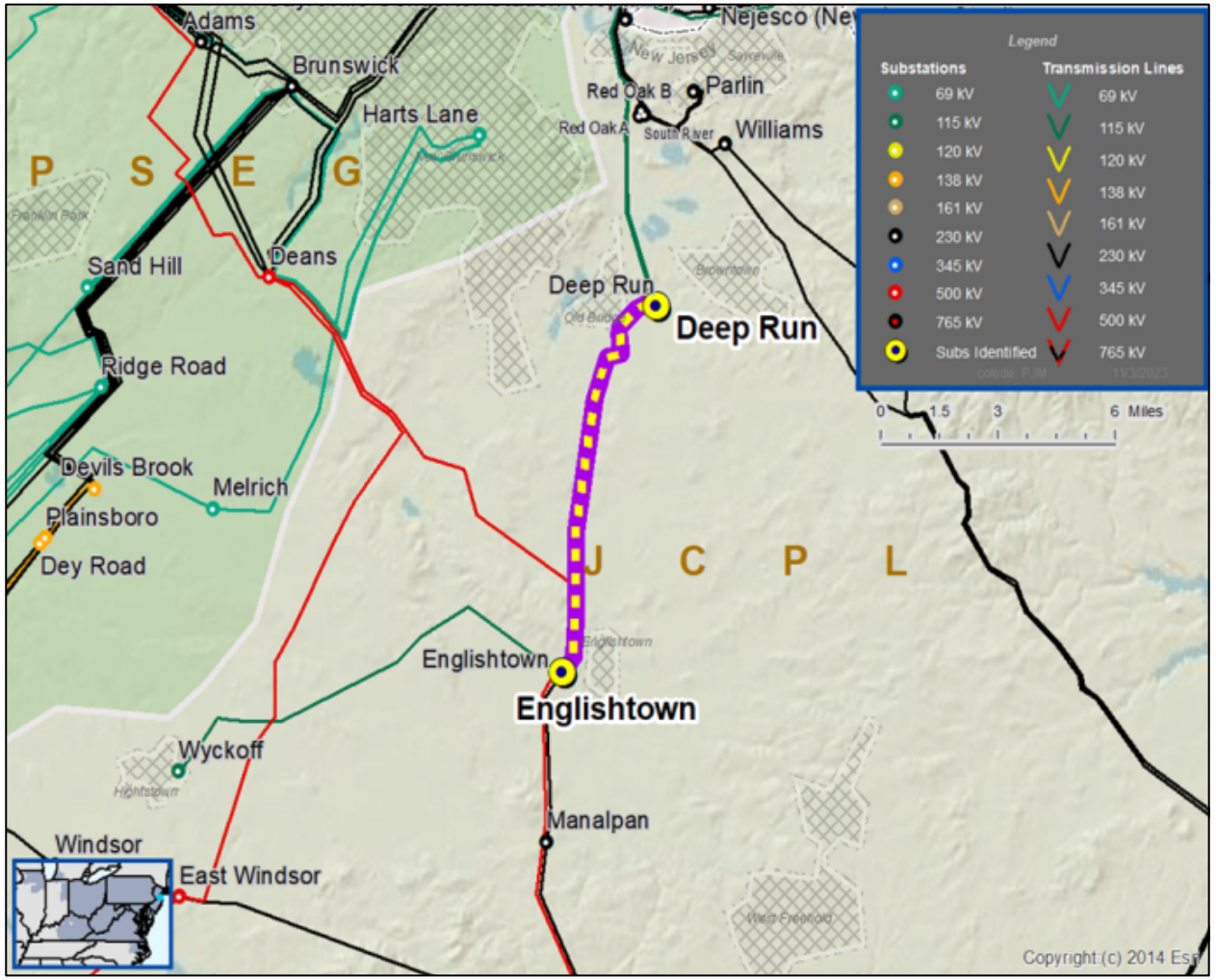
Problem Statement:

Both Deep Run – Englishtown 115 kV DRE1 and DRE2 lines have structures with an average age of 55+ years. Upon visual inspection, 88-91% fail inspection due to rot/decay and woodpecker damage.

Line sections are exhibiting deterioration and increasing maintenance needs.

DRE1 Transmission line ratings are limited by terminal equipment.

- Existing Circuit Rating (SN / SE): 176 / 223
- Existing Conductor Rating (SN / SE): 232 / 282
- Length of Line (miles): 7.6
- Identified Structures (end of life / total): 73/80 (91% Failure Rate)



JCPL Transmission Zone M-3 Process
Deep Run – Englishtown 115 kV DRE1 Line, NJ

Need number: JCPL-2023-066

Process Stage: Solution Meeting –SRRTEP-MA – 05/14/2026

Proposed Solution:
Deep Run - Englishtown 115 kV DRE1 Line Rebuild

Rebuild the Englishtown - Deep Run 115 kV DRE1 Line using new conductor. At Englishtown Substation, replace relays and substation conductor. At Deep Run Substation, replace relays and substation conductor.

Ratings:

Deep Run - Englishtown 115 kV DRE1 Line

- Before Proposed Solution: 176 / 223 / 227 / 279 MVA (SN/SE/WN/WE)
- After Proposed Solution: 373 / 430 / 374 / 452 MVA (SN/SE/WN/WE)

Alternatives Considered:
Maintain line in existing condition with risk of failure due to equipment deterioration.

Estimated Project Cost:	$38.88M
Projected In-Service:	05/19/2028
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

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

Appendix

High level M-3 Meeting Schedule

Assumptions

Activity	Timing
Posting of TO Assumptions Meeting information	20 days before Assumptions Meeting
Stakeholder comments	10 days after Assumptions Meeting

Needs

Activity	Timing
TOs and Stakeholders Post Needs Meeting slides	10 days before Needs Meeting
Stakeholder comments	10 days after Needs Meeting

Solutions

Activity	Timing
TOs and Stakeholders Post Solutions Meeting slides	10 days before Solutions Meeting
Stakeholder comments	10 days after Solutions Meeting

Submission of Supplemental Projects & Local Plan

Activity	Timing
Do No Harm (DNH) analysis for selected solution	Prior to posting selected solution
Post selected solution(s)	Following completion of DNH analysis
Stakeholder comments	10 days prior to Local Plan Submission for integration into RTEP
Local Plan submitted to PJM for integration into RTEP	Following review and consideration of comments received after posting of selected solutions

Revision History

05/04/2026 – V1 – Original version posted to pjm.com
05/06/2026 – V2 – Revised ratings for Solutions JCPL-2023-056 and JCPL-2023-066