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
Flanders - Pohatcong Mountain 34.5 kV R772 Line, NJ

Need Number: JCPL-2026-020

Process Stage: Need Meeting – SRRTEP-MA – 06/16/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

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

Problem Statement:

The Flanders - Pohatcong Mountain 34.5 kV R772 Line was constructed approximately 67 years ago and is approaching and of life. It is approximately 21 miles long with 524 wood and five steel/lattice transmission line structures.

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

- 38 structures require repair due to deterioration
- 241 structures require replacement due to deterioration
- 448 structures require repairs to insulators and related hardware
- 328 structures failed inspection due to sound test, woodpecker damage, top rot, decay, cracking, without grounding system and/ or delamination of cross-arms.

In the last five years, the line has had 19 unscheduled, sustained outages.

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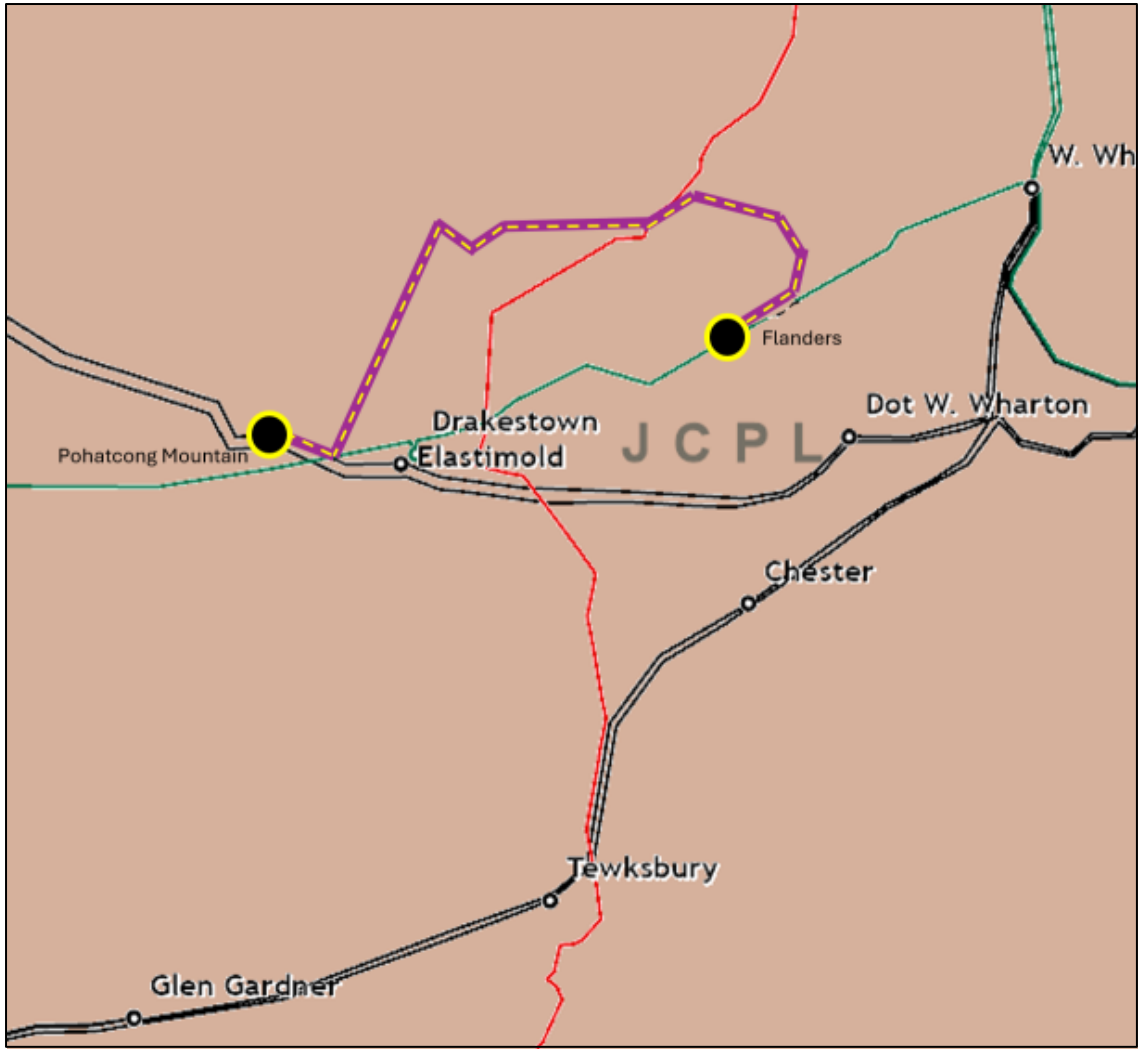

Need Number: JCPL-2026-020

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

Existing Ratings:

Facility	Existing Overall Facility Ratings MVA (SN/SE/WN/WE)	Existing Line Conductor Ratings MVA (SN/SE/WN/WE)
Flanders - Bud Lake SW PT 34.5 kV Line	39 / 50 / 39 / 50	55 / 79 / 81 / 90
Bud Lake SW PT - Netcong 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Bud Lake SW PT - Saxton Falls 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Saxton Falls - Panther Valley 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Panther Valley - Allamuchy 34.5 kV Line	44 / 53 / 50 / 63	44 / 53 / 50 / 63
Panther Valley - Hackettstown Hosp 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Saxton Falls R Tap - Saxton Falls 34.5 kV Line	26 / 33 / 37 / 41	39 / 48 / 45 / 56
Hackettstown Hosp TP - Hackettstown Tap 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Hackettstown Hosp TP - Hackettstown Hosp 34.5 kV Line	26 / 33 / 37 / 41	46 / 58 / 46 / 58

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Need Number: JCPL-2026-020

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

Existing Ratings:

Facility	Existing Overall Facility Ratings MVA (SN/SE/WN/WE)	Existing Line Conductor Ratings MVA (SN/SE/WN/WE)
Hackettstown Tap - Hackettstown 34.5 kV Line	39 / 48 / 45 / 56	39 / 48 / 45 / 56
Hackettstown - Pohatcong Mountain 34.5 kV Line	42 / 48 / 48 / 48	44 / 53 / 50 / 63
Hackettstown Tap- M&M- MARS 34.5 kV Line	15 / 18 / 15 / 18	15 / 18 / 15 / 18

JCPL Transmission Zone M-3 Process
Cookstown- Windsor 34.5 kV H60 Line, NJ

Need Number: JCPL-2026-021

Process Stage: Need Meeting – SRRTEP-MA – 06/16/2026

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption References:

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

Problem Statement:

The Cookstown- Windsor 34.5 kV H60 Line was constructed approximately 40 years ago and is approaching end of life. It is approximately 20 miles long with 502 wood pole transmission line structures.

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

- 245 structures failed inspection due to sound, woodpecker damage, top rot, decay, cracking, and/or delamination of cross-arms.

In the last five years, the line has had 15 unscheduled, sustained outages.

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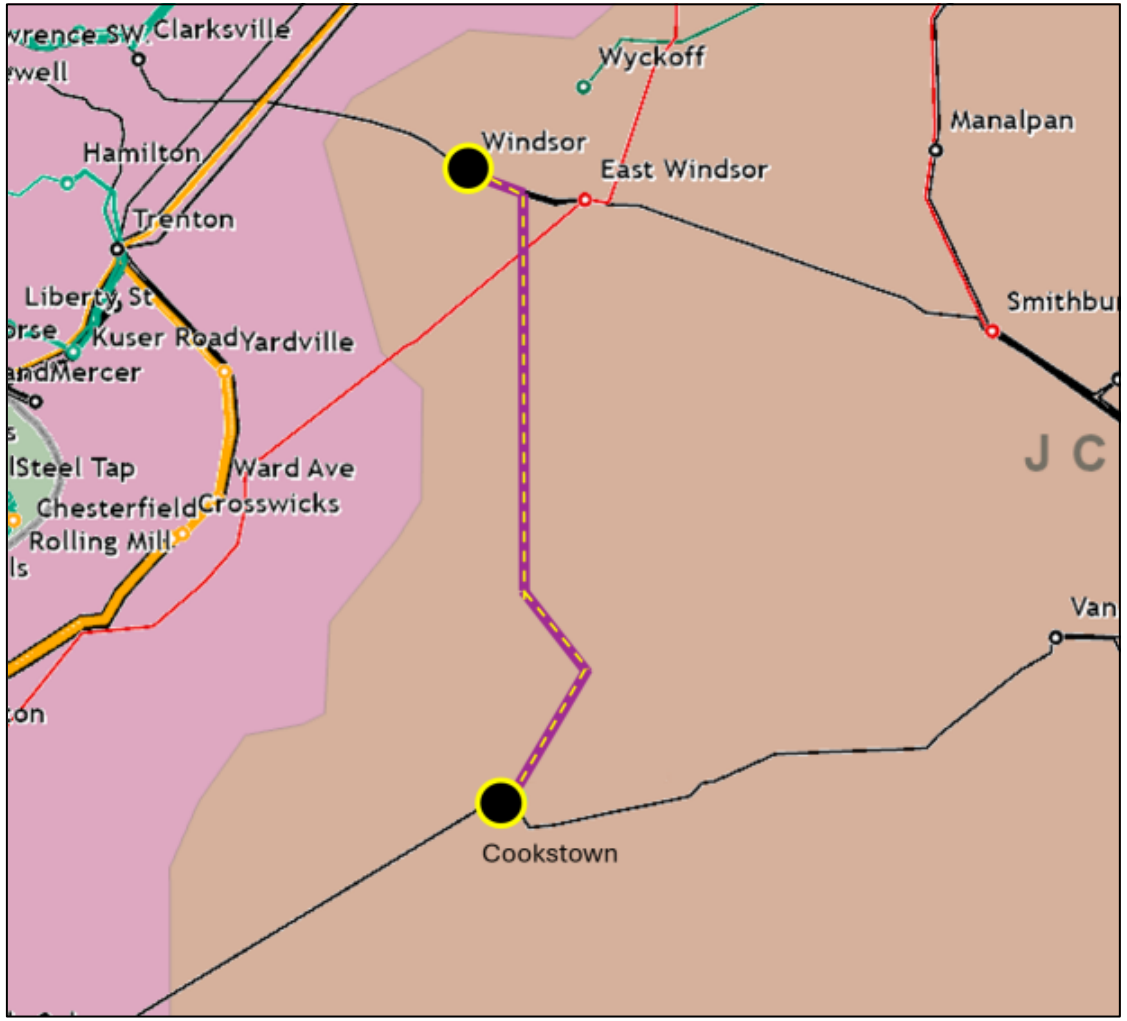


JCPL Transmission Zone M-3 Process
Cookstown- Windsor 34.5 kV H60 Line, NJ

Need Number: JCPL-2026-021

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

One line is limited by terminal equipment.

Facility	Existing Overall Facility Ratings MVA (SN/SE/WN/WE)	Existing Line Conductor Ratings MVA (SN/SE/WN/WE)
Cookstown - Great Adventure Swpt 34.5 kV Line	41 / 50/ 48 / 60	
Great Adventure Swpt - Plumstead Battery Tap 34.5 kV Line	44 / 53 / 50 / 63	
Great Adventure - Plumstead Battery Tap 34.5 kV Line	44 / 53 / 50 / 63	
Great Adventure Swpt - Hornerstown 34.5 kV Line	44 / 53 / 50 / 63	
Hornerstown- Upper Free Solar Tap 34.5 kV Line	41 / 50 / 48 / 60	
Upper Free Solar Tap- New Canton Tap 34.5 kV Line	41 / 50 / 48 / 60	
New Canton Tap- Windsor 34.5 kV Line	65 / 65 / 65 / 65	70 / 85 / 79 / 100

JCPL Transmission Zone M-3 Process
Customer Connection - Larrabee-Point Pleasant No. 2 34.5 kV R44 Line, NJ

Need Number: JCPL-2026-023

Process Stage: Need Meeting – SRRTEP-MA – 06/16/2026

Project Driver:

Customer Service

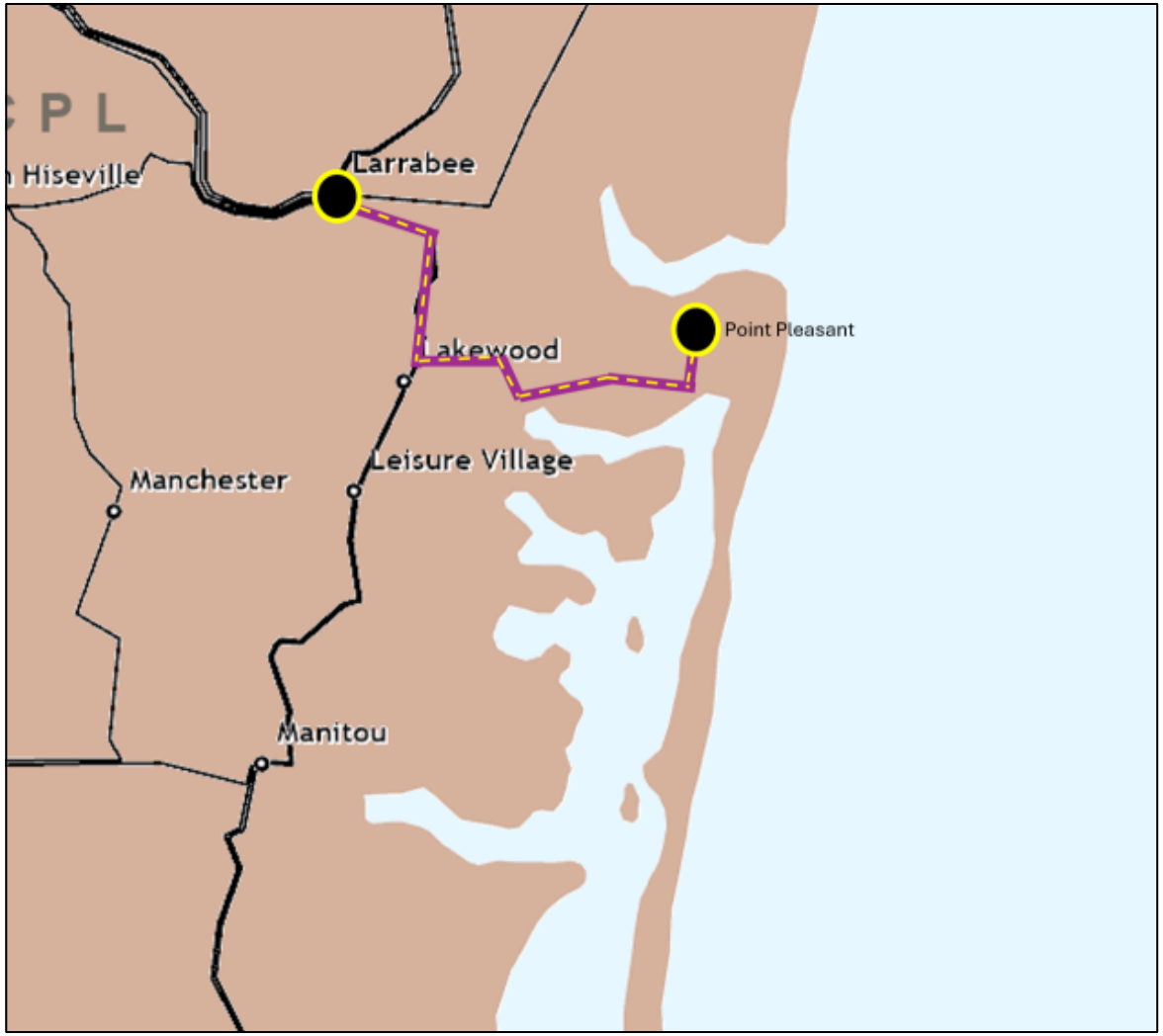
Specific Assumption References:

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

Problem Statement:

An existing customer requested a 34.5 kV net metering connection with solar of approximately 0.66 MW at the existing Ocean Medical 34.5 kV tap site on the Larrabee-Point Pleasant No. 2 34.5 kV R44 Line.

Requested in-service date is 12/31/2027.



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
Highlands-Long Branch 34.5 kV K89 Line Rebuild, NJ

Need Number: JCPL-2019-025

Process Stage: Solution Meeting – SRRTEP-MA – 06/16/2026

Previously Presented: Need Meeting – SRRTEP-MA – 03/25/2019

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

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

Problem Statement:

Line sections are exhibiting deterioration, increasing maintenance needs. Transmission line is approaching end of life.

Transmission line ratings are limited by terminal equipment.

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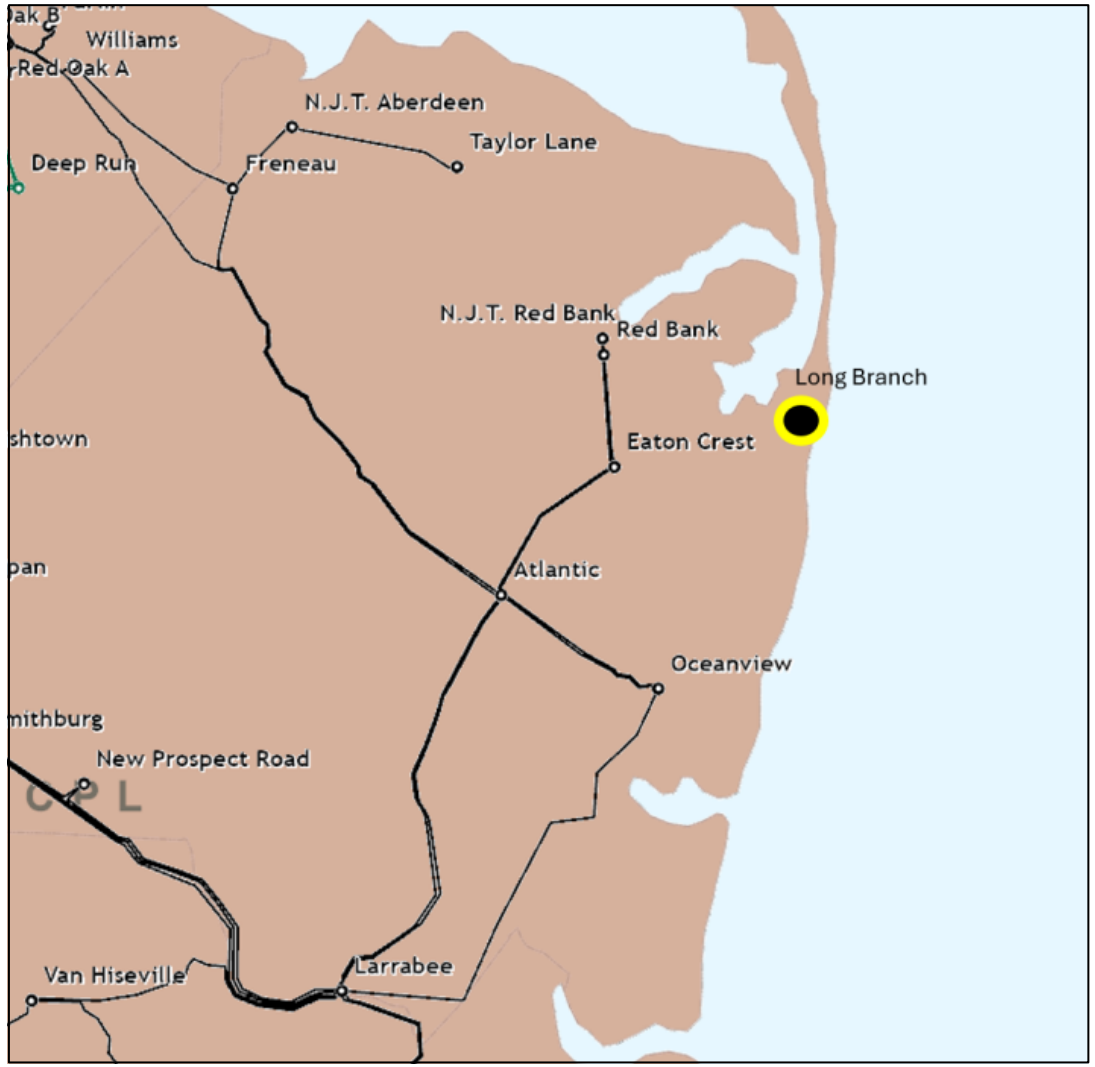


Need Number: JCPL-2019-025

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

JCPL-2019-	Transmission Line / Substation Locations	Existing Circuit Rating (SN / SE)	Existing Conductor Rating (SN / SE)	Limiting Terminal Equipment	Length of Line (miles)	Identified Structures (end of life / total)	Failure reasons
025	Highlands – Sandy Hook 34.5 kV Line	37 / 38	37 / 38	-	1.1	182 / 257 (71% Failure Rate)	Age, bad/cut/missing grounds, rot/decay, woodpecker holes, etc.
	Sandy Hook Switch Point – Sandy Hook 34.5 kV Line	26 / 33	37 / 38	Substation Conductor	0.1		
	Sandy Hook Switch Point – Sea Bright Switch Point 34.5 kV Line	37 / 38	37 / 38	-	2.4		
	Sea Bright Switch Point – Monmouth Beach 34.5 kV Line	35 / 38	35 / 38	-	2.0		
	Monmouth Beach – Long Branch 34. 5 kV Line	34 / 38	34 / 38	-	2.2		

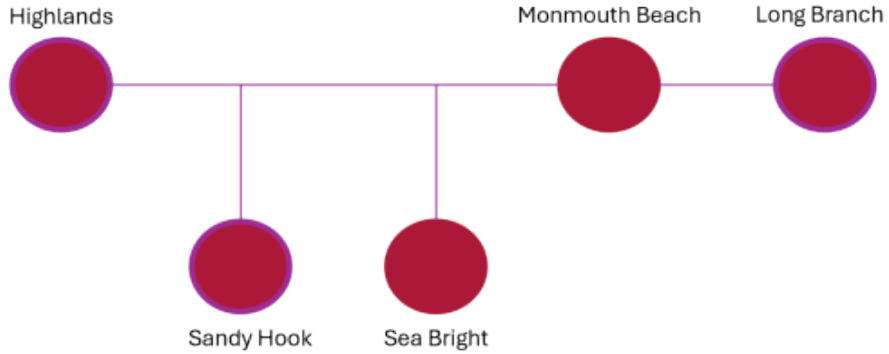
JCPL Transmission Zone M-3 Process
Highlands-Long Branch 34.5 kV K89 Line Rebuild, NJ

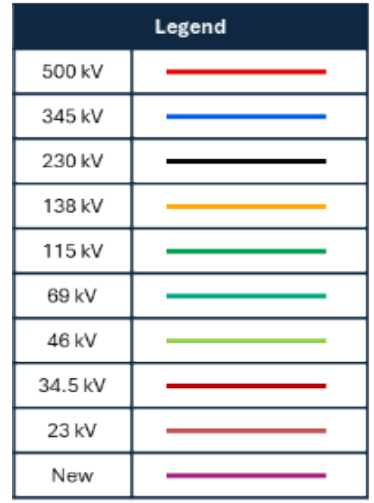
Need number: JCPL-2019-025

Process Stage: Solution Meeting –SRRTEP-MA – 06/16/2026

Proposed Solution:
Highlands-Long Branch 34.5 kV K89 Line Rebuild

- Rebuild 7.8 miles of the Highlands - Long Branch 34.5 kV K89 Line with new conductor. Rebuild the taps to the existing customers at Sandy Hook and Sea Bright substations.
- At Highlands Substation: Replace one disconnect switch and upgrade substation conductor.
- At Long Branch Substation: Replace one disconnect switch and upgrade substation conductor.
- At Sandy Hook Substation: Replace one disconnect switch.





Ratings:

Transmission Line	Before Proposed Solution MVA (SN / SE / WN / WE)	After Proposed Solution MVA (SN / SE / WN/ WE)
Highlands - Sandy Hook SW 34.5 kV Line	37 / 38 / 42 / 42	55 / 67 / 63 / 79
Sandy Hook SW - Sandy Hook 34.5 kV Line	26 / 33 / 37 / 41	55 / 67 / 63 / 79
Sandy Hook SW - Sea Bright SW 34.5 kV Line	37 / 38 / 42 / 42	55 / 67 / 63 / 79
Sea Bright SW - Monmouth Beach 34.5 kV Line	35 / 38 / 35 / 42	55 / 67 / 63 / 79
Monmouth Beach - Long Branch 34.5kV Line	34 / 38 / 34 / 42	55 / 67 / 63 / 79
Sea Bright SW - Sea Bright 34.5 kV Line	37 / 38 / 42 / 42	55 / 67 / 63 / 79

JCPL Transmission Zone M-3 Process
Highlands-Long Branch 34.5 kV K89 Line Rebuild, NJ

Need number: JCPL-2019-025

Process Stage: Solution Meeting –SRRTEP-MA – 06/16/2026

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

Estimated Project Cost:	$28.27M
Projected In-Service:	03/11/2030
Project Status:	Conceptual
Model:	2024 RTEP model for 2029 Summer (50/50)

JCPL Transmission Zone M-3 Process
Allenhurst 34.5 kV Substation Breaker Replacements, NJ

Need Number: JCPL-2025-008

Process Stage: Solution Meeting – SRRTEP-MA – 06/16/2026

Previously Presented: Need Meeting – SRRTEP-MA – 12/11/2025

Project Driver:

Equipment Condition/Performance/Risk

Specific Assumption Reference:

- System Performance Global Factors
  - System reliability/performance
  - Substation/Line equipment limits
- Substation Condition Rebuild/Replacement
  - Age/condition of substation equipment
  - Circuit breakers and other fault interrupting devices

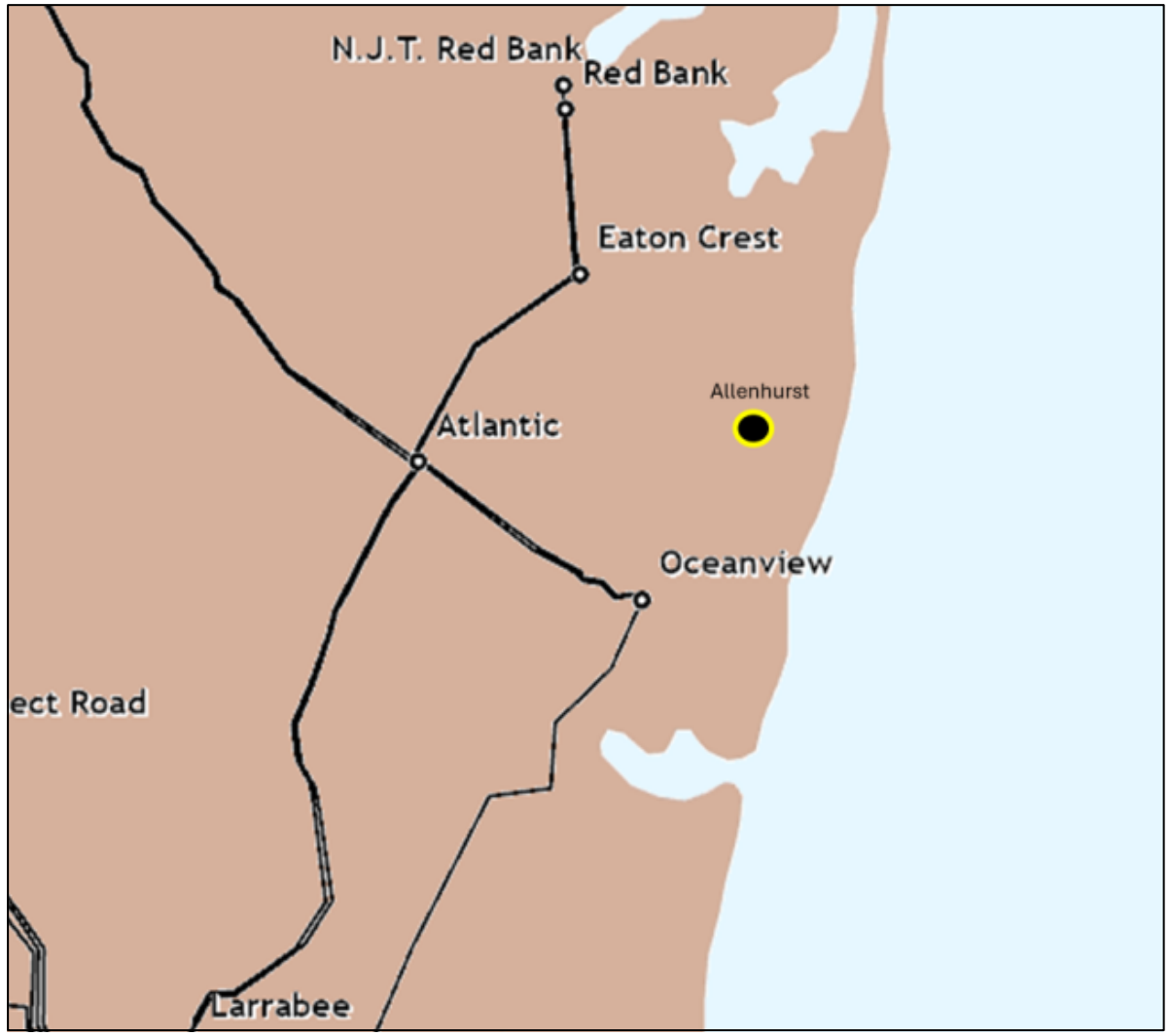
Problem Statement:

The existing Allenhurst Substation 34.5 kV oil circuit breakers H216 and V-74, associated disconnect switches and protective relaying are over 50 years old and are approaching end of life. Replacement components are difficult to source leading to non-standard repairs.

The Allenhurst - Oceanview 34.5 kV H216 Line is currently limited by the terminal equipment.

Allenhurst - Oceanview 34.5 kV H216 Line

- Existing Transmission Line Ratings: 44 / 48 / 48 / 48 MVA (SN/SE/WN/WE)
- Existing Conductor Ratings: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)



JCPL Transmission Zone M-3 Process
Allenhurst 34.5 kV Substation Breaker Replacements, NJ

Need number: JCPL-2025-008

Process Stage: Solution Meeting –SRRTEP-MA – 06/16/2026

Proposed Solution:

At Allenhurst Substation, replace 34.5 kV circuit breakers H216 and V-74 and associated disconnect switches, substation conductor, and relaying.

Ratings:

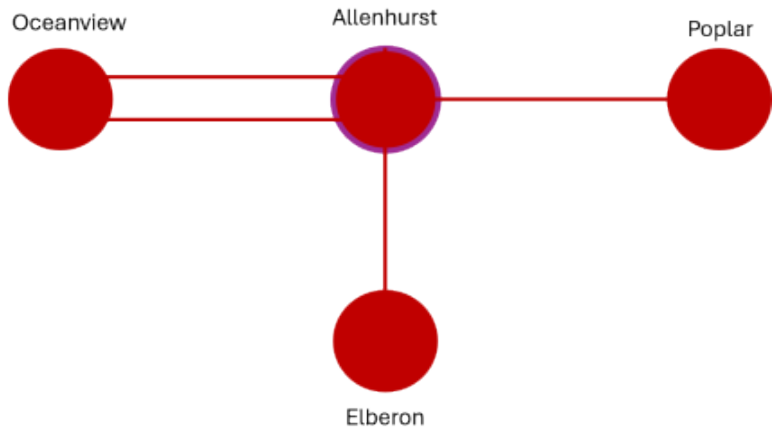
Allenhurst - Oceanview H216 34.5 kV Line

- Before Proposed Solution: 44 / 48 / 48 / 48 MVA (SN/SE/WN/WE)
- After Proposed Solution: 55 / 67 / 63 / 79 MVA (SN/SE/WN/WE)

Alternatives Considered:

Maintain existing condition with elevated risk of failure due to equipment deterioration.

Estimated Project Cost:	$3.31M
Projected In-Service:	12/31/2028
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

06/05/2026 – V1 – Original version posted to pjm.com