

Subregional RTEP Committee – Mid-Atlantic FirstEnergy Supplemental Projects

December 12, 2024

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

Need Number: ME-2024-024

Process Stage: Needs Meeting – 12/12/2024

Project Driver:

Operational Flexibility and Efficiency

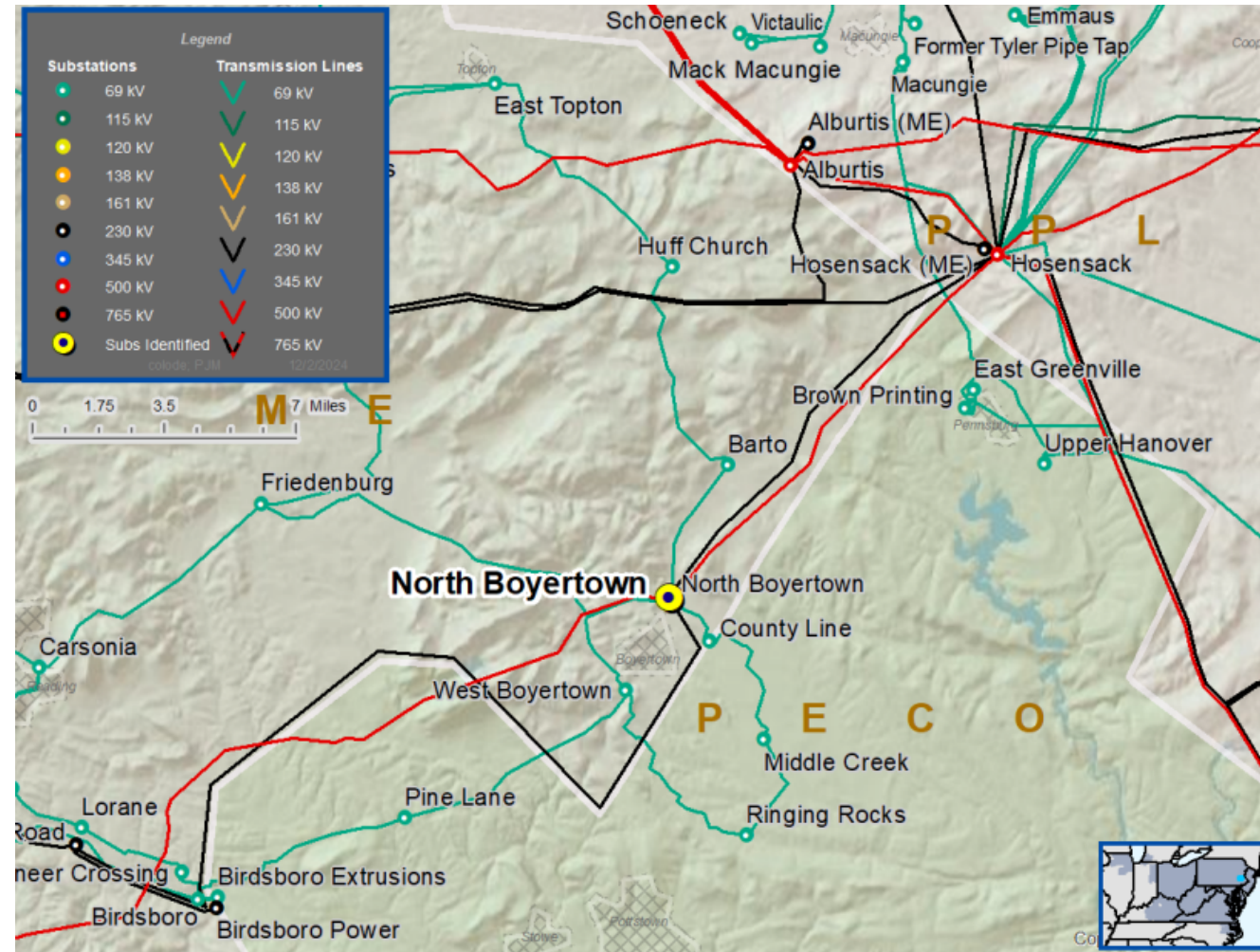
Specific Assumption Reference:

System Performance Projects Global Factors

- 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

Problem Statement:

A faulted 69 kV bus tie breaker at North Boyertown Substation can lead to a potential voltage collapse and severe overloads on the 69 kV transmission network resulting in a loss of service to approximately 107 MW of load and 23,000 customers.



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

Need Number: ME-2019-053

Process State: Solution Meeting – 12/12/2024

Previously Presented: Need Meeting – 06/28/2019

Project Driver:

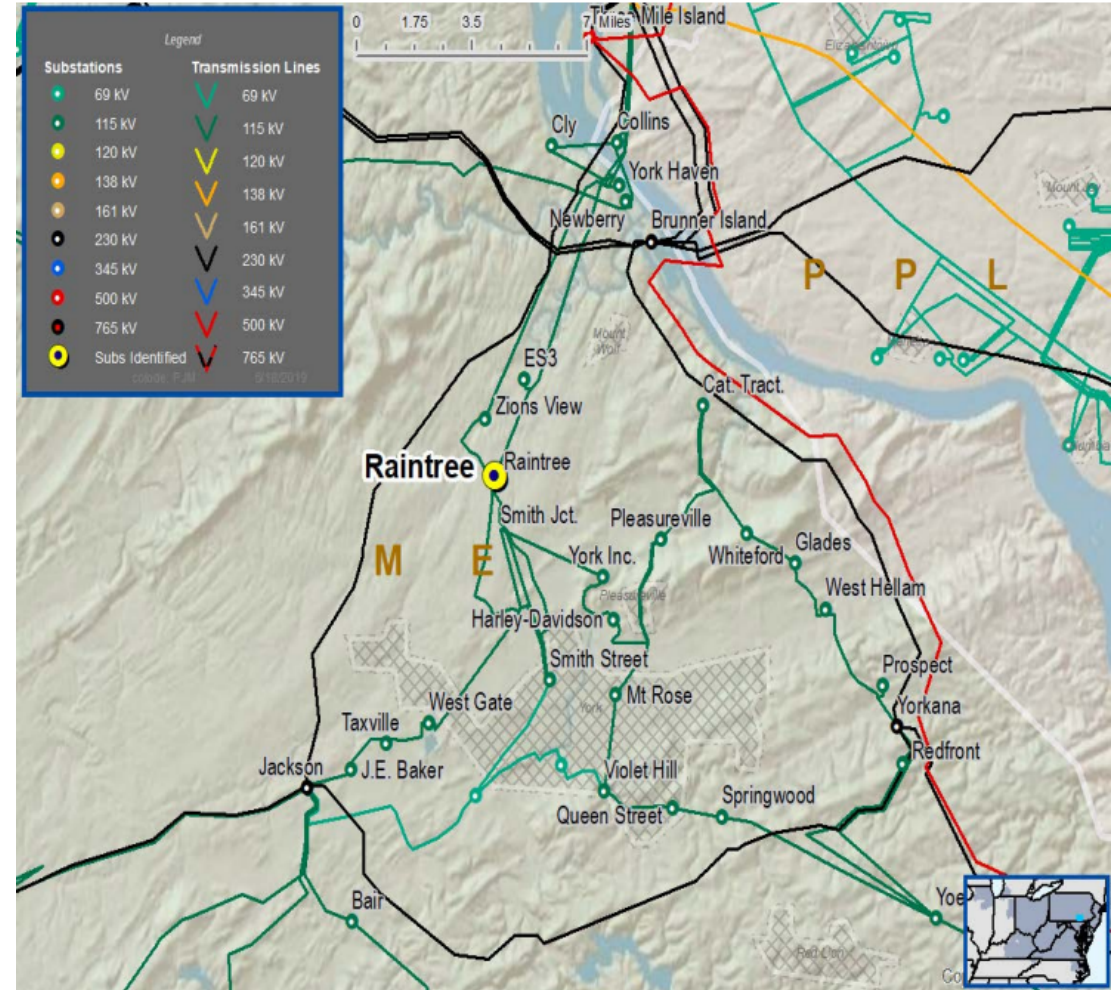
Customer Service

Specific Assumption Reference:

Customer request 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 115 kV service; anticipated load is 28 MVA; location is near the Raintree Substation



Need Number: ME-2019-053

Process State: Solutions Meeting – 12/12/2024

Proposed Solution:

- Construct a four-breaker 115 kV ring bus at Raintree Substation
- Loop the Middletown Junction – Smith Street 115 kV 978 Line into Raintree Substation
- At Raintree Substation
 - Install one control house
 - Install four 115 kV circuit breakers and associated disconnect switches
 - Install two standard transmission line relay panels
- At Middletown Junction Substation
 - Replace existing line relay panels
- At Willis Road (Smith Street) Substation
 - Replace one 115 kV circuit breaker and associated disconnect switches
 - Replace existing line relay panels

Alternatives Considered:

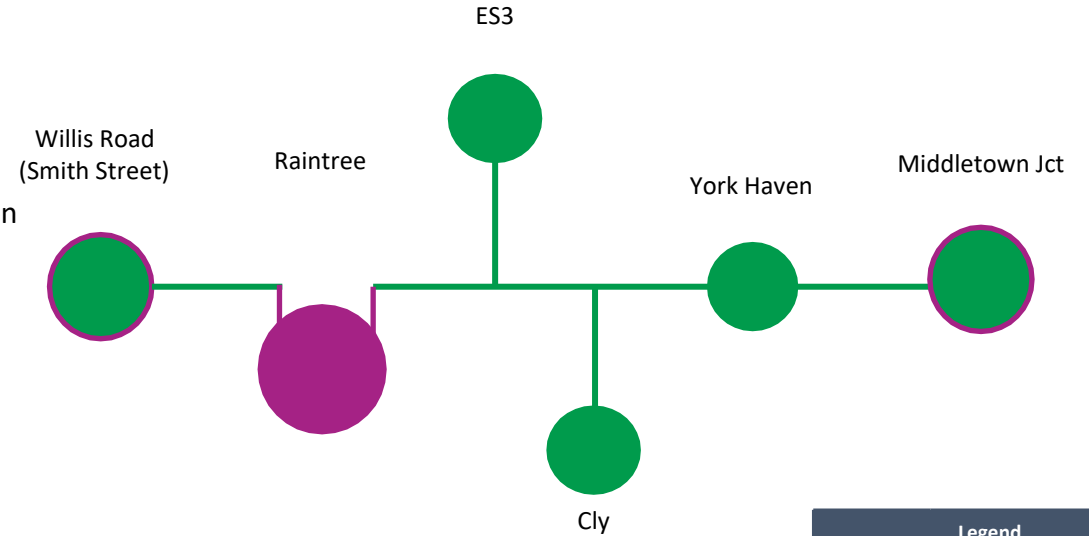
- No reasonable alternatives to serve the customers load due to proximity to the Middletown Junction – Smith Street 115 kV 978 Line.

Estimated Project Cost: \$12.5M

Projected In-Service: 12/31/2026

Project Status: Conceptual

Model: 2023 RTEP model for 2028 Summer (50/50)



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

Need Number: ME-2023-013

Process Stage: Solution Meeting – 12/12/2024

Previously Presented: Need Meeting – 11/16/2023

Project Driver:

Operational Flexibility and Efficiency

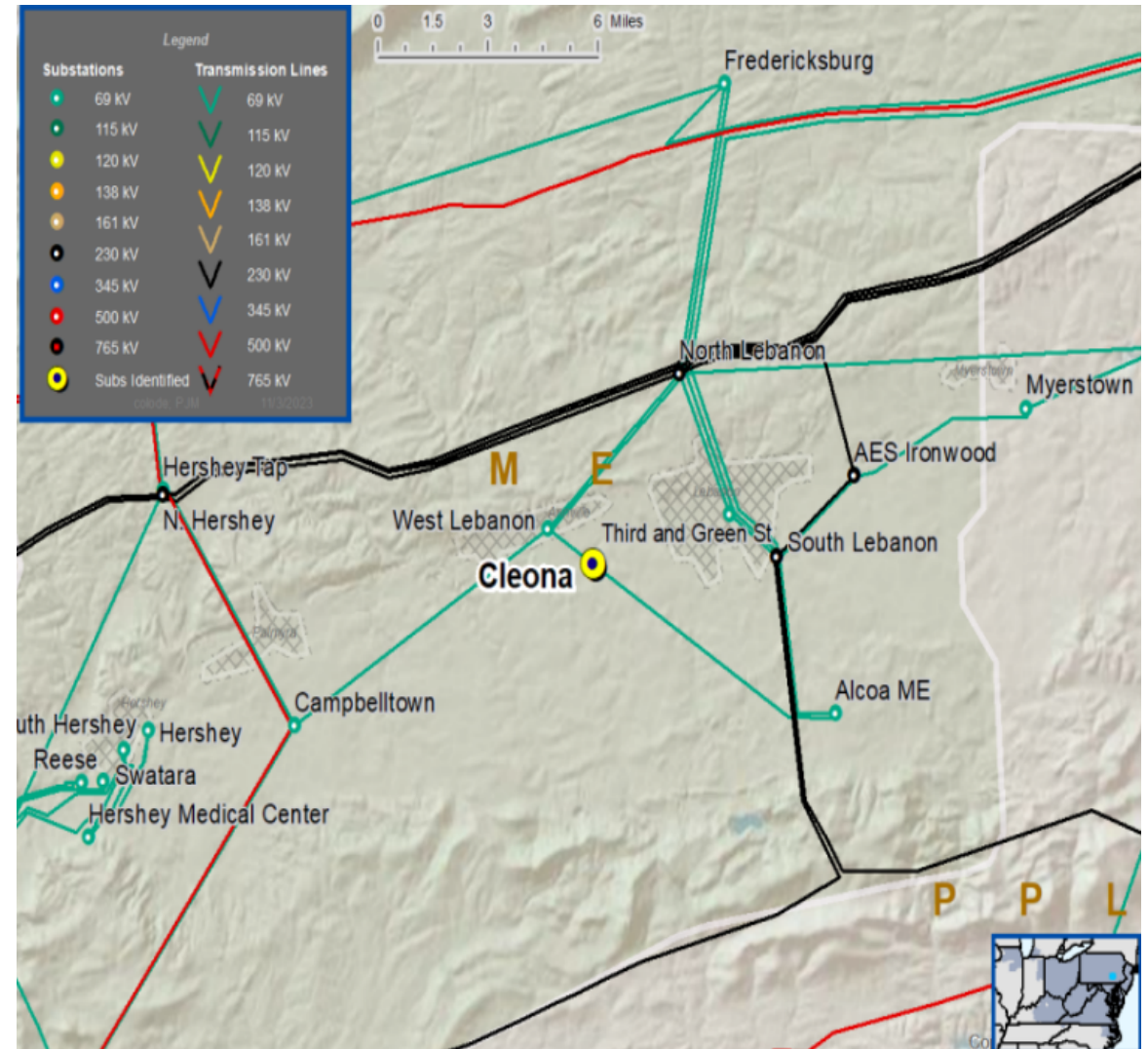
Specific Assumption Reference:

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

Problem Statement:

A fault on the North Lebanon – West Lebanon 69 kV Line, a fault on the 69 kV bus at Cleona Substation, or a fault on the Cleona No. 1 transformer results in the loss of Cleona Substation. Cleona Substation serves approximately 2,080 customers and 11 MW.



Need Number: ME-2023-013

Process State: Solutions Meeting – 12/12/2024

Proposed Solution:

- At Cleona Substation
 - Construct a three breaker 69 kV ring bus by installing three 69 kV circuit breakers and associated disconnect switches
 - Install three standard transmission line relay panels
 - Re-terminate the North Lebanon – West Lebanon 69 kV 94 Line into Cleona

Alternatives Considered:

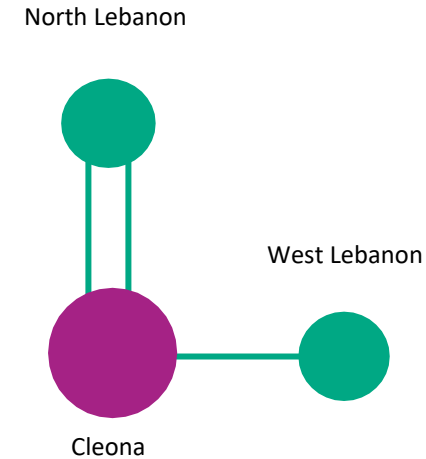
- Maintain existing condition and elevated risk of losing 11 MW and approximately 2,080 customers due to N-1 contingency scenarios.

Estimated Project Cost: \$9.5M

Projected In-Service: 6/8/2026

Project Status: Conceptual

Model: 2023 RTEP model for 2028 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

12/2/2024 – V1 – Original version posted to pjm.com