FirstEnergy – MetEd – 2025
Submission of Supplemental Projects for Inclusion in the Local Plan

Met-Ed Transmission Zone M-3 Process
Middletown Junction – Swatara Hill – Campbelltown 69 kV Line

Need Number: ME-2019-009
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan
Previously Presented: Solution Meeting 03/13/2025
Need Meeting 02/22/2019

Project Driver:

Equipment Condition/Performance/Risk

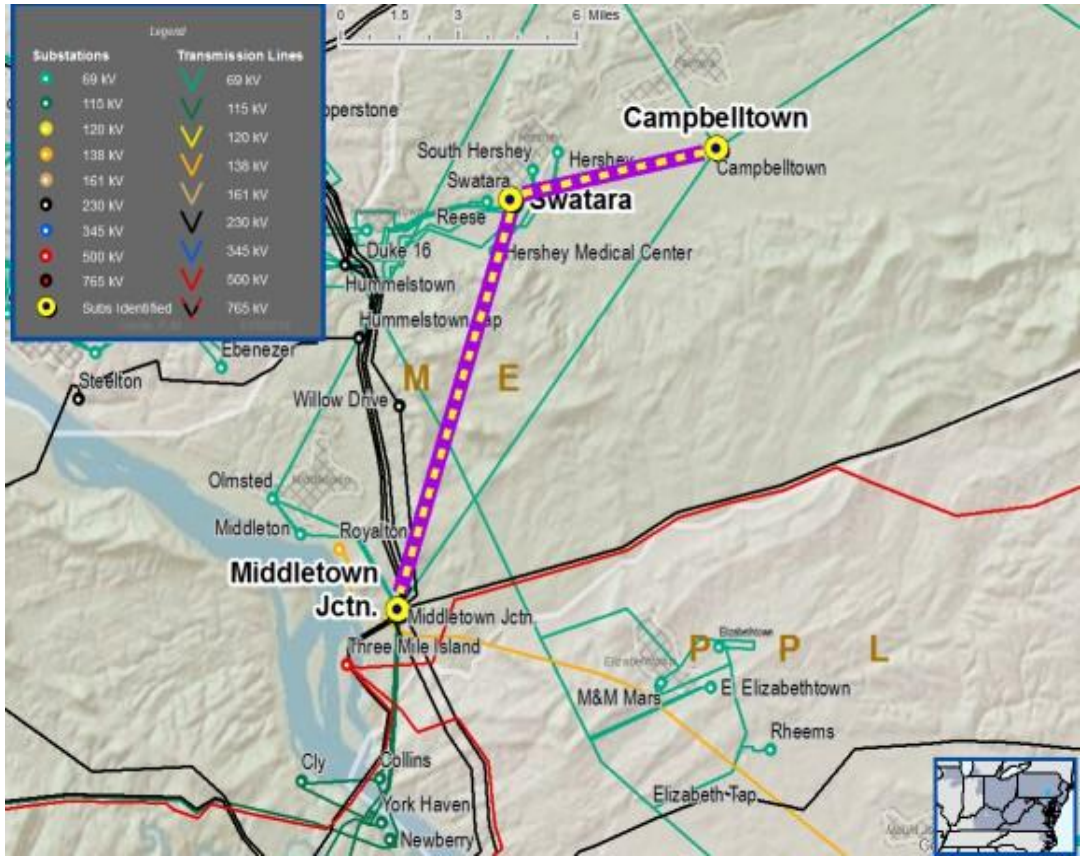
Specific Assumption References:

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.



ME-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
009	Campbelltown – Swatara Hill 69 kV Line	71 / 90	74 / 90	Substation Conductor	10.5	57 / 288 (20% Failure Rate)	Age, top rot, voids, woodpecker holes
	Swatara Hill – Middletown Junction 69 kV Line	71 / 91	121 / 150	Substation Conductor, Disconnect Switches	2.5		

Met-Ed Transmission Zone M-3 Process
Middletown Junction – Swatara Hill – Campbelltown 69 kV Line

Need number: ME-2019-009
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

Middletown Junction – Swatara Hill – Campbelltown 69 kV Line:

- Rebuild approximately 9 miles of Campbelltown – Middletown Junction 69 kV Line.

Middletown Junction 69 kV Substation:

- At Middletown Junction Review and revise relaying.

Campbelltown 69 kV Substation:

- At Campbelltown Substation Review and revise relaying.

Legend	
500 kV	
230 kV	
138 kV	
115 kV	
69 kV	
46 kV	
New	

Estimated Project Cost: $25.4 M
Projected In-Service: 12/31/2026
Supplemental Project ID: s3622.1

Met-Ed Transmission Zone M-3 Process
New Customer Connection

Need Number: ME-2019-053

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

Previously Presented: Solution Meeting – 12/12/2024
Need Meeting – 06/28/2019

Project Driver:

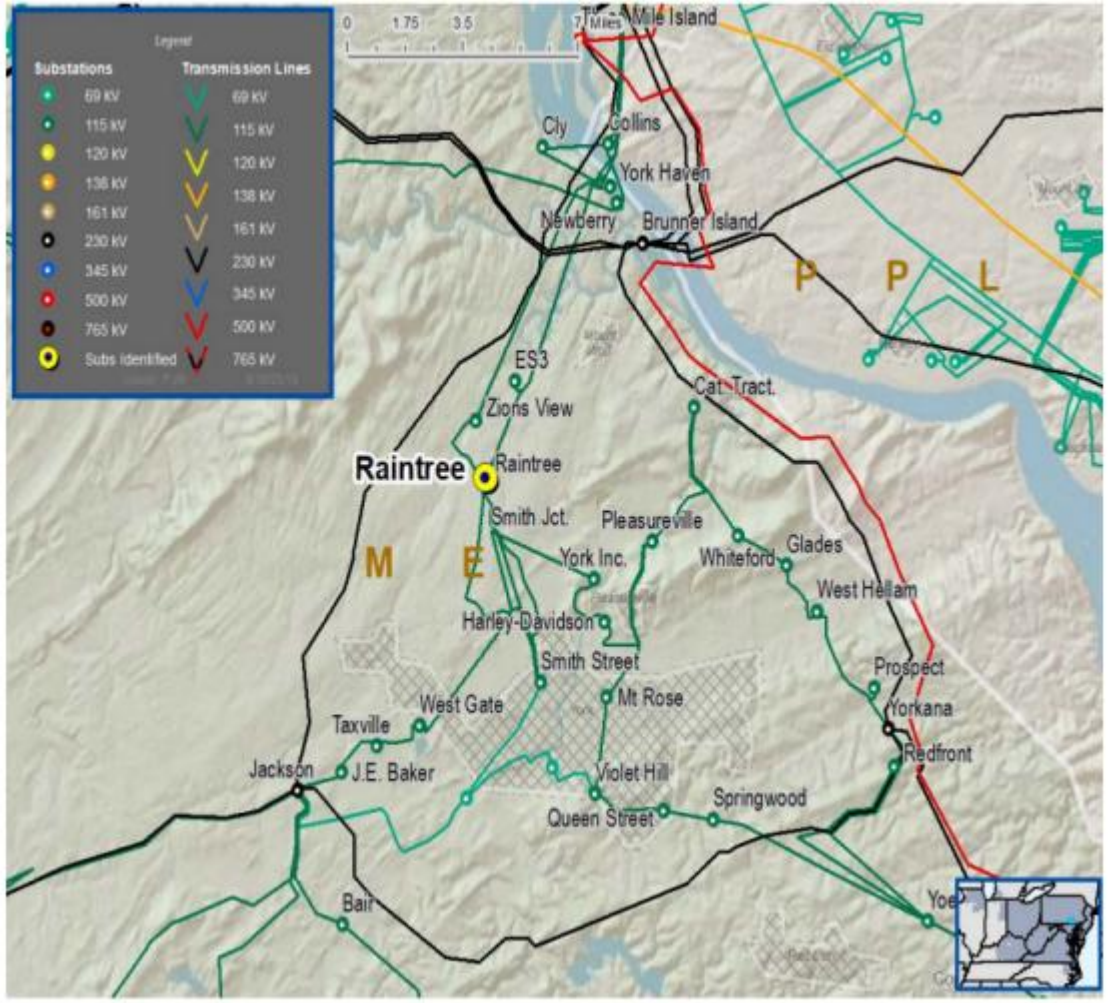
Customer Service

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



Met-Ed Transmission Zone M-3 Process
New Customer Connection

Need Number: ME-2019-053
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

- Construct a four-breaker 115 kV ring bus at Raintree Substation
- Remove existing temporary configuration connection at Raintree
- 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

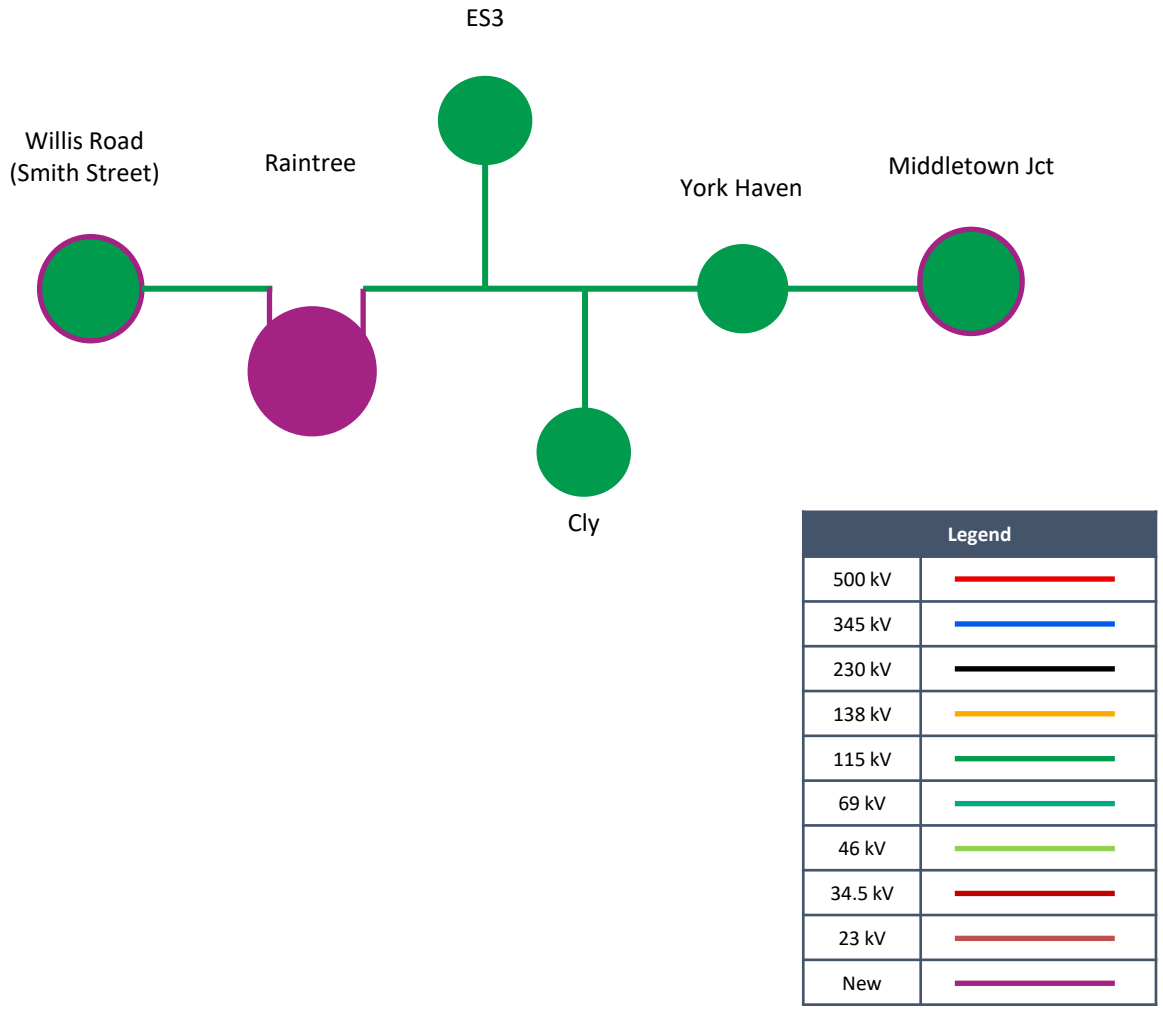
At Middletown Junction Substation

- 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

Estimated Project Cost: $12.5M
Projected In-Service: 12/31/2026
Supplemental Project ID: s3623.1



Met-Ed Transmission Zone M-3 Process
Cleona Substation

Need Number: ME-2023-013

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

Previously Presented: Solution Meeting – 12/12/2024
Need Meeting – 11/16/2023

Project Driver:

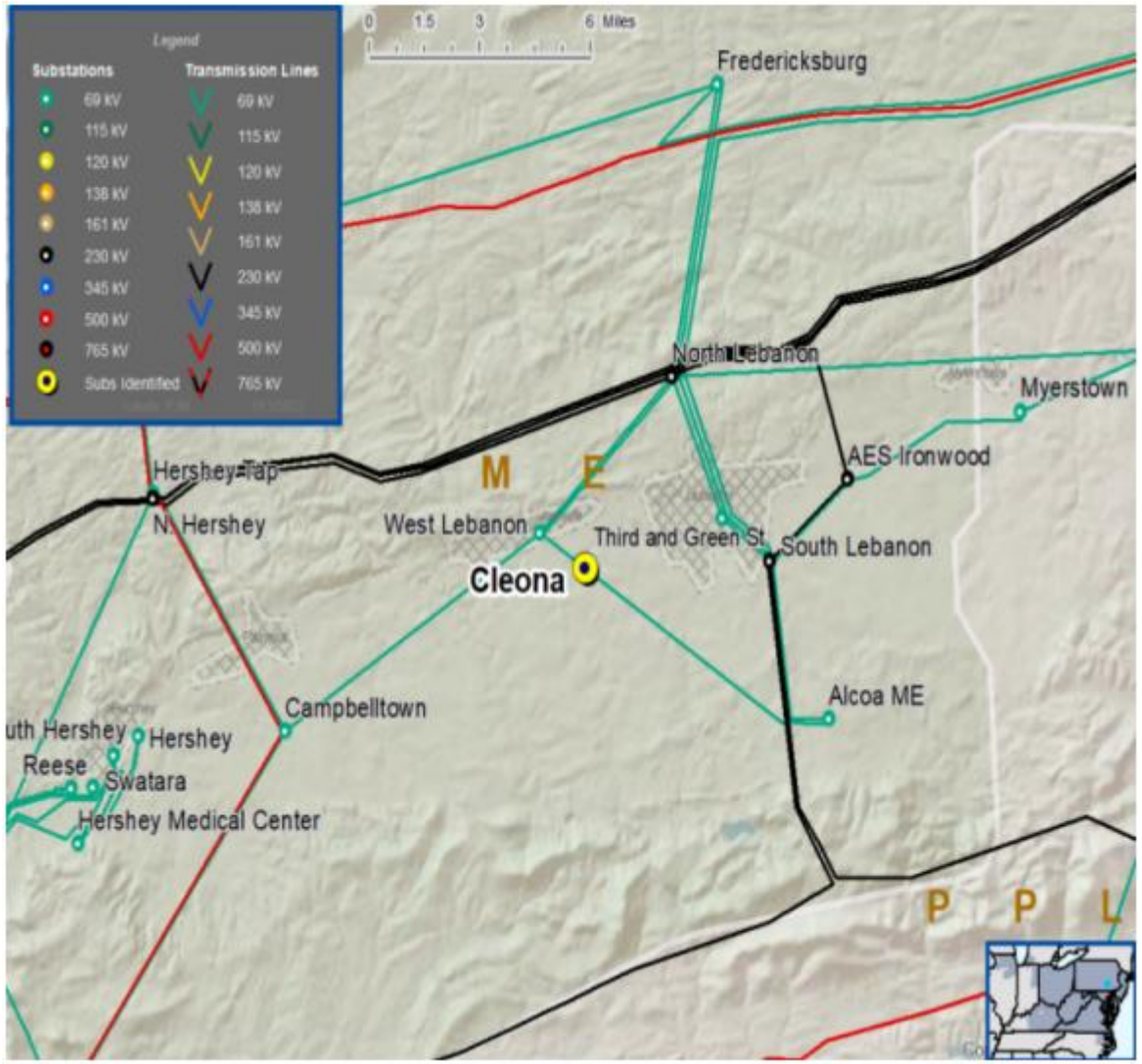
Operational Flexibility and Efficiency

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.



Met-Ed Transmission Zone M-3 Process
Cleona Substation

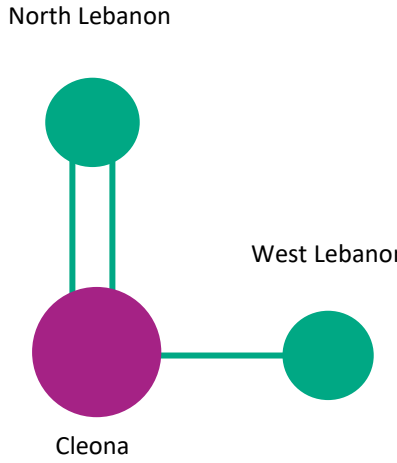
Need Number: ME-2023-013
Process State: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected 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

Estimated Project Cost: $9.5M
Projected In-Service: 6/8/2026
Supplemental Project ID: s3625.1



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

Met-Ed Transmission Zone M-3 Process
Mountain Substation

Need Number: ME-2023-017

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

Previously Presented: Solution Meeting – 08/15/2024
Need Meeting – 11/16/2023

Project Driver:

Operational Flexibility and Efficiency

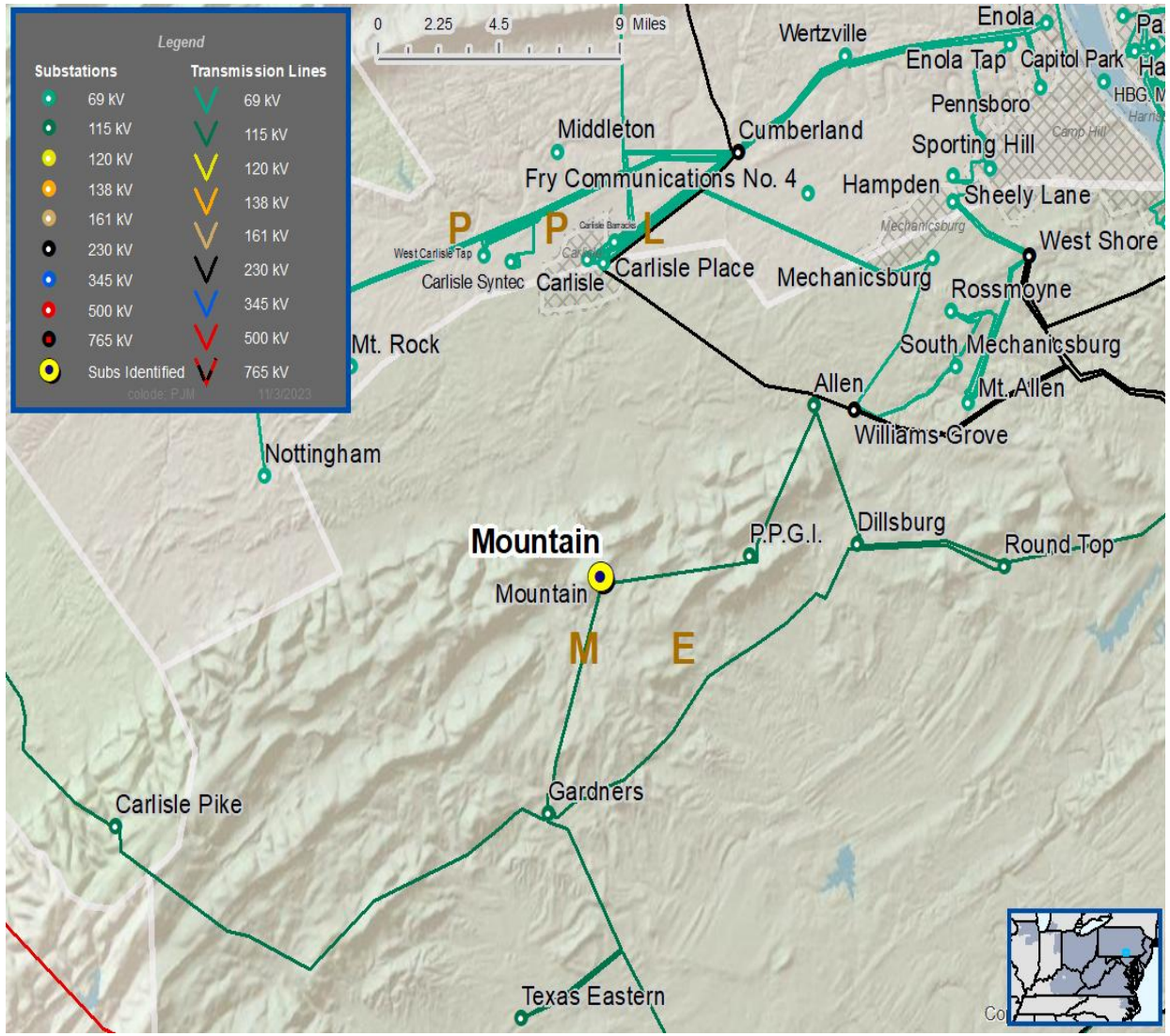
Specific Assumption Reference:

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:

Mountain Substation can outaged from a fault on the 115 kV bus, a fault on the No. 1 or No. 2 115-13.2 kV transformers, a fault on the Mountain CT transformer, or a stuck breaker on the PPGI or Gardners 115 kV line exits. Mountain Substation serves 7,320 customers and approximately 31.8 MW.



Met-Ed Transmission Zone M-3 Process
Mountain Substation

Need Number: ME-2023-017

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

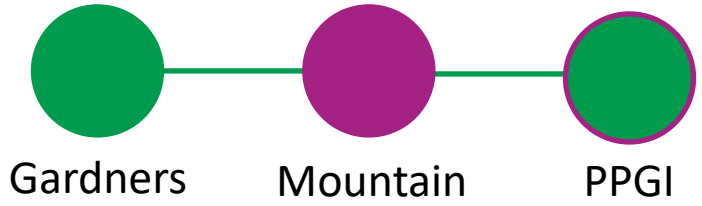
Selected Solution:

- Convert Mountain 115 kV into a six-breaker ring bus
- At PPGI, replace one 115 kV circuit breaker

Estimated Project Cost: $11.4M

Projected In-Service: 12/31/2026

Supplemental Project ID: s3605.1, s3605.2



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

Met-Ed Transmission Zone M-3 Process
North Hershey Substation

Need Number: ME-2023-022
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Previously Presented: Solution Meeting 11/6/2024
Needs Meeting 12/05/2023

Project Driver:

Operational Flexibility and Efficiency

Specific Assumption Reference:

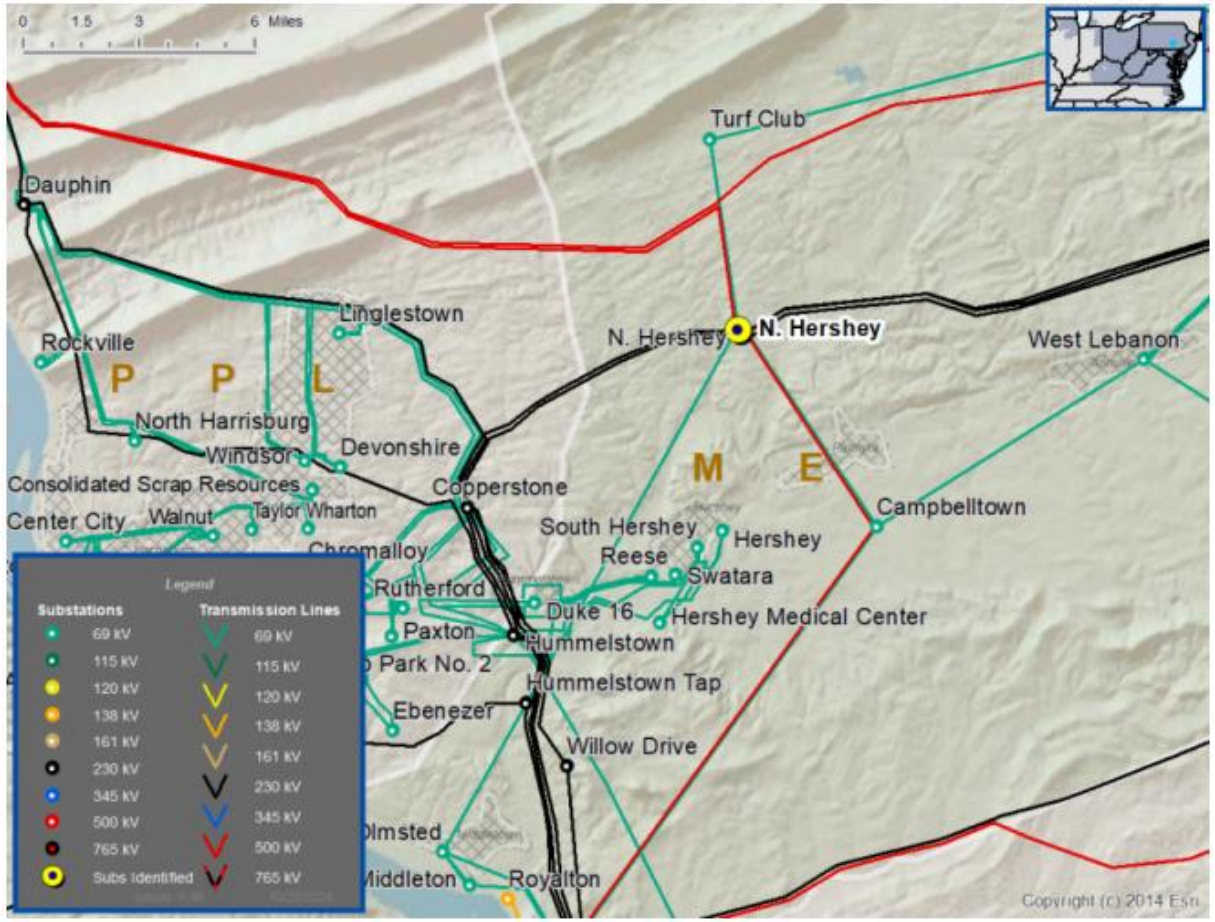
System Performance Projects

- 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:

Multiple stuck breaker contingencies at North Hershey Substation or a fault on the 69 kV bus at North Hershey Substation results in the loss of two 69 kV networked elements and one 230-69 kV transformer.

The N-1-1 loss of the 230-69 kV transformer at North Hershey Substation followed by a 69 kV outage causes low voltage at multiple 69 kV buses.



Met-Ed Transmission Zone M-3 Process
North Hershey Substation

Need Number: ME-2023-022
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

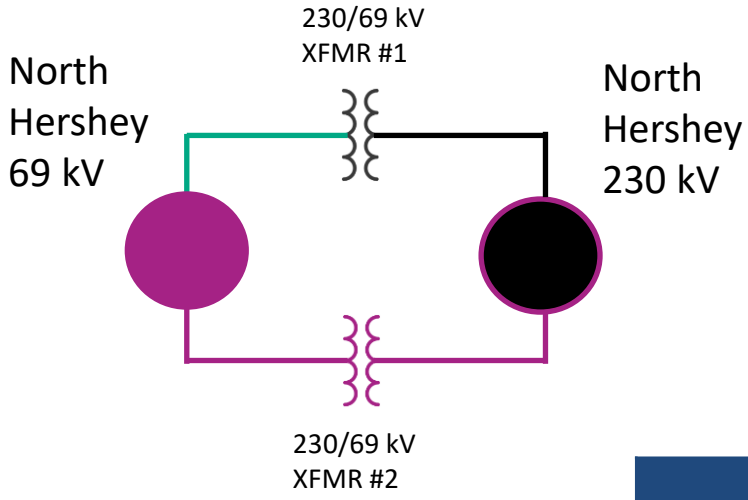
Selected Solution:

- Convert the 69 kV bus at North Hershey Substation into a four-breaker ring bus
- Install a 2nd 230-69 kV transformer at North Hershey Substation
- At North Hershey Substation:
  - Install one 230 kV, 3000 A circuit breaker and associated equipment
  - Install four 69 kV, 3000 A circuit breakers and associated equipment

New Transformer Ratings:

- 211 / 217 / 260 / 268 MVA (SN/SE/WN/WE)

Estimated Project Cost: $16.31M
Projected In-Service: 12/17/2027
Supplemental Project ID: s3624.1



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

Need Number: ME-2024-014
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan
Previously Presented: Solution Meeting 1/16/2025
Need Meeting 5/16/2024

Project Driver:

Operational Flexibility and Efficiency

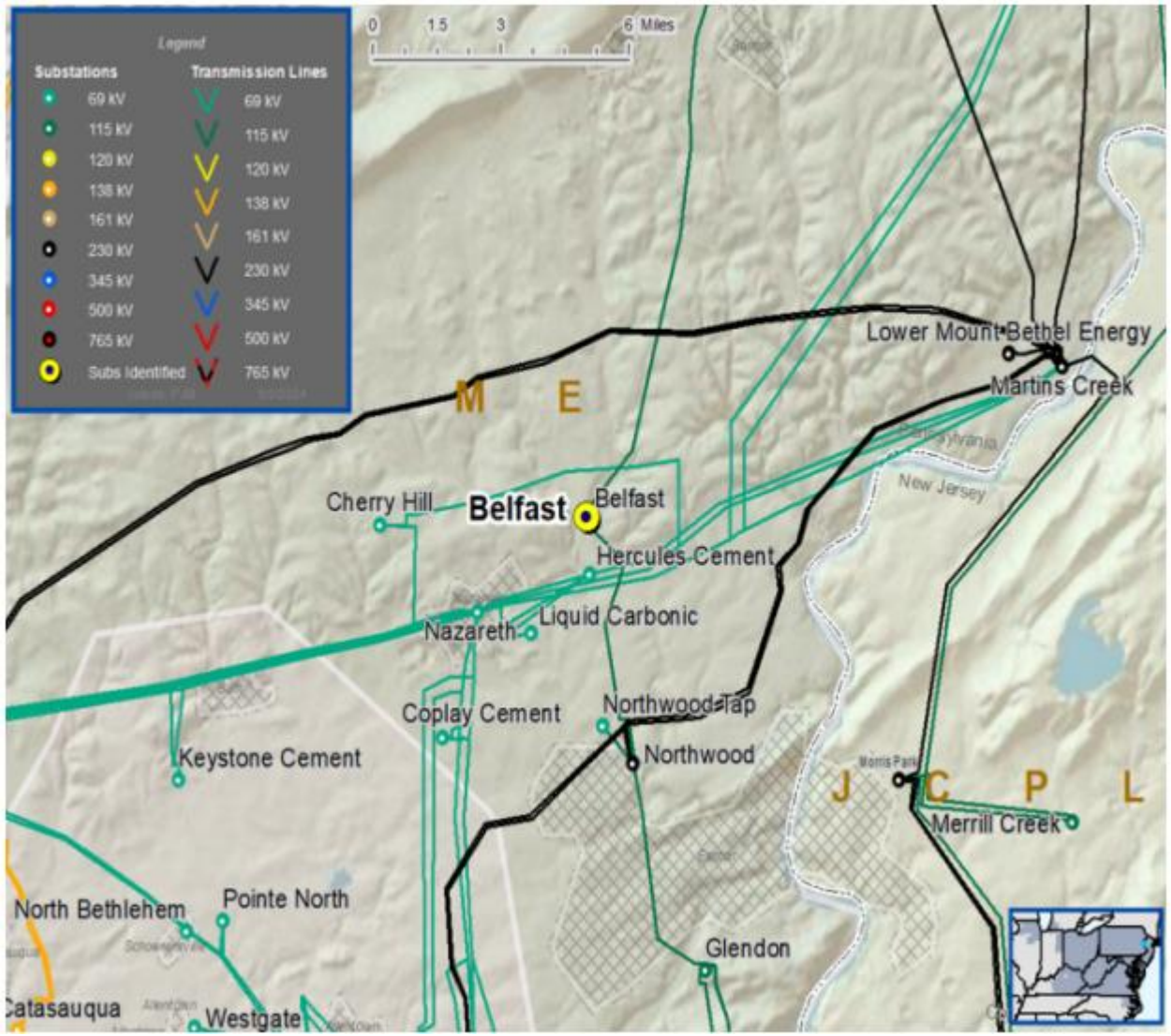
Specific Assumption Reference:

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:

Belfast Substation serves approximately 78 MW of load and 12,100 customers. A transformer fault, bus fault, or stuck breaker would result in a complete outage of the substation.

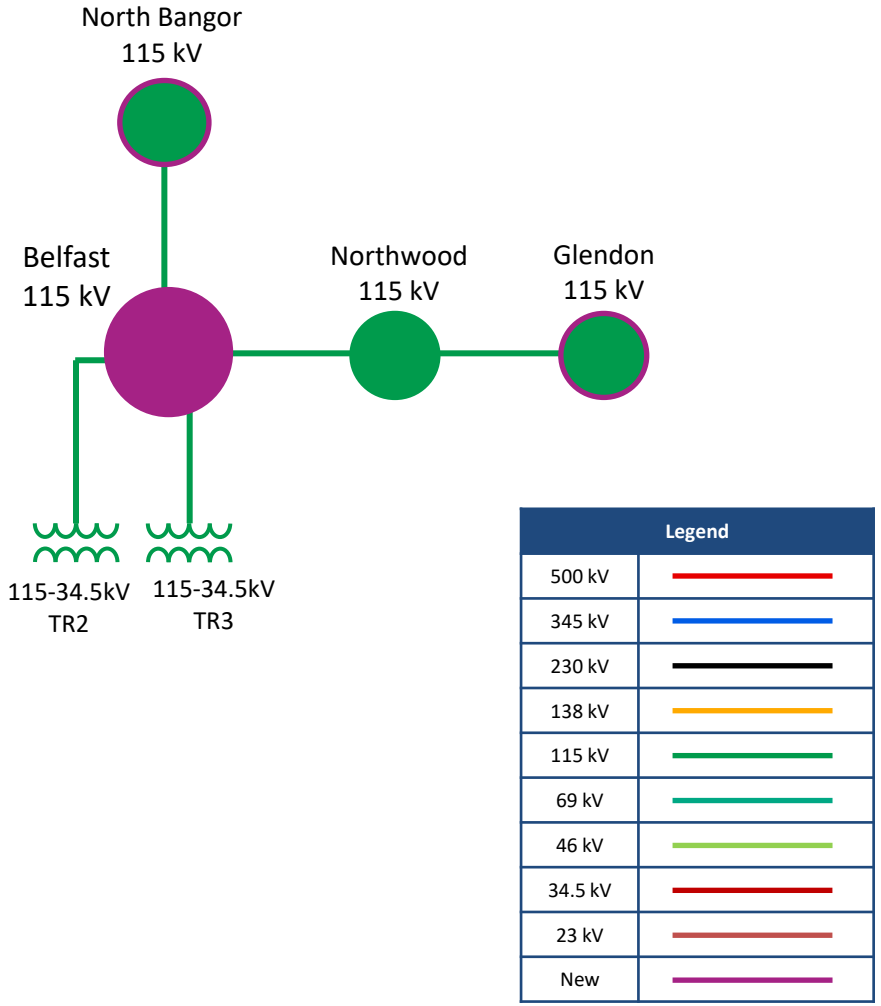


Need Number: ME-2024-014
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

- Construct a four breaker 115 kV ring bus at Belfast Substation:
  - Install four 115 kV circuit breakers, disconnect switches, line traps, and relaying.
  - Update relaying at North Bangor and Glendon substations.
  - Re-terminate the North Bangor and Northwood 115 kV terminals at Belfast Substation.

Estimated Project Cost: $14.3M
Projected In-Service: 6/1/2028
Supplemental Project ID: s3626.1



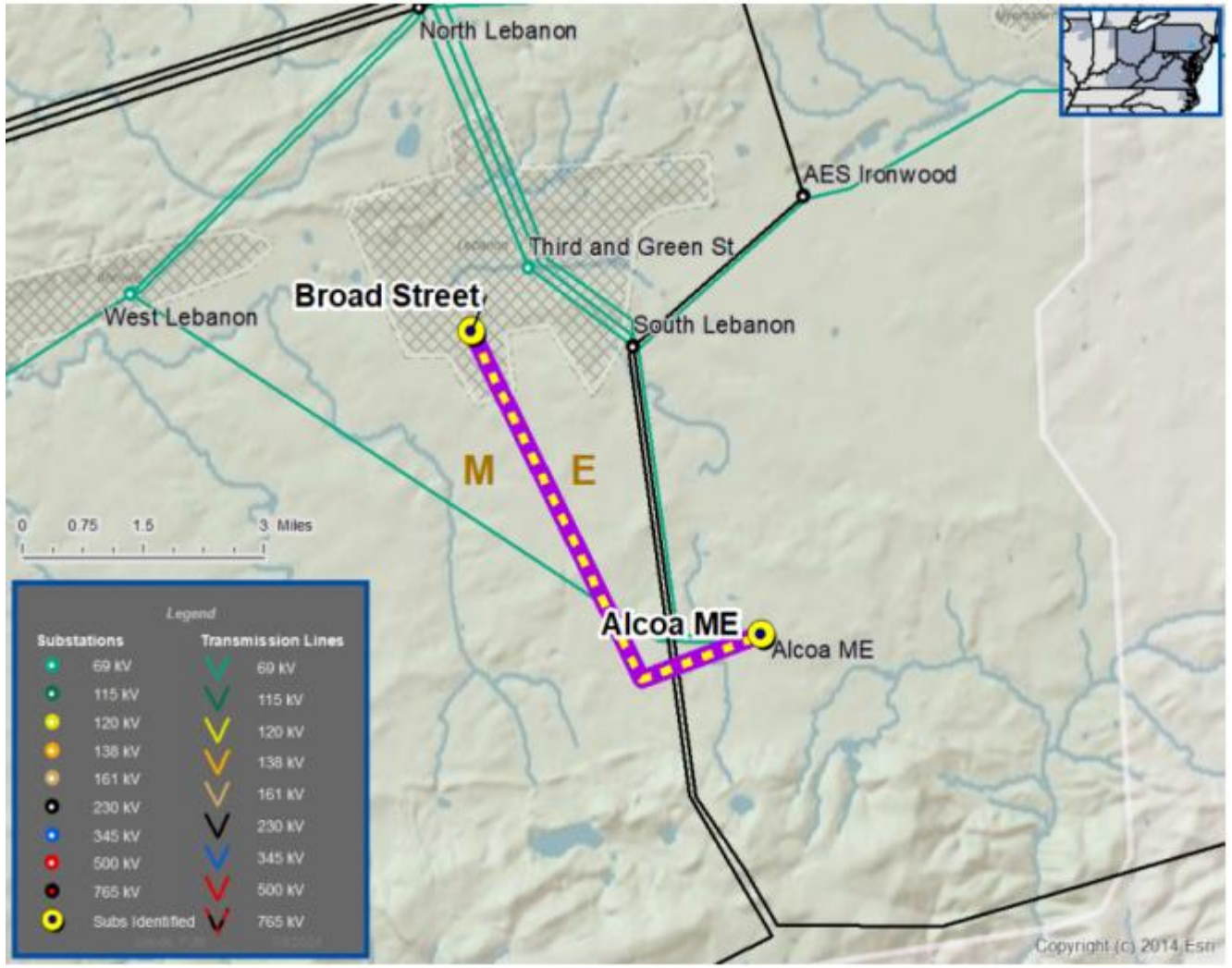
Met-Ed Transmission Zone M-3 Process
Alcoa – Broad Street 69 kV Line Customer Connection

Need Number: ME-2024-018
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan
Previously Presented: Solution Meeting – 08/15/2024
Need Meeting – 07/18/2024

Project Driver(s):
Customer Service

Specific Assumption Reference(s)
New customer connection 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 a new 69 kV delivery point near the Alcoa – Broad Street 69 kV Line. The anticipated load of the new customer connection is 39 MVA. The requested delivery point location is near the North Cornwall Substation.



Met-Ed Transmission Zone M-3 Process
Alcoa – Broad Street 69 kV Line Customer Connection

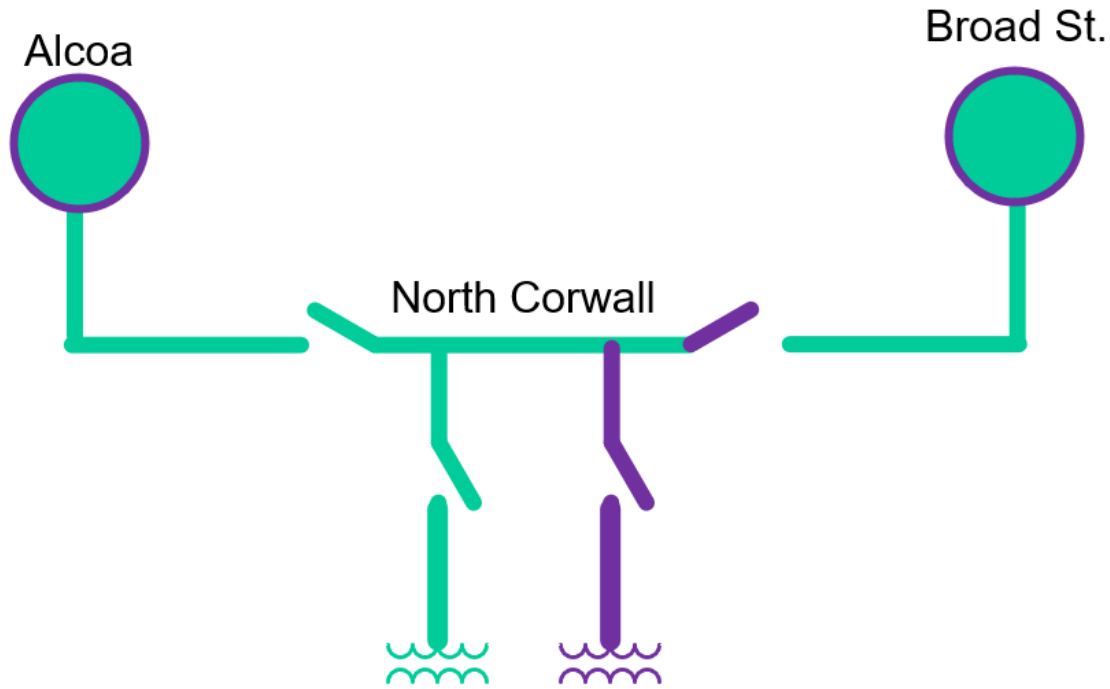
Need Number: ME-2024-018
Process Stage: Submission of Supplemental Projects for Inclusion in the Local Plan

Selected Solution:

69 kV Transmission Line Tap

- Install one SCADA controlled transmission line switch
- Relocate SW 9206 at/near STR. 92-81
- Construct approximately 1-2 spans of transmission line using from tap to customer
- Install one 69 kV revenue metering package at customer substation
- Modify relay settings at Alcoa and Broad St. substations

Estimated Project Cost: $1.19 M
Projected In-Service: 11/24/2025
Supplemental Project ID: s3627.1



Legend	
500 kV	
345 kV	
115 kV	
69 kV	
34.5 kV	
23 kV	
New	

Revision History

09/26/2025 – V1

s3605
s3622
s3623
s3624
s3625
s3626
s3627