

# Transmission Expansion Advisory Committee FirstEnergy Supplemental Projects

October 31, 2023

# 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-2022-005

**Process Stage:** Solution Meeting 10/31/2023

**Previously Presented:** Need Meeting 9/6/2022

**Project Driver:**

*Operational Flexibility and Efficiency*

**Specific Assumption Reference:**

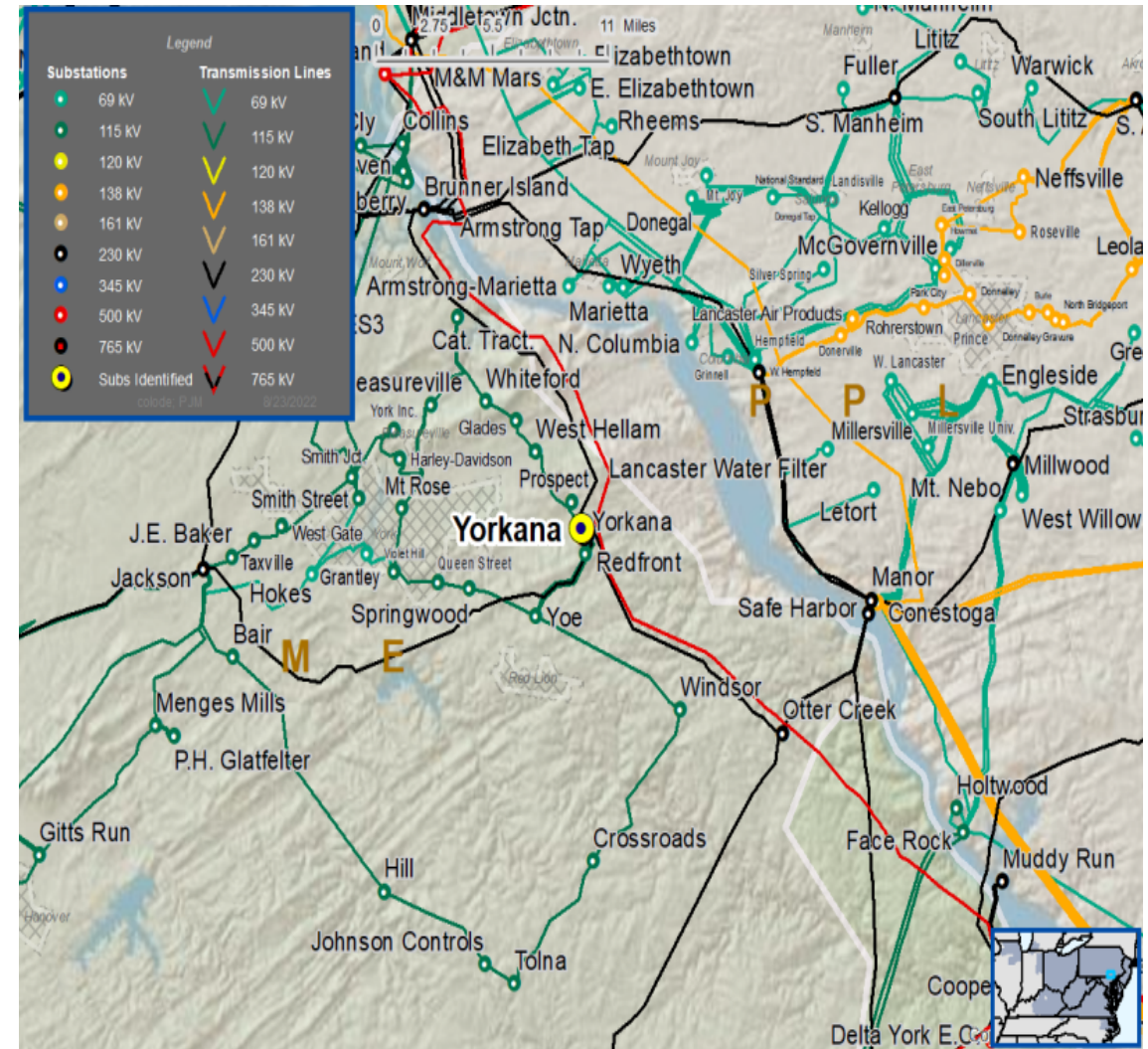
System Performance Projects

- Add/Expand Bus Configuration
- Eliminate simultaneous outages to multiple networked elements

**Problem Statement:**

The Yorkana 230 kV substation is configured as a four-breaker ring bus consisting of three 230 kV lines and two 230/115 kV transformers. One of the transformers is tapped on a 230 kV line terminal. Taking an outage of the transformer would require also taking an outage of the 230 kV line.

A fault on the transformer or line would result in loss of both facilities. A faulted circuit breaker could result in loss of two 230 kV lines and a transformer.



**Need Number:** ME-2022-005

**Process Stage:** Solutions Meeting 10/31/2023

**Proposed Solution:**

Yorkana 230 kV Substation

- Expand 230 kV Ring Bus to a five-breaker ring bus
  - Install 1 new 230 kV circuit breaker
  - Relocate the Brunner Island 230 kV terminal

**Transmission Line Rating:**

- Brunner Island – Yorkana 230 kV 1055 Line:
  - Before and after Proposed Solution: 647/801 MVA (SN/SE)
- Jackson – Yorkana 230 kV 1052 Line:
  - Before and after Proposed Solution: 627/775 MVA (SN/SE)
- Otter Creek – Yorkana 230 kV Line:
  - Before and after Proposed Solution: 647/801 MVA (SN/SE)

**Alternatives Considered:**

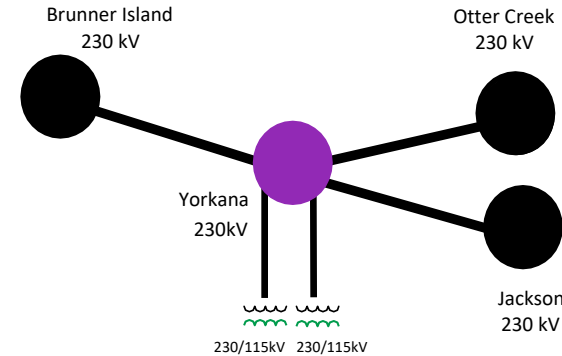
- Maintain substation in existing condition with reduced operational flexibility and compromised reliability

**Estimated Project Cost:** \$3.70 M

**Projected In-Service:** 6/1/2025

**Project Status:** Engineering

**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	

# Questions?



# 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

10/20/2023 - V1 – Original version posted to pjm.com