## Subregional RTEP Committee – Western FirstEnergy Supplemental Projects

June 13, 2025

## 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



## ATSI Transmission Zone M-3 Process Campbellsport – Ravenna No. 2 69 kV Line

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West Cuyahoga Falls West Ravenna	A state of the	0 2 48, Miles
Campbellspo	rt	
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Evans	anna	Substations Transmission Lines 69 kV 69 kV
Old Forge		• 115 KV V 115 KV
rling EastAkron		<ul> <li>120 kV</li> <li>120 kV</li> <li>138 kV</li> <li>138 kV</li> </ul>
Gilchrist		161 KV
Hayes Lemmerz		■ 230 KV V 230 KV
		● 500 KV V 345 KV
Clayben		Subs identified V 765 kv
Congress		colode, PJM 1V4/2022

Need Number:ATSI-2022-029Process Stage:Solution Meeting - 06/13/2025Previously Presented:Need Meeting - 11/18/2022

Supplemental Project Driver(s): Equipment Material Condition, Performance and Risk

Specific Assumption Reference(s):

#### Line Condition Rebuild / Replacement

- Aged or deteriorated transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or costs
- Transmission line ratings are limited by terminal equipment.

#### **Problem Statement:**

- Campbellsport-Ravenna No. 2 69 kV Transmission Line is approximately 4.4 miles in length. The line mileage includes approximately 0.2 miles on poles double circuited with Ravenna-West Ravenna No. 1 69 kV Line and approximately 2 miles on poles double circuited with Campbellsport-Ravenna No. 1 69 kV Line.
- Recent inspection of 32 structures (approximately 1.6 miles) of the Campbellsport Ravenna No. 2 69 kV Transmission Line show a reject rate of 28% (9 of 32 structures). Inspection finding includes woodpecker holes, sound test failure, and evidence of decay or splitting. All poles are greater than 40 years of age.
- Disconnect switches and substation conductor at Ravenna Substation are limiting the transmission line rating.



## ATSI Transmission Zone M-3 Process Campbellsport – Ravenna No. 2 69 kV Line

Need Number:ATSI-2022-029Process Stage:Solution Meeting - 06/13/2025

**Proposed Solution:** 

Campbellsport – Ravenna No. 2 69 kV Line

- Rebuild 1.6 miles of noncontiguous 69 kV line sections.
   Ravenna Substation:
- Replace bus transfer switch
- Replace breaker disconnect switches
- Upgrade substation conductors to exceed transmission line rating

#### **Transmission Line Ratings:**

Collins – Ravenna 69 kV Line:

- Before Proposed Solution: 82 / 103 / 108 / 124 MVA (SN/SE/WN/WE)
- After Proposed Solution: 103 / 124 / 116 / 147 MVA (SN/SE/WN/WE)

#### Campbellsport – Collins 69 kV Line:

- Before Proposed Solution: 95 / 115 / 109 / 139 MVA (SN/SE/WN/WE)
- After Proposed Solution: 103 / 124 / 116 / 147 MVA (SN/SE/WN/WE)

#### Alternatives Considered:

Maintain line in existing condition with deteriorating wood pole structures.

Estimated Project Cost: \$6.77M Projected In-Service: 5/26/2026 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	



Need Number:ATSI-2025-011Process Stage:Solution Meeting - 06/13/2025Previously Presented:Need Meeting - 3/14/2025

#### Supplemental Project Driver(s):

Equipment Material Condition, Performance and Risk

#### Specific Assumption Reference(s):

#### **System Performance Global Factors**

System Reliability and Performance

#### Line Condition Rebuild / Replacement

- Aged or deteriorated wood pole transmission line structures
- Negatively impact customer outage frequency and/or durations
- Demonstrate an increasing trend in maintenance findings and/or cost

#### **Problem Statement:**

The manually operated A-81 and A-82 switches on the Black River - Johnson West 69 kV Line were installed in 1956. The switches and supporting structure have reached expected end of life. Replacement components are difficult to source leading to nonstandard repairs. The assembly of these switches is also subject to dimensional changes in the wood pole structure such as warping, shrinking or deflection. These changes can result in misoperation with the potential for unintended arcing, thereby increasing the exposure risk to switchmen.

## ATSI Transmission Zone M-3 Process Black River – Johnson West 69 kV Line





### ATSI Transmission Zone M-3 Process Black River – Johnson West 69 kV Line

Need Number: Process Stage: ATSI-2025-011 Solution Meeting - 06/13/2025

#### **Proposed Solution:**

Black River – Johnson West 69 kV Line

- Retire and replace obsolete 2-way line tap switches A-81 and A-82 at Oakwood Tap.
- Relocate new switches to mid-span structures and equip with SCADA controlled motor operators.

#### **Transmission Line Ratings:**

Black River – Oakwood Tap 69 kV Line

- Before Proposed Solution: 82 / 103 / 108 / 123 MVA (SN/SE/WN/WE)
- New Line Rating 103 / 124 / 116 / 147 MVA (SN/SE/WN/WE)

#### Oakwood Tap – Shalmet Tap 69 kV Line

- Before Proposed Solution: 82 / 103 / 108 / 123 MVA (SN/SE/WN/WE)
- After Proposed Solution: 103 / 124 / 116 / 147 MVA (SN/SE/WN/WE)

Shalmet Tap – Johnson West 69 kV Line

- Before Proposed Solution: 100 / 121 / 136 / 143 MVA (SN/SE/WN/WE)
- After Proposed Solution: 103 / 124 / 116 / 147 MVA (SN/SE/WN/WE)

#### Alternatives Considered:

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

Estimated Project Cost: \$1.66M Projected In-Service: 12/31/2026 Project Status: Conceptual Model: 2024 RTEP model for 2029 Summer (50/50)







## ATSI Transmission Zone M-3 Process Gates – Johnson 138 kV Line

Need Number:	ATSI-2025-015
Process Stage:	Solution Meeting – 06/13/2025
Previously Presented:	Need Meeting – 05/16/2025

**Project Driver(s):** Equipment Condition/Performance/Risk

#### Specific Assumption Reference(s):

System Performance Projects Global Factors

- Substation/Line equipment limits
- Substation Condition Rebuild/Replacement
- Circuit breakers and other fault interrupting devices

#### **Problem Statement:**

- The 138 kV Oil Circuit Breaker B-4 and associated disconnect switches at Gates Substation are aging with increasing maintenance concerns. The breaker B-4 is 60 years old and other equipment is approximately 35 years old.
- Communication equipment at Gates and Johnson substations have reliability issues.
- Transmission line ratings are limited by terminal equipment.
- Existing ratings for Gates Johnson 138 kV line (Gates Murray section):
  - 195 / 209 /217 / 229 MVA (SN/SE/WN/WE)
- Conductor ratings for Gates Johnson 138 kV line (Gates Murray section):
  - 196 / 242 / 239 / 306 MVA (SN/SE/WN/WE)





### ATSI Transmission Zone M-3 Process Gates – Johnson 138 kV Line

Need Number:ATSI-2025-015Process Stage:Solution Meeting - 06/13/2025

#### **Proposed Solution:**

At Gates Substation:

- Replace 138 kV breaker and associated disconnect switches.
- Install surge arresters and power communications monitor PCM-5350.
- Replace substation conductor.

At Johnson Substation:

- Replace disconnect switches.
- Install power communications monitor PCM-5350.

#### **Transmission Line Ratings:**

Gates - Johson 138 kV line (Gates - Murray section):

- Before Proposed Solution: 195 / 209 / 217 / 229 MVA (SN/SE/WN/WE)
- After Proposed Solution: 196 / 242 / 239 / 306 MVA (SN/SE/WN/WE)

#### **Alternatives Considered:**

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

Estimated Project Cost:\$1.96MProjected In-Service:12/29/2028Project Status:ConceptualModel:2024 RTEP model for 2029 Summer (50/50)





## Appendix

# High Level M-3 Meeting Schedule

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

### Needs

### Solutions

## Submission of Supplemental Projects & Local Plan

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

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

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**

06/03/2025–V1 – Original version posted to pjm.com