Sub Regional RTEP Committee
PJM West

September 25, 2019

Proposal Window Exclusion Definitions

- The following definitions explain the basis for excluding flowgates and/or projects from the competitive planning process and designating projects to the incumbent Transmission Owner.
- Flowgates/projects excluded from competition will include the underlined language on the corresponding slide.
  - Immediate Need Exclusion: Due to the immediate need of the violation (3 years or less), the timing required for an RTEP proposal window is infeasible. As a result, the local Transmission Owner will be the Designated Entity. - Operating Agreement, Schedule 6 § 1.5.8(m)
  - Below 200kV Exclusion: Due to the lower voltage level of the identified violation(s), the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(n)
  - Substation Equipment Exclusion: Due to identification of the limiting element(s) as substation equipment, the driver(s) for this project are excluded from the competitive proposal window process. As a result, the local Transmission Owner will be the Designated Entity - Operating Agreement, Schedule 6 § 1.5.8(p)

First Review

Baseline Reliability Projects

AEP Transmission Zone: Baseline
East Lima and Haviland 138 kV Station Upgrade

Process Stage: First Review

Criteria: Winter Generator Deliverability and Basecase Analysis

Assumption Reference: PJM RTEP Study

Model Used for Analysis: 2024 RTEP Winter Peak Model

Proposal Window Exclusion: Substation Equipment and Below 200kV

Problem Statement:

The Haviland – East Lima 138kV line is overloaded for multiple contingencies in winter generator deliverability test and basecase analysis test. (N1-WT18, N1-WT19, N1-WT20, N1-WT21, N1-WT22, N1-WT23, N1-WT24, N1-WT25, GD-W244, GD-W3, GD-W4, GD-W5, GD-W7, GD-W8, GD-W19)

The Haviland 1 – Haviland 2 is overloaded for the loss of East Lima – Maddox 345kV line with the stuck break at East Lima. (GD-W272)

Existing Facility Ratings:
East Lima –Haviland: 143/143/143/143 SN/SE/WN/WE

Haviland 1–Haviland 2: 187/240/247/285 SN/SE/WN/WE

AEP Transmission Zone: Baseline
East Lima and Haviland 138 kV Station Upgrade

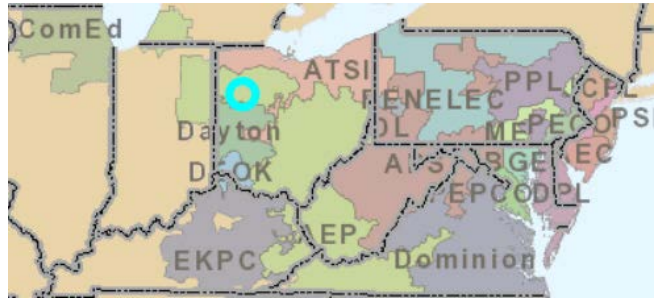
Proposed Solution:
At East Lima and Haviland 138 kV stations, replace line relays and wavetrap on the East Lima-Haviland 138 kV facility. In addition, at Haviland 138 kV station replace and upgrade bus differential protection on the Haviland 1-Haviland 2 138 kV facility.

Estimated Cost: $1.5 Million

Alternatives:

No alternate solutions were considered due to low cost and feasibility of the proposed solution.

Required In-Service: 6/1/2024



Dayton: Baseline
Blue Jacket Tap-Huntsville 69kV Line & Botkins 69kV Voltage Drop

Process Stage: First Review

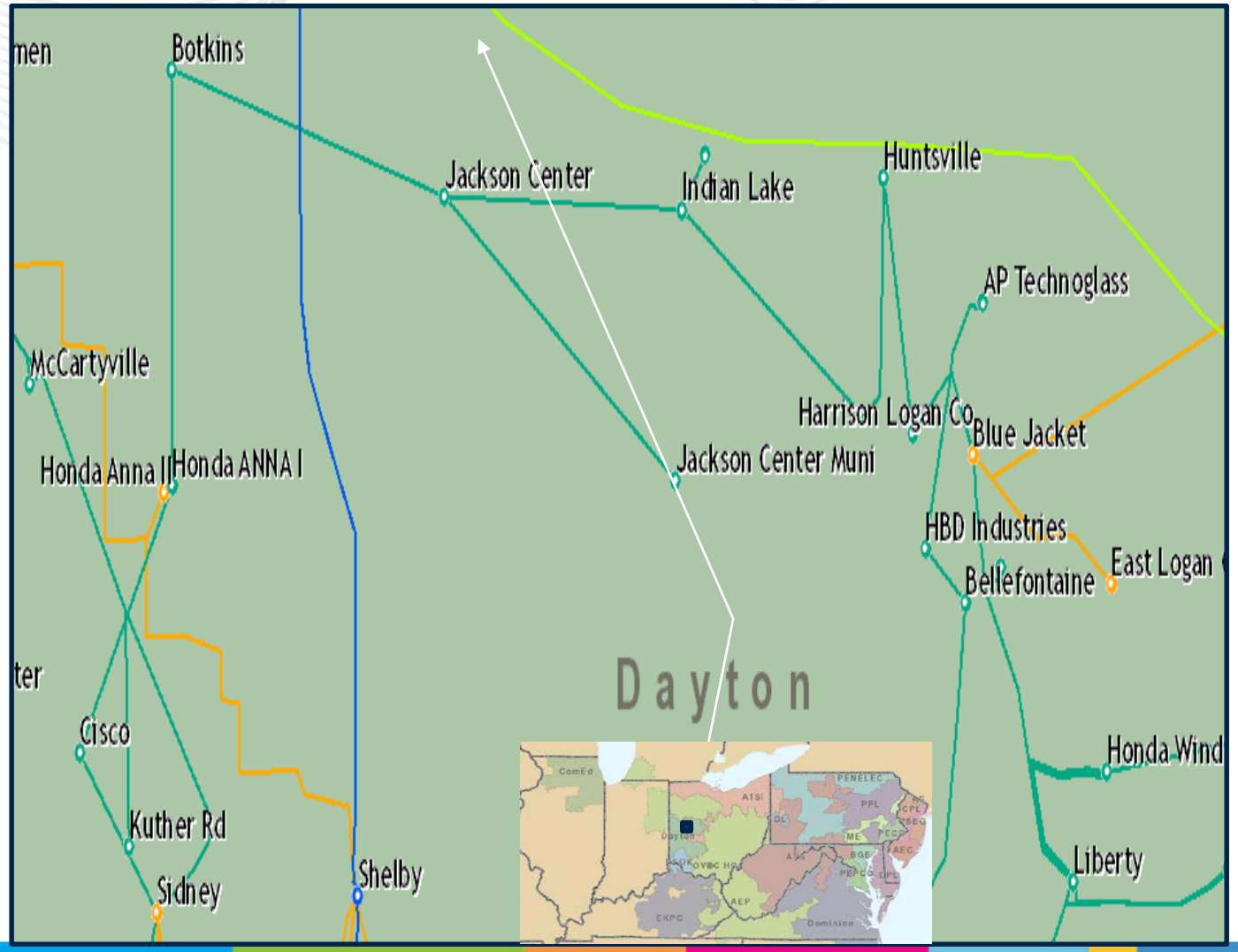
Criteria: TO Criteria Violation
Assumption Reference: FERC 715
Model Used for Analysis: 2024 RTEP Summer & Winter
Proposal Window Exclusion: Below 200kV
Problem Statement:
The Botkins 69kV bus voltage drops 10.6% for the loss of the Sidney-Botkins 69kV transmission line under N-1 analysis in the 2024 RTEP summer case, and the voltage drops 10.4% for the same contingency in the 2024 RTEP winter case. The Sidney-Botkins contingency also causes the Blue Jacket Tap-Huntsville 69kV line to overload to 101% of its summer emergency rating in the 2024 RTEP summer case.
Existing Facility Rating: Blue Jacket Tap-Huntsville SN/SE 80/98
Proposed Solution:
Move the existing Botkins 69kV capacitor from the Sidney-Botkins side of the existing breaker at Botkins to the Botkins-Jackson Center side. This will keep the capacitor in-service for the loss of Sidney-Botkins. This reduces the voltage drop to less than 3% and also resolves the overload on the Blue Jacket Tap-Huntsville 69kV line.

- **Estimated Cost:** $200K

Alternatives:

1. Add a new capacitor at Botkins Substation on the Botkins-Jackson Center side of the existing breaker at Botkins.
   - **Estimated Cost:** $600K
2. Reconductor ~4 miles of the existing Blue Jacket Tap-Huntsville 69kV line with 1351 AAC (SN/SE 151/187).
   - **Estimated Cost:** $3.5M

Required In-Service: 6/1/2024



Second Review

Baseline Reliability Projects

APS Transmission Zone: Baseline
Glen Falls 138kV Substation Breakers Upgrade

Process Stage: Second Review

Previously Presented: 6/17/2019

Criteria: Short Circuit

Assumption Reference: PJM Criteria

Model Used for Analysis: Short Circuit 2020/2023 Base cases

Proposal Window Exclusion: Immediate Need, Below 200 kV

Problem Statement:

The "Rider 50" and "No. 1 & No. 4 transf." 138 kV breakers at Glen Falls 138 kV substation are overdutied due to generation retirement driven system upgrade b2996.

Existing Facility Rating: 5000 MVA

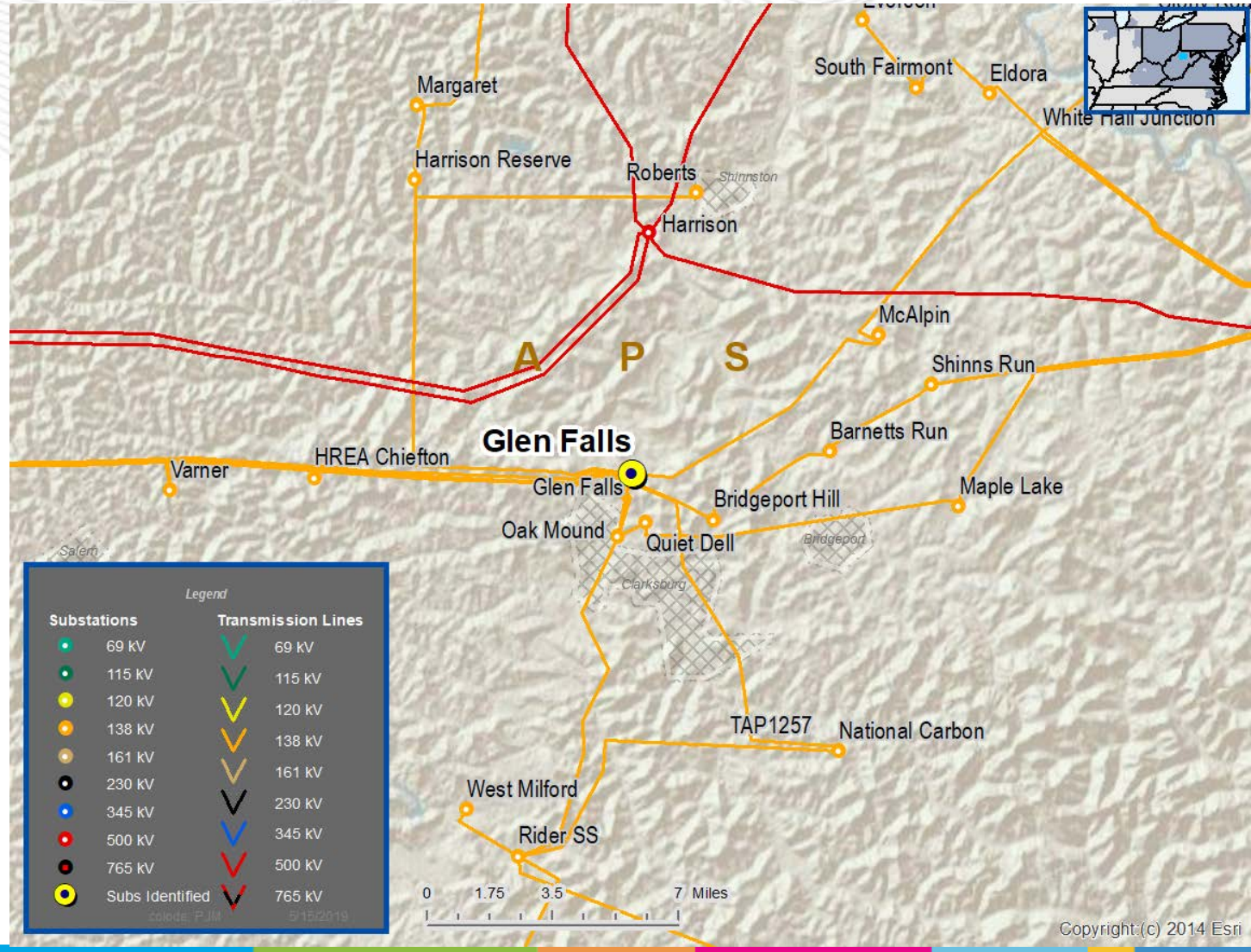
Proposed Solution (b2996.3):

Replace two 138 kV breakers (Rider 50 and #1/4 transformer breaker) at Glen Falls 138 kV substation with 63 kA breakers

Estimated Cost: $ 487 k

Alternatives: N/A

Required In-Service: 5/31/2020



Next Steps

Upcoming Western SRRTEP Dates

West	Start	End
10/25/2019	9:00	1:00

Questions?

Revision History

9/18/2019 – V1 – Original version posted to pjm.com

9/25/2019 – V2 – Moved “Next Steps” slide to page 9