Reliability Analysis Update

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Transmission Expansion Advisory Committee
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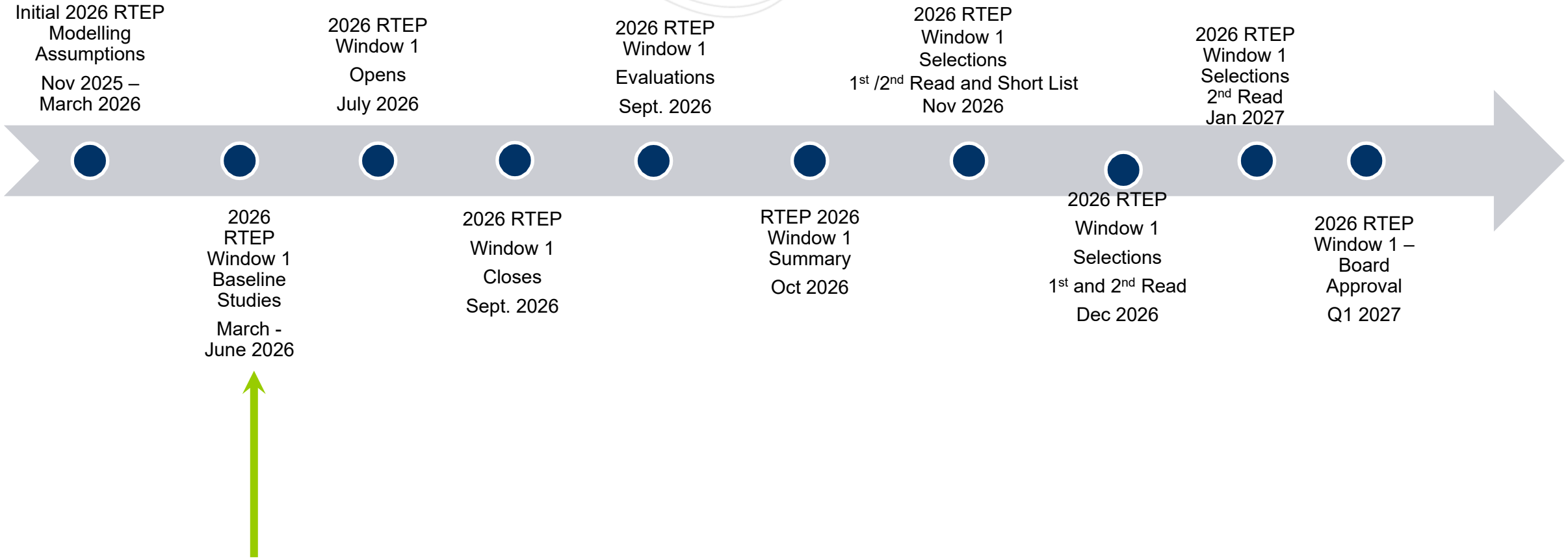
Outline

- 2026 RTEP - Window 1
  - Schedule Update
- 2025 RTEP
  - CIL Study Results
- 2022 RTEP Window 3
  - Additional Scope (upgrades)
- 2025 RTEP - Window 1
  - P5 Updates

2026 RTEP Window 1 – Schedule Update

2026 RTEP Window 1 – Timeline



2025 RTEP Window 1

PJM CIL (Capacity Import Limit) Study

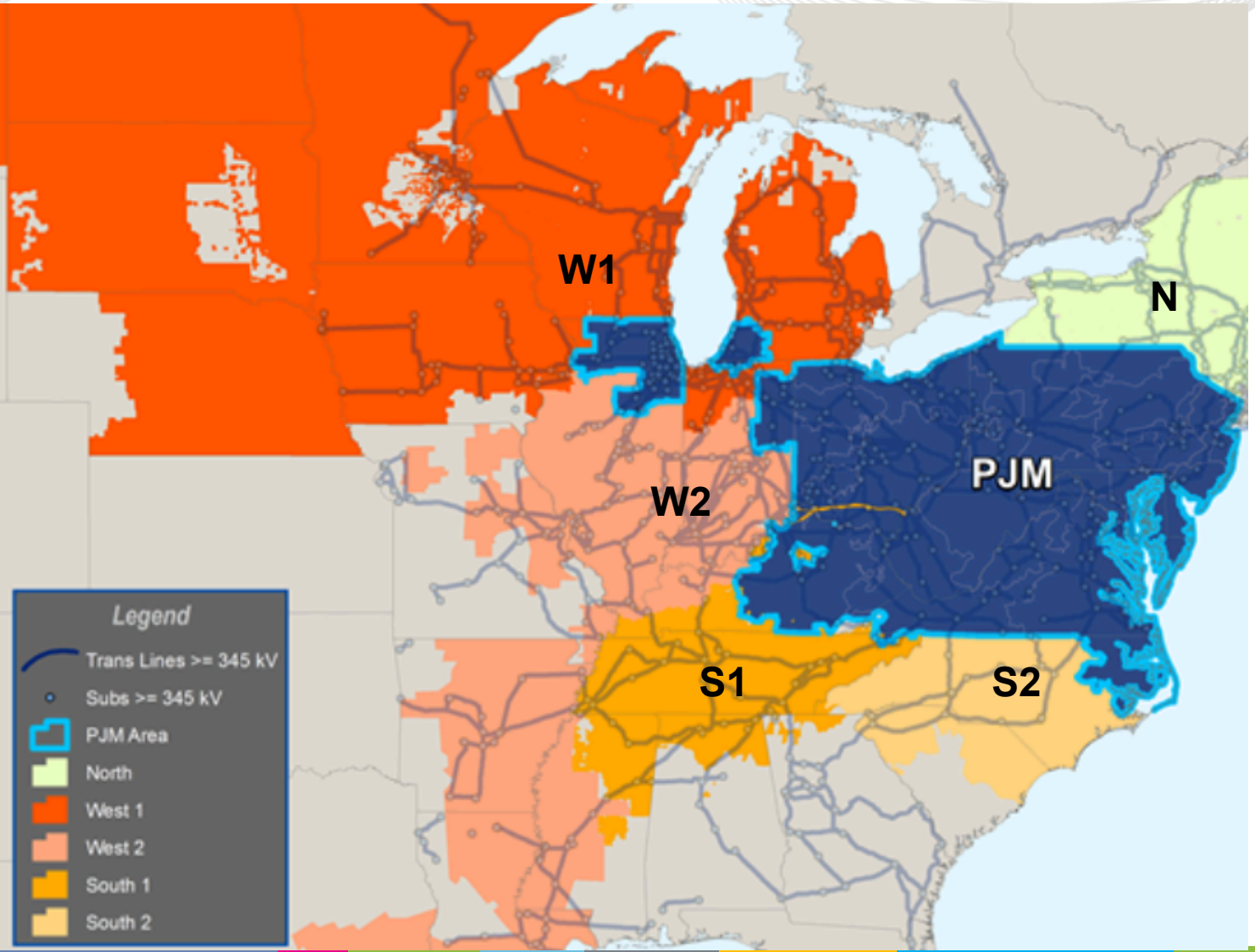
Background

- Purpose:
  - The purpose of this study is to confirm that the PJM and surrounding transmission systems will be robust enough to enable PJM to import the amount of emergency assistance (CBM) assumed available in the 2025 PJM Reserve Requirement Study (RRS) and PJM Reliability Assurance Agreement RAA (Schedule 4.D)
    - The amount of CBM used in the PJM Reserve Requirement Study (RRS) is **3,500 MW**.
    - Attachment C.3 of Manual M-14B requires that CBM be preserved in generator deliverability studies

- Methodology:
  - Attachment G.11 “PJM Capacity Import Limit (CIL) Calculation Procedure”

- Definition: PJM Capacity Benefit Margin (CBM)
  - Attachment C.3.1 Generator Deliverability Procedure - “CBM is the amount of imports that PJM assumes will be available from neighboring regions during an RTO-wide capacity deficiency.”

Results



Supply Zone	2025 RTEP CBM Allocation (MW)	2026 RTEP CBM Allocation (MW)
North	295	154
West 1	1,514	1,195
West 2	697	539
South 1	56	140
South 2	939	1,473
TOTAL	**3,500**	**3,500**

Conclusion

- The primary drivers for the CBM allocation changes from the previous study are
  - North – The previously binding Oakdale-Laurel Lakes 115kV tie line is once again binding in the 2025 PJM CIL study case. The pre-contingency loading on this line increased compared to the previous year. The result is a year to year decrease in import capability from the North Zone.
  - South 1, South 2, West 1, West 2
    - The 2025 Window 1 Selected Proposal was applied to the study case.
      - Previously identified binding facility Person-Sedge Hill 230 kV tie line to CPLE is no longer binding
      - Previously identified binding facility Zion Station-Waukegan 345kV line in ComEd is no longer binding
      - Newly identified binding is the Axton-Danville 138kV line in AEP
      - Newly identified binding is the Cherry Valley-Silver Lake 345kV line in ComEd
      - Binding facilities from the 2024 study are also binding in the current 2024 study
        - » Volunteer – Phipps Bend 500 kV in TVA
  - PJM overall import capability (FCITC*) decreased from the 2024 Study to the 2025 Study
    - From **15,482 MW** in 2024 to **14,012 MW** in 2025
      - » *First Contingency Incremental Transfer Capability

2022 RTEP Window 3
Upgrades - Additional Scope

2022 Window 3 Upgrades Additional Scope
Replace Terminal Equipment at Rock Springs 500 kV

2022 Window 3 additional scope to account for the upgrade required at Rock Springs 500 kV station:

- Part of the 2022 Window 3 solutions, the Peach Bottom area transmission system was reconfigured. The configuration change resulted in re-terminating the Peach Bottom – Calpine generator POI – Rock Springs 500kV circuit into the Transource proposed Bramah/North Delta 500 kV substation. The scope of work required to terminate the Rock Springs – Calpine generator POI into Bramah/North Delta station didn't account for the terminal work at Rock Springs 500 kV.

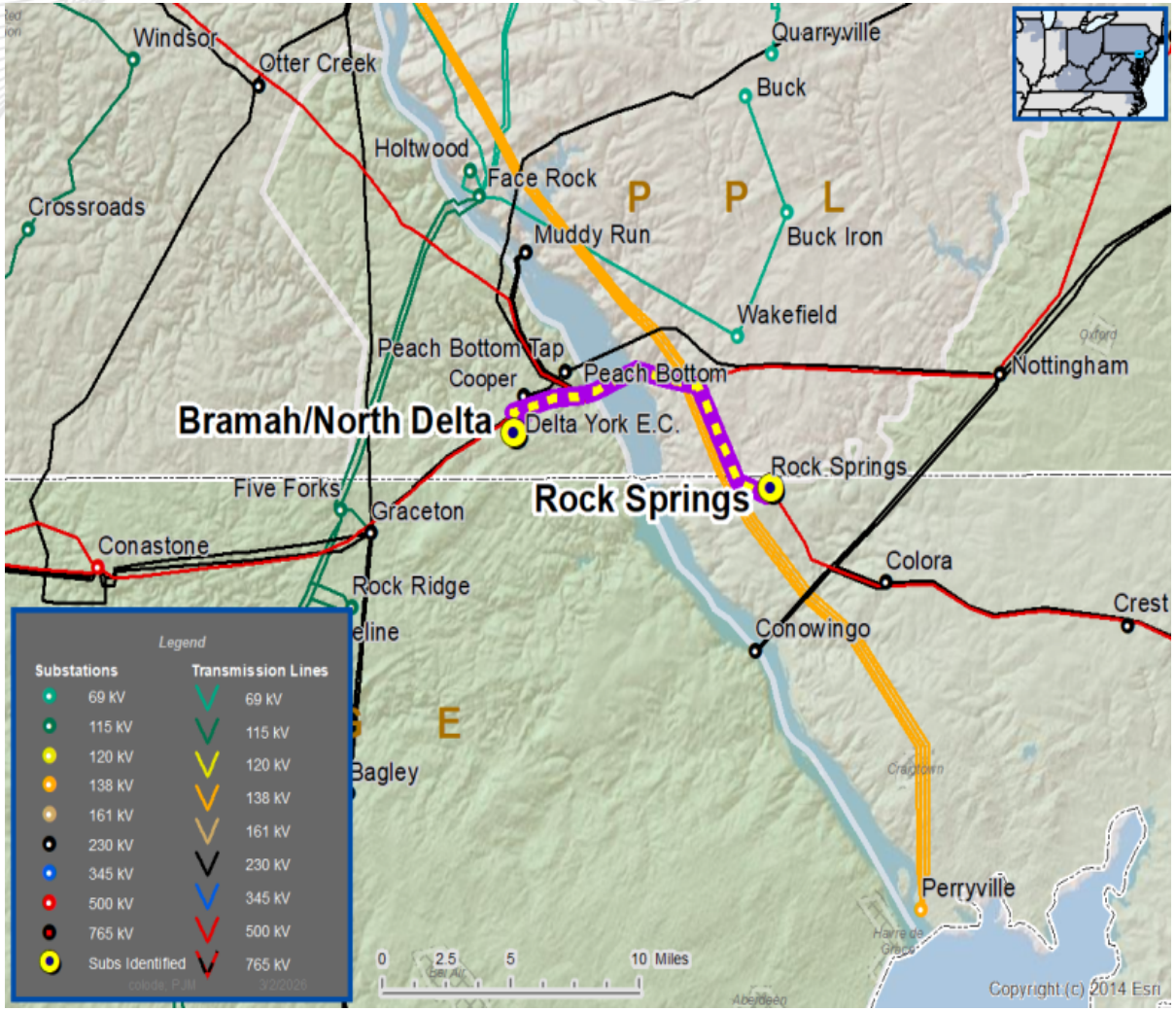
Recommended Solution:

- Replace terminal equipment at Rock Springs 500 kV, including relays, disconnect switch to increase the rating of the Bramah/North Delta – Rock Springs circuit to match the conductor rating.

Baseline # - B3800.55

Proposed Cost Estimate: $1.37M

Projected In-Service Date : 3/31/2027



2025 RTEP Window 1
P5 Updates

AEP and DOM
P5 CAPs: Baseline

Process Stage: First Read

Criteria: Baseline Analysis

Assumption Reference: 2030 RTEP assumption

Model Used for Analysis: 2025 Series RTEP 2030 Summer, Winter & LL cases

Proposal Window Exclusion: Substation Exclusion

Problem Statement: In 2025 Series RTEP 2030 Summer, Winter & LL cases, multiple thermal and voltage violations are observed due to multiple P5 contingencies.

Proposed Solution:

- TOs have submitted P5 mitigation projects that include upgrades listed below designed to eliminate the P5 contingency:
  - Battery Monitoring
  - Relay Upgrades

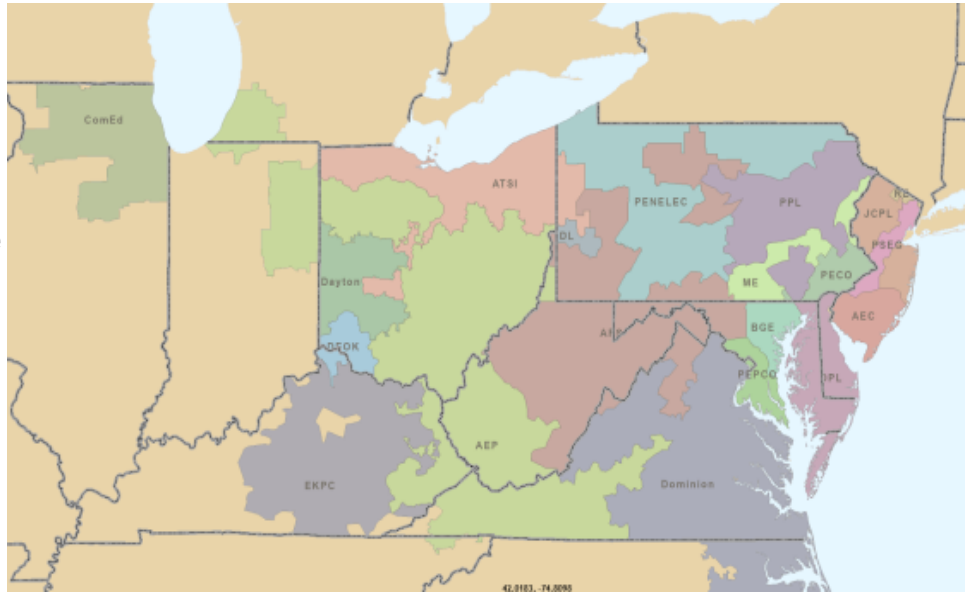
Transmission Estimated Cost: AEP $1.7 M, DOM $0.02 M

Ancillary Benefits: Installation of redundant equipment will prevent outage scenarios and improve reliability of the transmission system.

Required in-service date:

04/15/2030 (4 AEP and 1 DOM), 06/01/2030(5 AEP), 12/01/2030(3 AEP)

Projected in-service date: 4/15/2030



TO	Total Cost ($)	# of Substations By kV Level				
		115	138	230	345	500
AEP	$ 1,700,000.00		5		7	
DOM	$ 20,000					1

Contact

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Reliability Analysis Update

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Revision History

Version No.	Date	Description
1	March 5, 2026	• Initial slides posted

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