



David Burton
Indian River Power LLC
29416 Power Plant Road
Dagsboro, Delaware 19939

An NRG Energy Company

October 13, 2021

Bryan Ashby
Surface Water Discharges Section, Division of Water Resources
Delaware Department of Natural Resources and Environmental Control
89 King's Highway
Dover, DE 19901

**Indian River Generating Station
NPDES Permit No. DE 0050580 / State Permit No. WPCC 3013C/76
40 CFR 423.19 Notice of Planned Participation**

Mr. Ashby,

Indian River, LLC must manage the discharge of bottom ash transport water to surface waters of the state in accordance with USEPA's Final Steam Electric Reconsideration Rule (ELG), effective December 14, 2020, at the Indian River Generating Station (Indian River) located in Dagsboro, Delaware. The ELG rule provides multiple compliance pathways listed in 40 CFR 423.13, including an ELG-compliant bottom ash system with up to 10% purge (§423.13(k)(2)(i)), permanent cessation of coal burning activities due to retirement or repowering (§423.13(k)(2)(ii)), or low utilization electric generating units operating at a 10% capacity factor or less (§423.13(k)(2)(iii)).

On June 29, 2021 Indian River Power LLC filed a deactivation notice to PJM, the Regional Transmission Operator (RTO), requesting permission to deactivate Unit 4 by May 31, 2022. PJM conducted a reliability study as a result of this notification and on July 30, 2021, identified certain transmission based reliability violations that would result from the proposed deactivation. As a result, Indian River will remain in operation and continues to work collaboratively with PJM with the expectation that the unit continues to operate subject to the terms of a potential Reliability Must Run (RMR) agreement. PJM has indicated the reliability issues are expected to be resolved by December 31, 2026 which is the basis for our current deactivation timeline. Once the identified reliability violations are resolved, it is the intention of Indian River Power LLC to commence with deactivation of Unit 4.

In accordance with 40 CFR 423.19(f)(1), Indian River Power LLC is hereby providing a Notice of Planned Participation (NOPP) for the Indian River

Generating Station's Unit 4 which will achieve permanent cessation of coal combustion by December 31, 2028. Unit 4 is the only remaining coal unit at the facility and is subject to Effluent Limit Guidelines (ELG) defined in Section 423.13(K)(1)(i) **Bottom Ash Transport Water**. The facility operates a combustion turbine at the facility which is not subject to this rule or included within this notification.

Indian River ELG Planning and Notification

Under Section 423.19(f)(1), **Notice of Planned Participation**, Indian River LLC is submitting such notice seeking to qualify as an electric generating unit that will achieve permanent cessation of coal combustion by December 31, 2028, under this part.

- Unit 4 is expected to achieve cessation of coal combustion no later than December 31, 2028 due to planned retirement.
- Indian River LLC has submitted its initial deactivation notice to PJM and is anticipated to continue operations under a Reliability Must Run Agreement (RMR) when executed. When the reliability issues are satisfied (anticipated by December 31, 2026), Unit 4 expects to deactivate.
- Documentation that the deactivation notice was submitted to the regulatory body PJM, and that they in turn performed a reliability analysis and reliability impacts were identified can be found on PJM's website here <https://pjm.com/planning/services-requests/gen-deactivations> and also in Attachment 1. A summary of PJM's reliability analysis is provided as Attachment 2.
- In the event the RMR continues beyond December 31, 2028, the facility would avail itself of the protections outlined in Section 423.18.

A timeline to achieve permanent cessation of coal combustion, including interim milestones and the projected dates of completion is provided below.

Action	Actual or Estimated Timeline
Filed Deactivation Notice for Unit 4 with PJM	June 29, 2021
Reliability Impacts Resolved	Anticipated December 31, 2026
Cease coal-fired operations of Unit 4	When reliability impacts resolved, no later than December 31, 2028

Indian River, LLC reserves the ability to modify the plans for ELG rule compliance at the Indian River Station, including but not limited to changing the expected shutdown date, but in no case later than December 31, 2028, requesting authorization to continue as a low-utilization unit, or discharge bottom ash transport water discharge limits in accordance with 40 CFR 423.13(k)(2). Further, in the event the RMR continues beyond December 31, 2028, the facility would avail itself of the protections outlined in Section 423.18.

If you have any questions or require any additional information regarding this notice, please contact David Bacher, Senior Regional Manager, Environmental Business at (302) 540-0327 or david.bacher@nrg.com.

Sincerely yours,

A handwritten signature in cursive script that reads "David A. Burton".

David Burton
Facility Manager, Indian River Generating Station

Attachments

- Attachment 1 – Summary of PJM Deactivation Notices
- Attachment 2 – Summary of PJM Reliability Analysis

CC: David Bacher (NRG)
Asset Management (NRG)

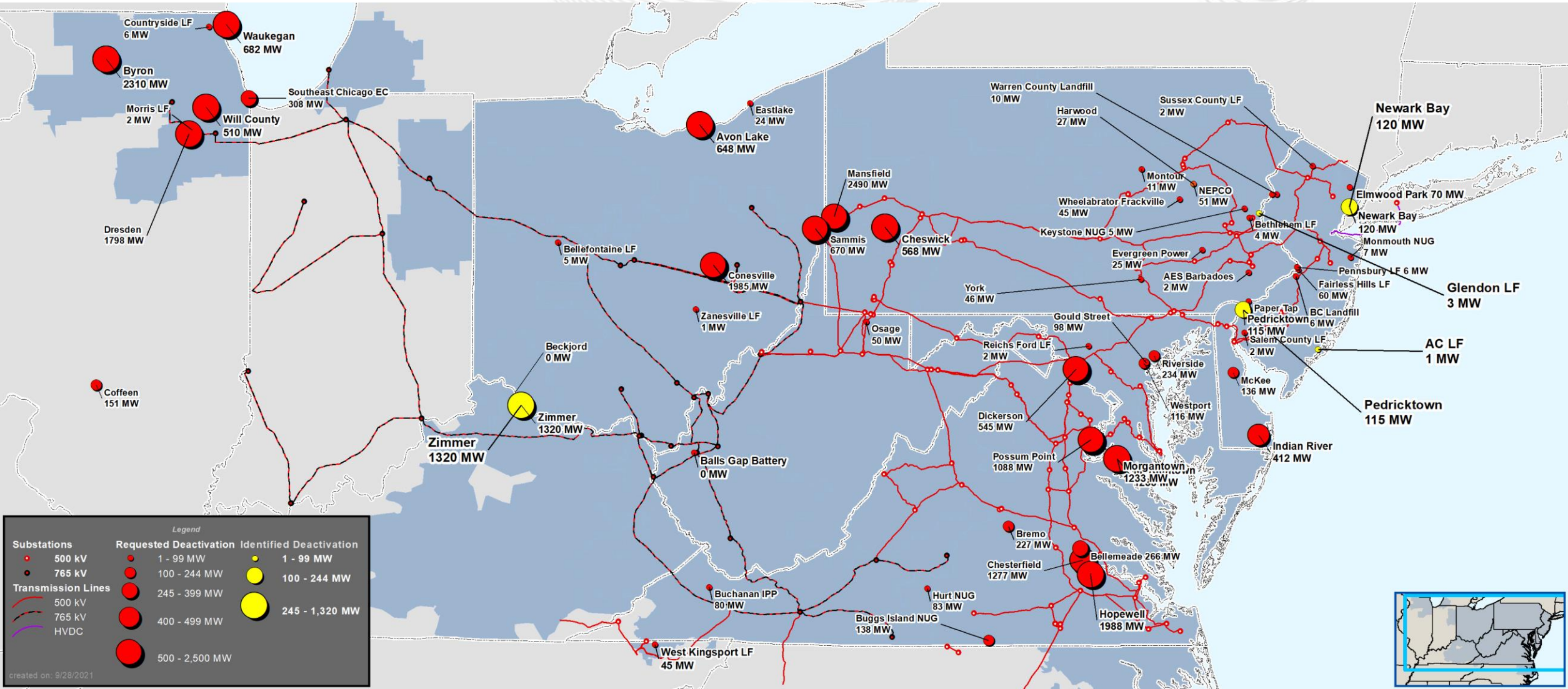
Attachment 1

Summary of PJM Deactivation Request Notices



Generation Deactivation Notification Update

Transmission Expansion Advisory Committee
October 5, 2021



Unit(s)	Transmission Zone	Requested Deactivation Date	PJM Reliability Status
Pedricktown - 115.3 MW	AEC	5/31/2022	Reliability analysis complete. New baseline resolves identified impact. Units can retire as scheduled.
Newark Bay - 120.2 MW	PSEG	5/31/2022	
Zimmer 1 - 1320 MW	DEOK	5/31/2022	Reliability analysis complete. New and existing baselines resolve identified impacts. Unit can retire as scheduled.
Glendon LF- 1.3 MW	METED	12/01/2021	Reliability analysis complete. No reliability violation identified.
AC Landfill 1 and 2- 2.9 MW	ACE	12/09/2021	Reliability analysis underway

Problem Statement: Generation Deliverability Violation – Pedriktown and Newark Deactivations

- Thermal violation: Croydon – Burlington 230 kV line
- Contingency: N-2

Recommended Solution:

- New baseline b3335 – New baseline b3335 – Reconductor a 0.76 mile portion of the Croydon-Burlington 230 kV line
- Current Rating: 752 MVA SN/ 906 MVA SE
- New Rating: 851 MVA SN/ 995 MVA SE

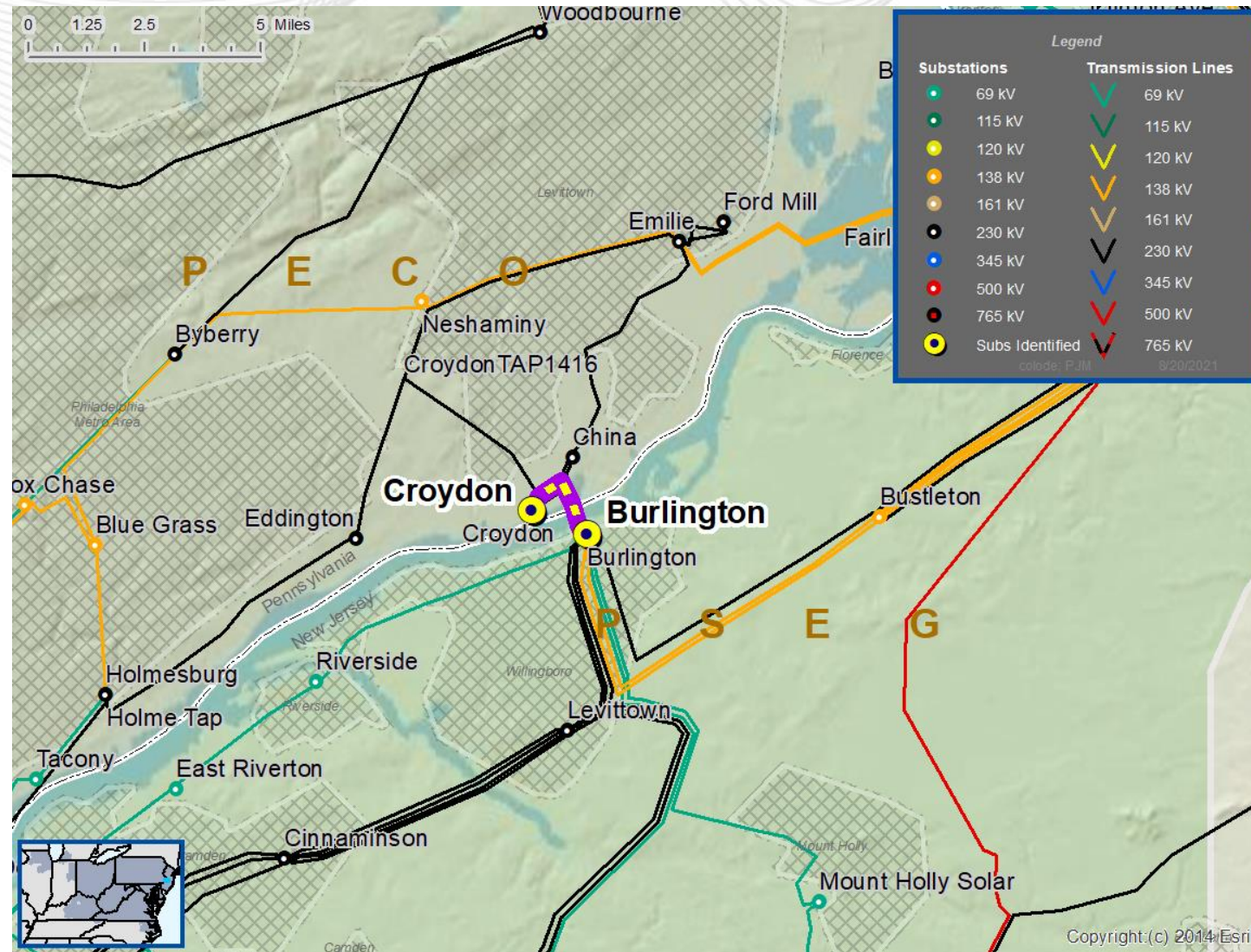
Estimated Cost: \$ 500K

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Required IS Date: 06/01/2022

* Operating measures identified to mitigate reliability impacts in interim.



SECOND READ

Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Shepler Hill Jct – Mitchell 138 kV line
- Contingency: N-2

Recommended Solution:

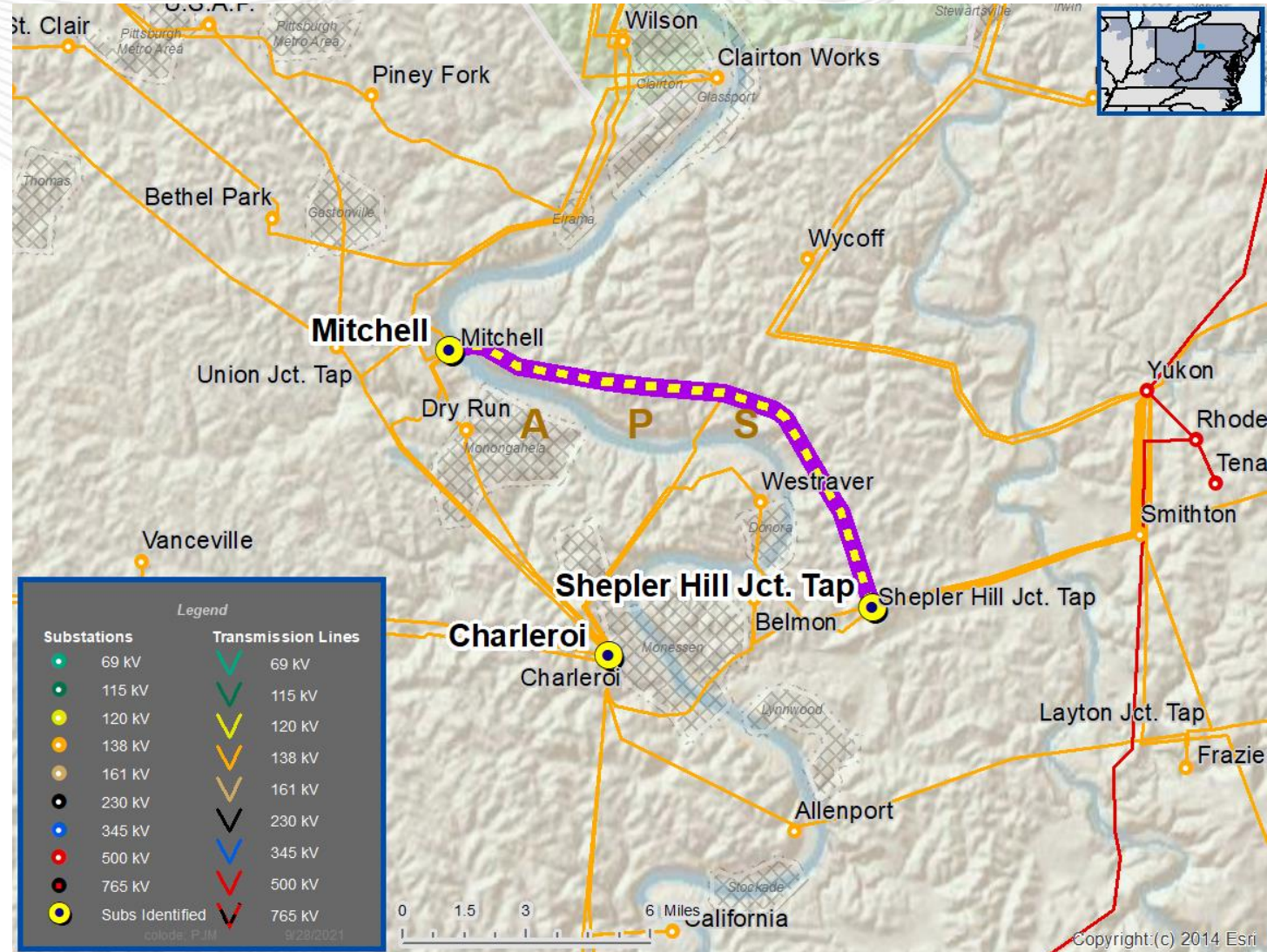
- Existing b3214 - Reconductor the Yukon – Smithton – Shepler Hill Jct 138 kV Line. Upgrade terminal equipment at Yukon and replace line relaying at Mitchell and Charleroi.

Required IS Date: 06/01/2022

Projected IS Date: 06/01/2023

Previous TEAC Date: 06/02/2020

* Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Benton – Riverside 138 kV line
- Contingency: N-2

Recommended Solution:

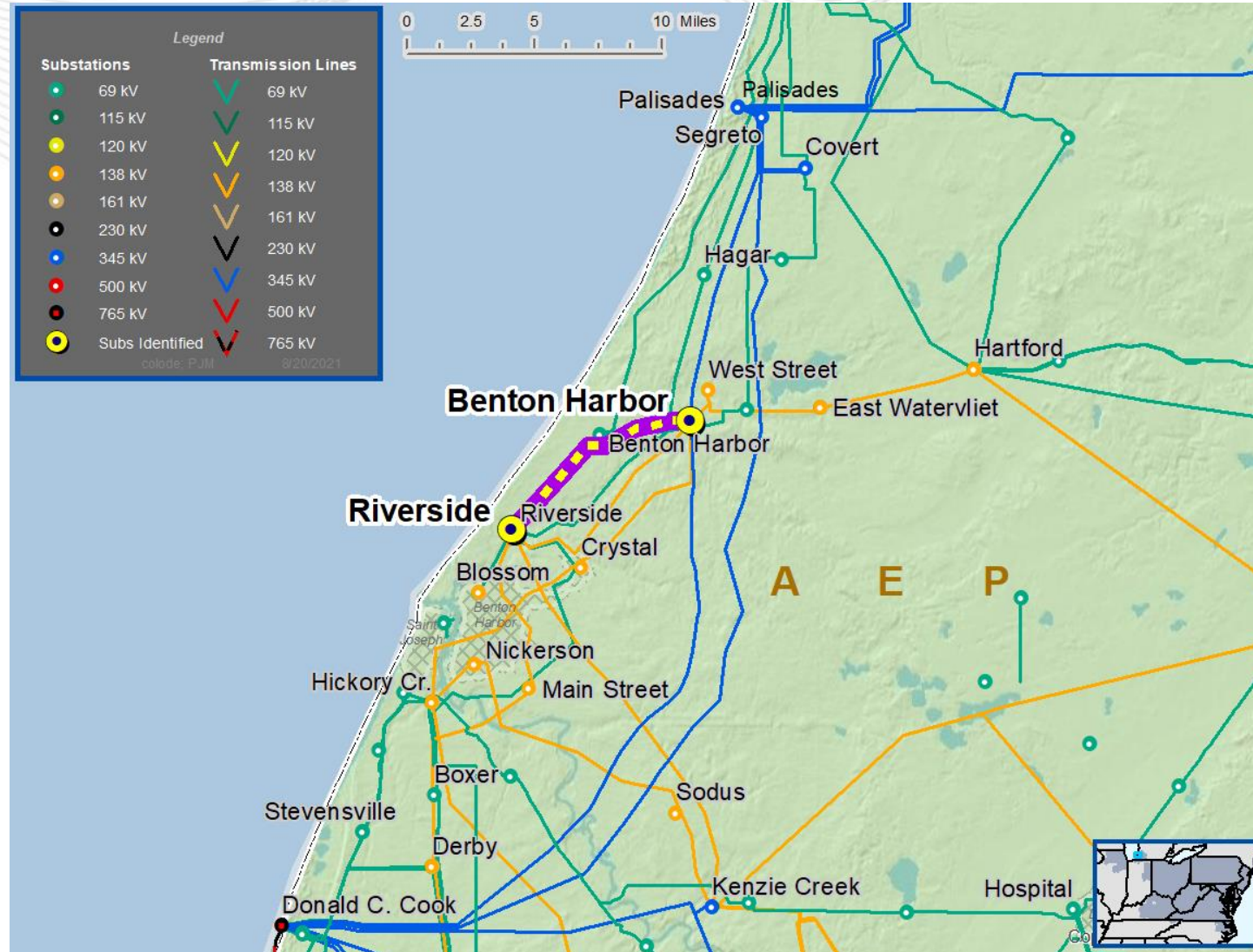
- New baseline b3336 – previously known as S1622.2: Rebuild Benton Harbor-Riverside 138kV double circuit extension (6 miles).
- Current Rating: 136 MVA SN/ 167 MVA SE
- New Rating: 187 MVA SN/ 240 MVA SE

Estimated Cost: \$14.9M

Required IS Date: 06/01/2022

Projected IS Date: 11/01/2021

Previous TEAC Date: 05/21/2018



Problem Statement: Generation Deliverability Violation – Zimmer Deactivation

- Thermal violation: Miami Fort – Hebron Tap 138 kV line
- Contingency: N-2

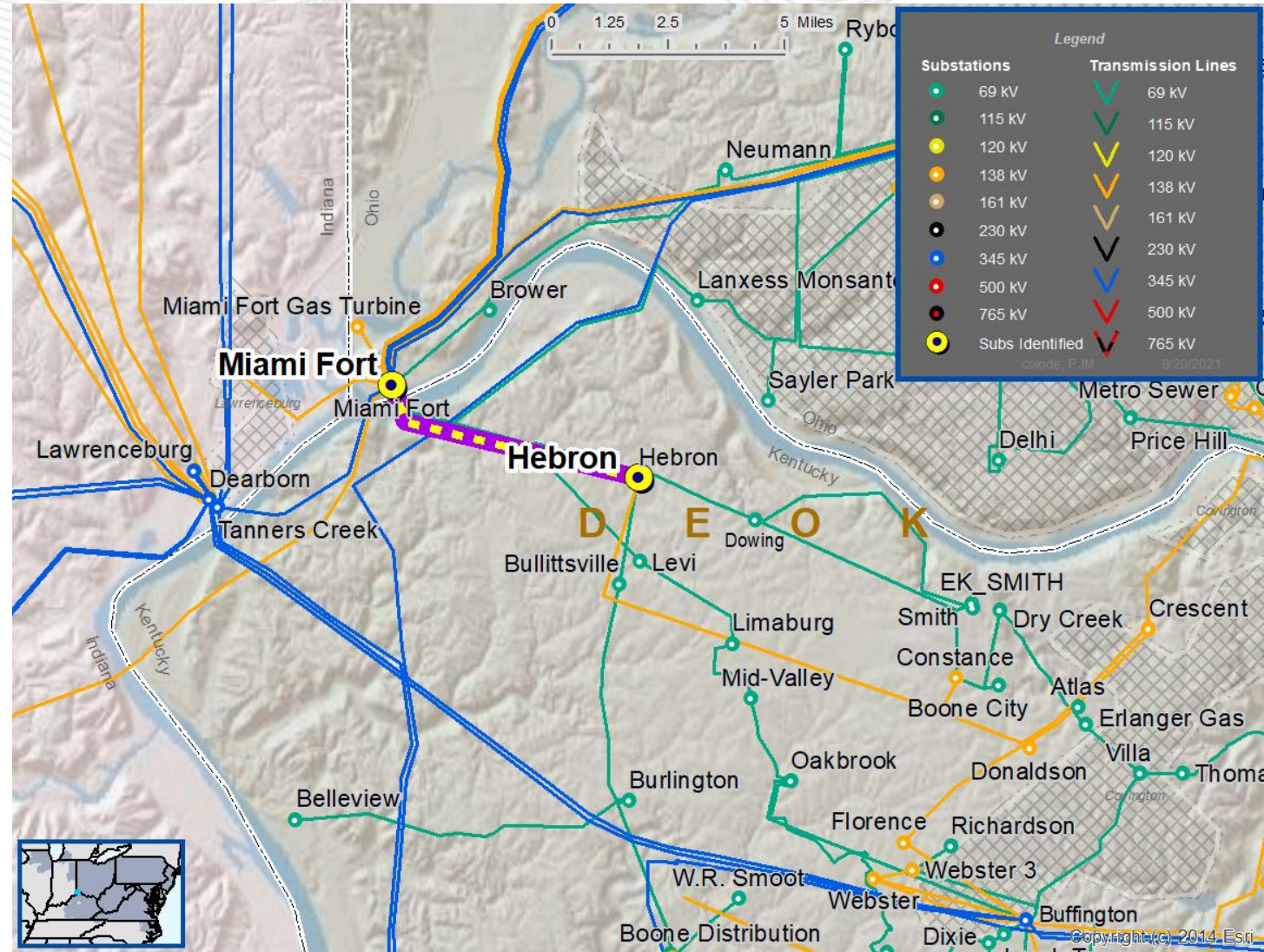
Recommended Solution:

- New baseline b3334 – Rebuild the section of Miami Fort – Hebron Tap 138 kV
- Current Rating: 238 MVA SN/ 238 MVA SE
- New Rating: 301 MVA SN/ 301 MVA SE

Required IS Date: 06/01/2022

Projected IS Date: 11/30/2026

Operating measures identified to mitigate reliability impacts in interim.



Problem Statement: Generation Deliverability and N-1-1 thermal – Indian River 4 Deactivation

- Thermal violation: Vienna - Nelson 138 kV line
- Contingency: N-2, and various N-1 combinations

Potential Solution:

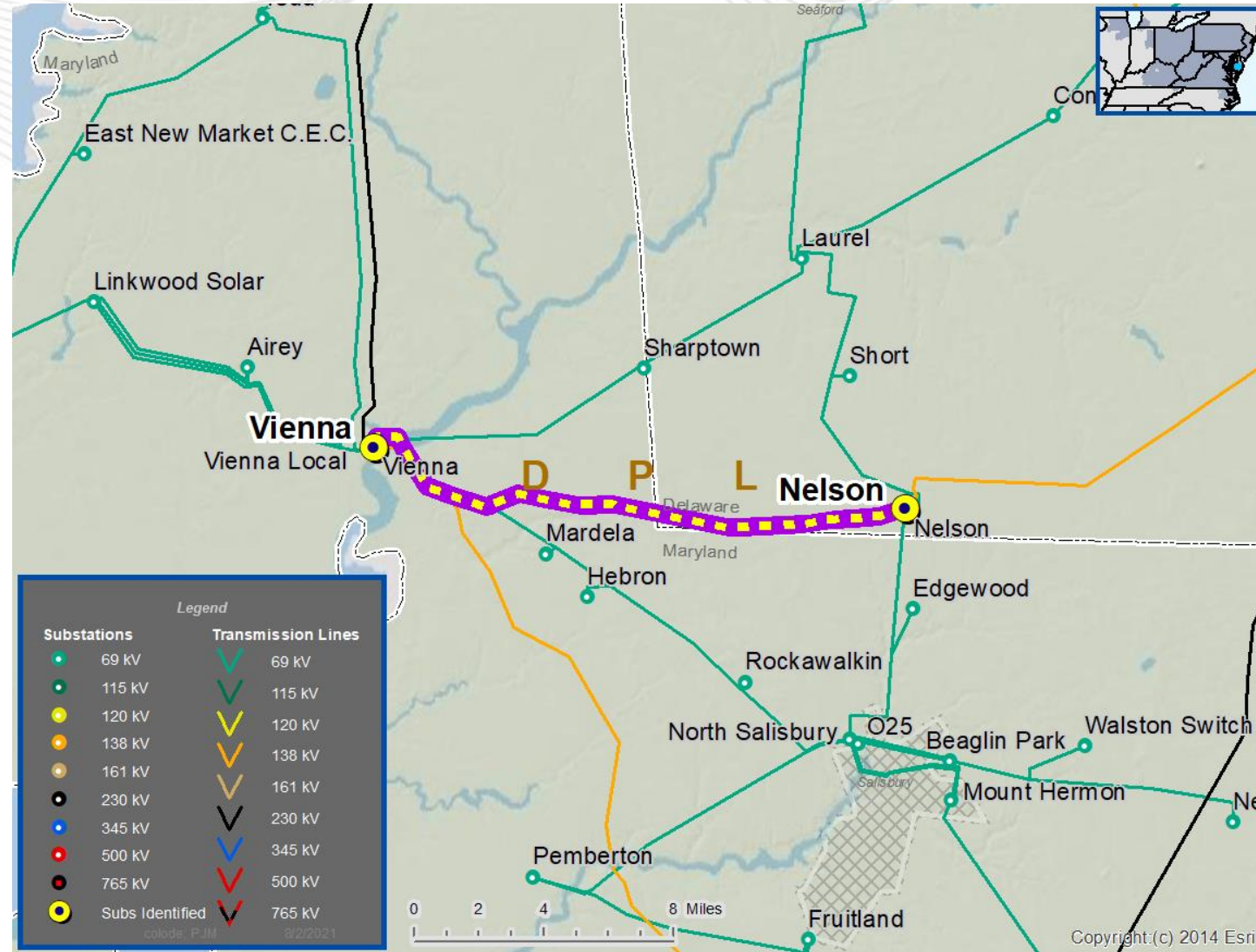
- New baseline b3326 – Rebuild the Vienna – Nelson 138 kV line.
- Current Rating: 101 MVA SN/ 144 MVA SE
- New Rating: 273 MVA SN/ 348 MVA SE

Estimated Cost: \$ 38.5M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2026

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: Generation Deliverability - Indian River 4 Deactivation

- Thermal violation: Vaughn – Kent 69 kV line
- Contingency: N-2

Potential Solution:

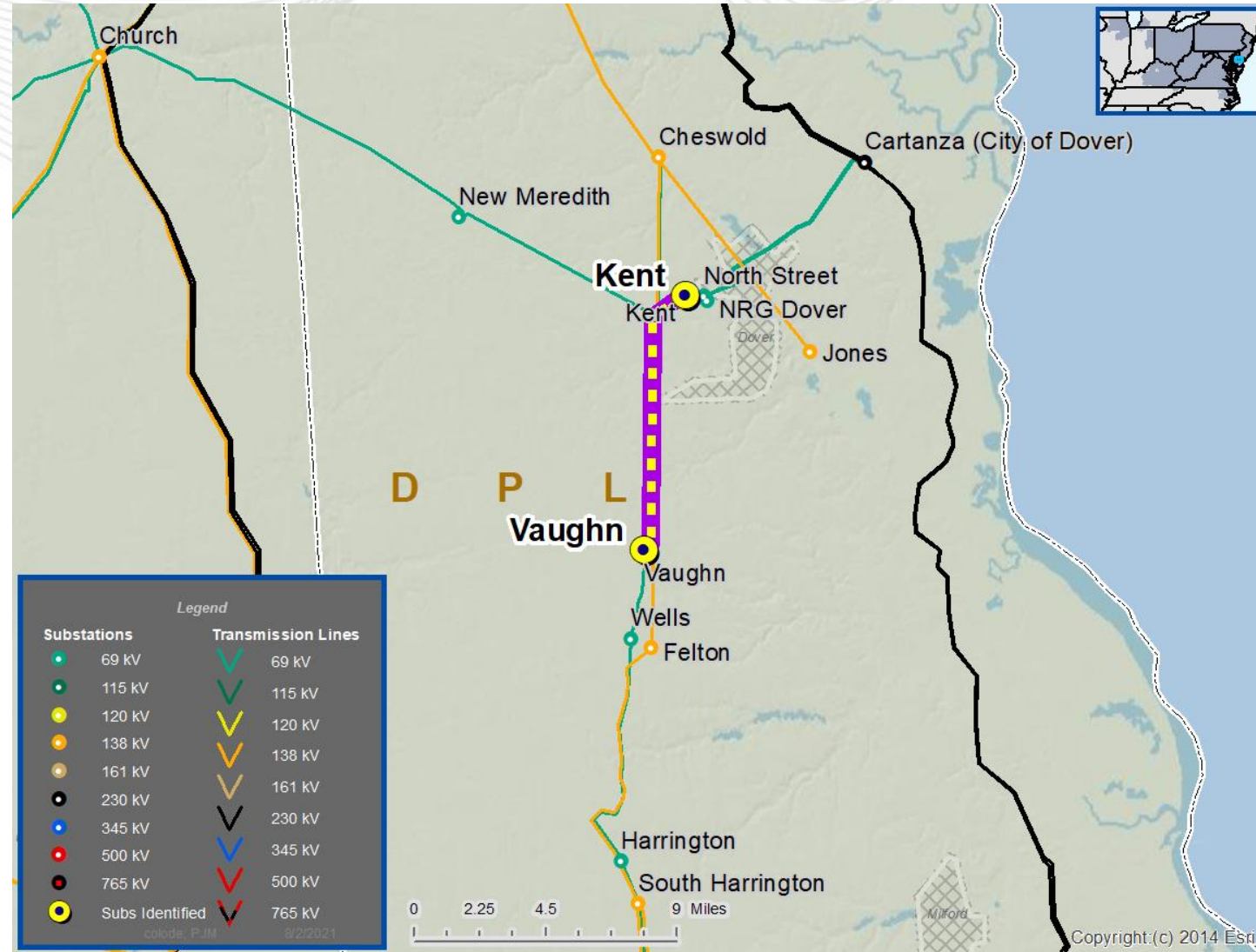
- New baseline b3327 – Upgrade the disconnect switch at Kent.
- Current Rating: 82 MVA SN/ 93 MVA SE
- New Rating: 136 MVA SN/ 165 MVA SE

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Vienna – Vienna 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

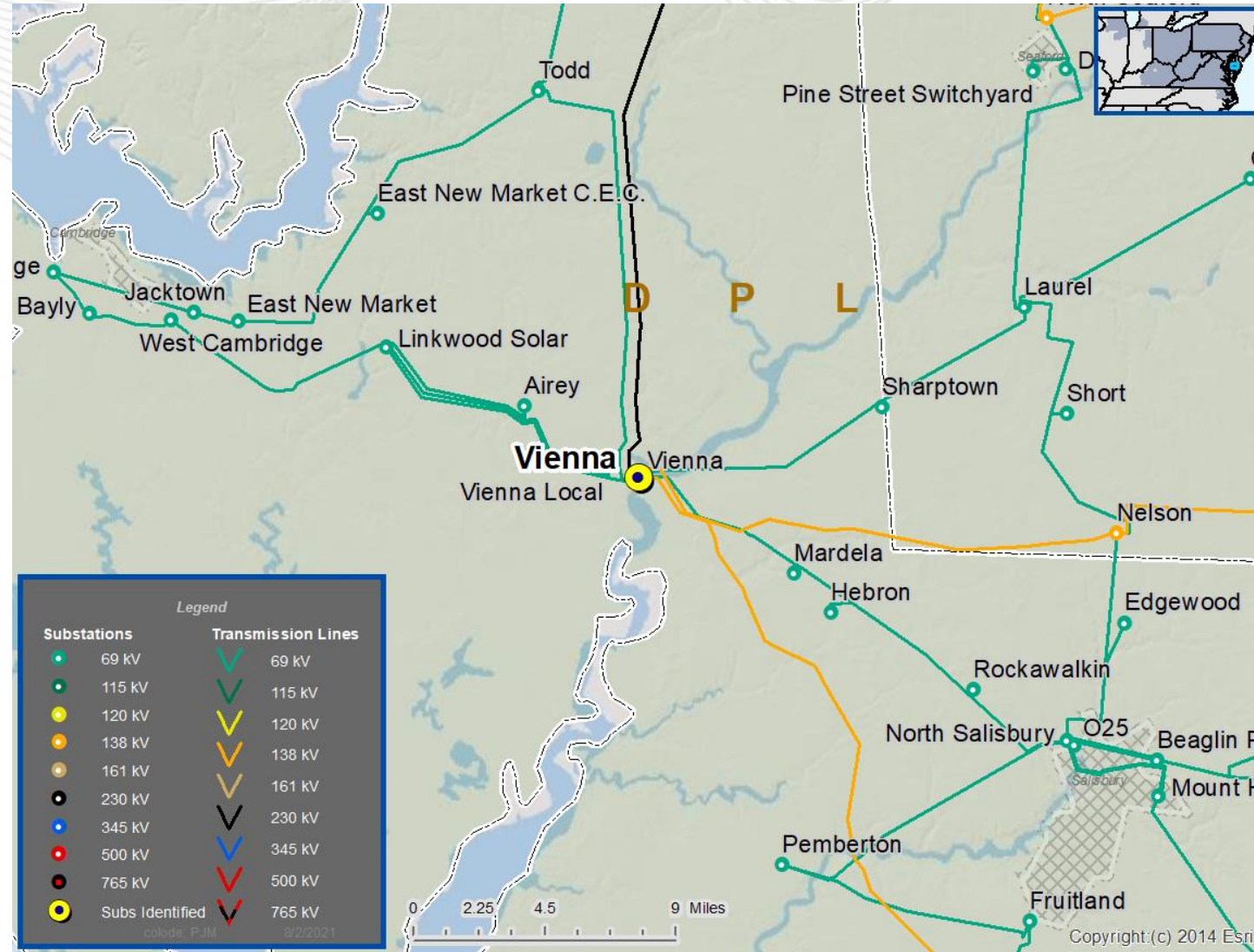
- New baseline b3328 – Upgrade the disconnect switch and CT
- Current Rating: 329 MVA SN/ 372 MVA SE
- New Rating: 392 MVA SN/ 458 MVA SE

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Farmview – Milford 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

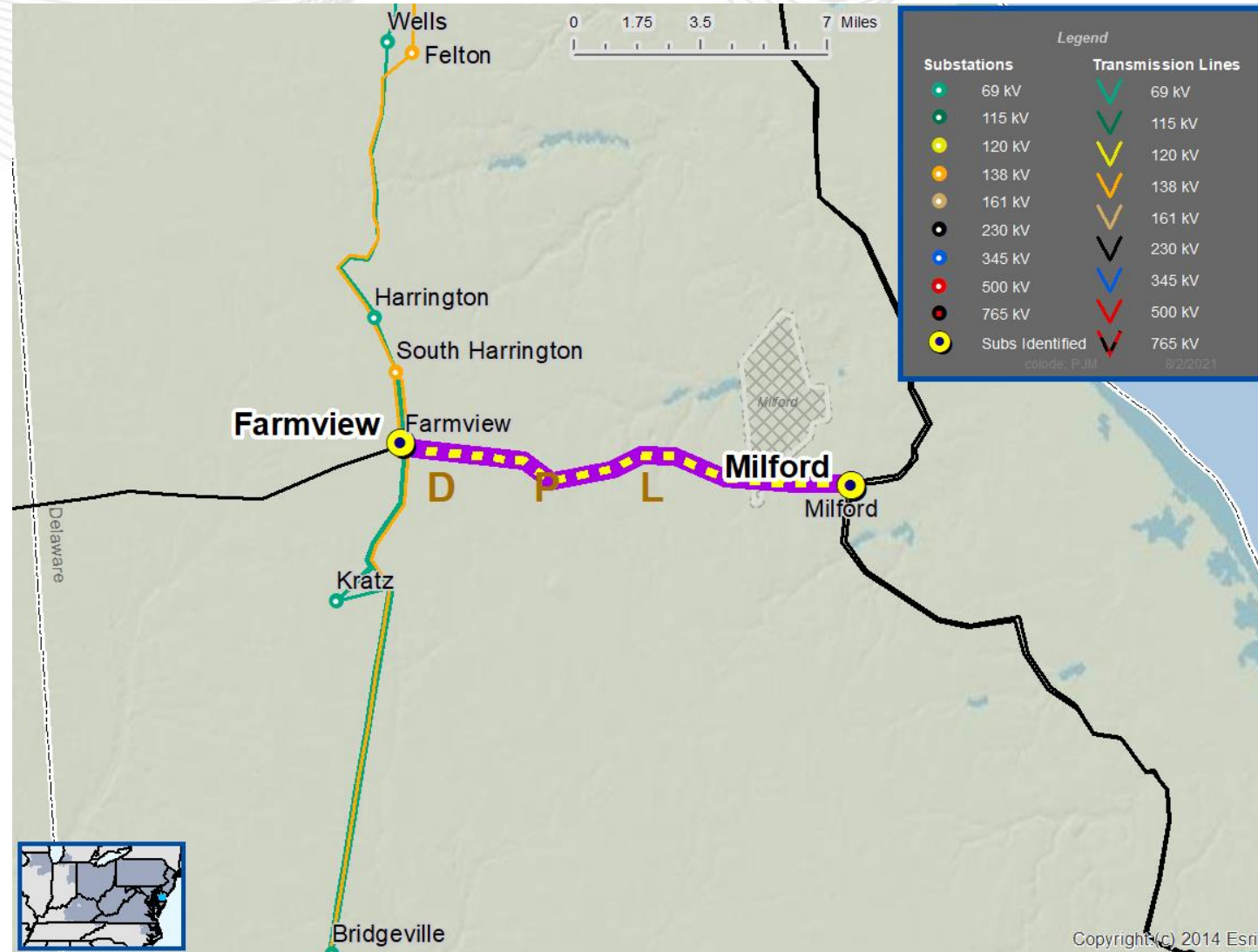
- New baseline b3329 – **Rerate the Farmview –Milford 138 kV line**
- Current Rating: 167 MVA SN/ 240 MVA SE
- New Rating: **218 MVA SN/ 292 MVA SE**

Estimated Cost: \$ 0.3M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Farmview – S. Harrington 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

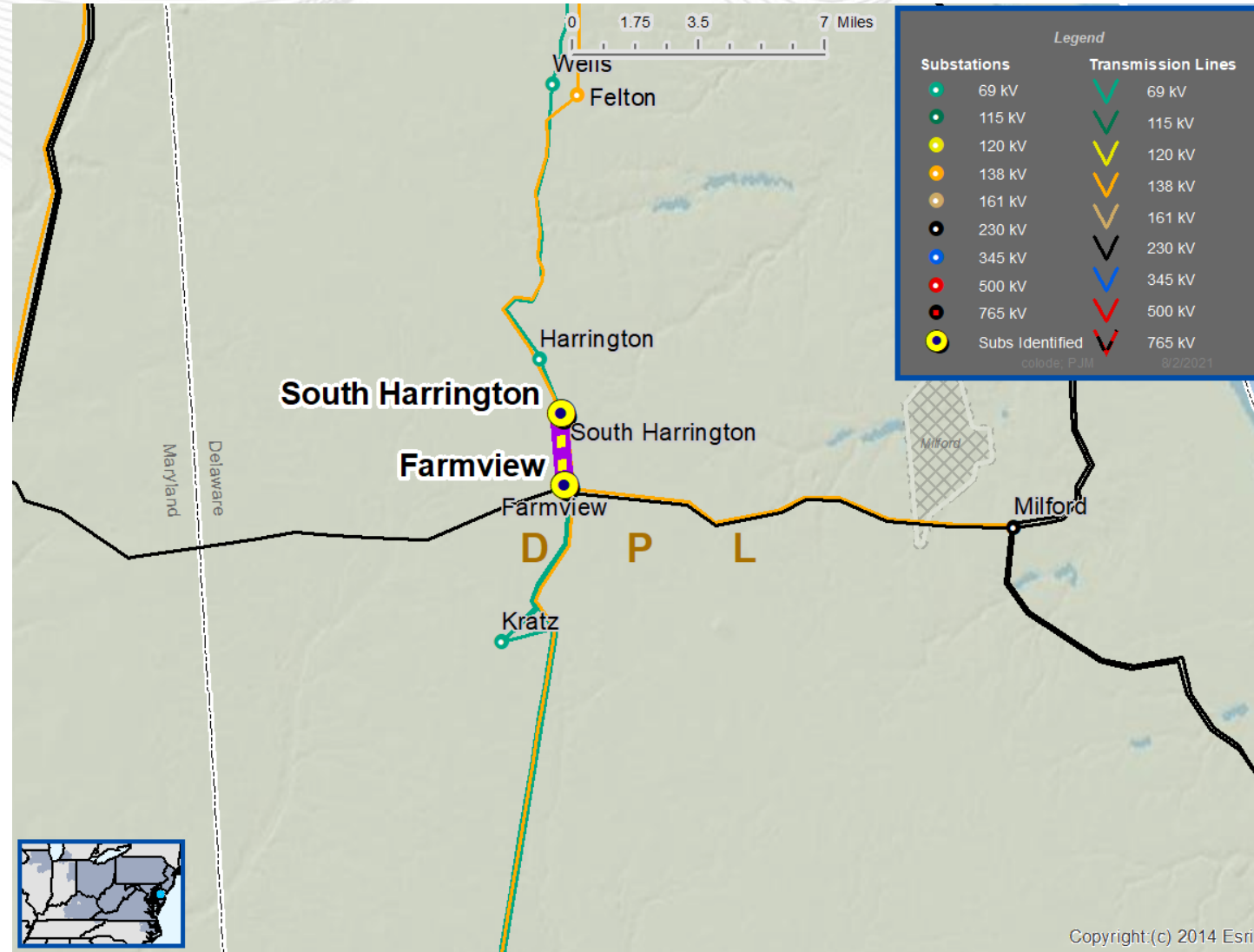
- New baseline b3330 – **Rerate the Farmview – S. Harrington 138 kV line**
- Current Rating: 167 MVA SN/ 242 MVA SE
- New Rating: **218 MVA SN/ 292 MVA SE**

Estimated Cost: \$ 0.25M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



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Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: S. Harrington – North Seaford 138 kV line
- Contingency: various N-1 combinations

Potential Solution:

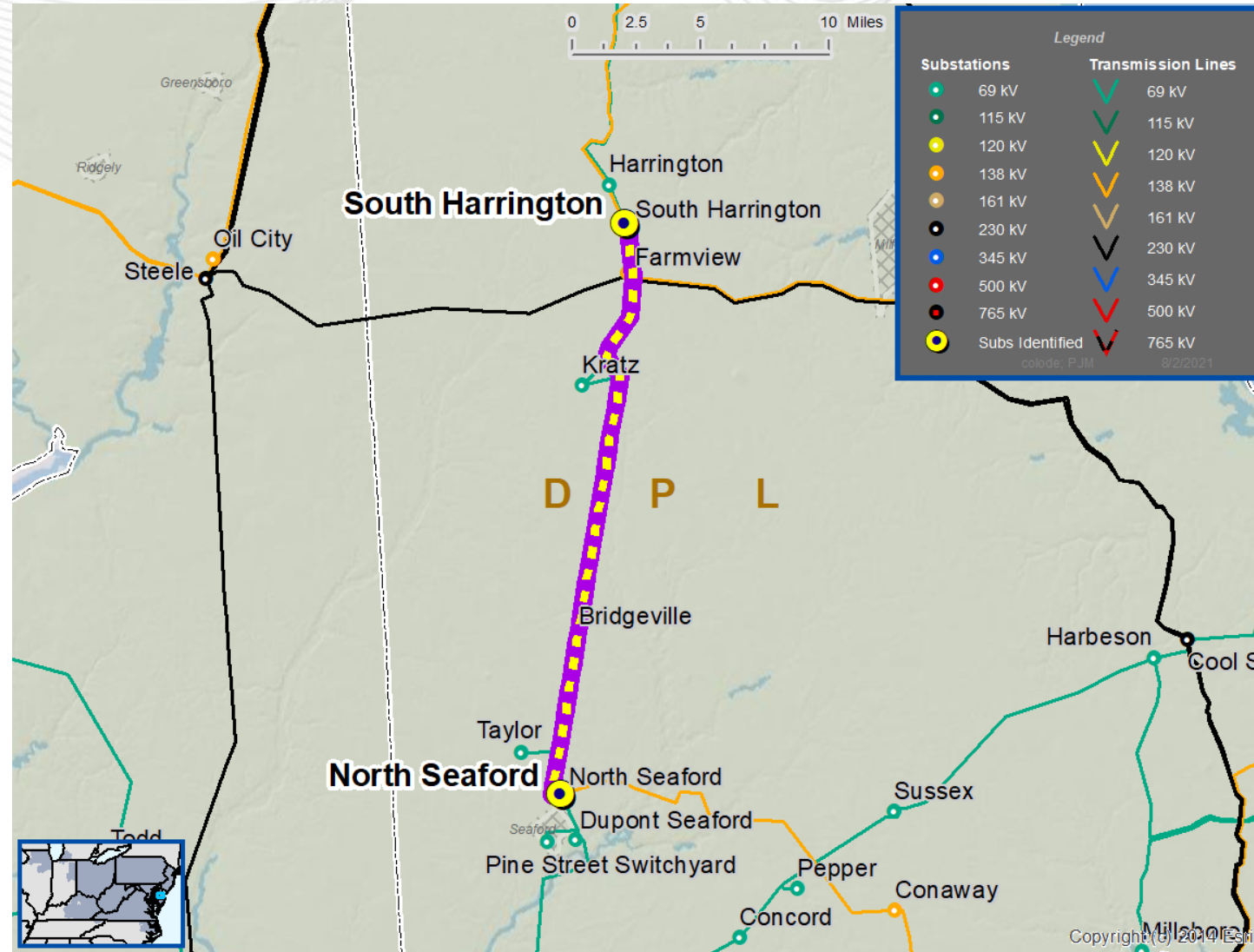
- New baseline b3331 – Upgrade stranded bus and relay at Seaford
- Current Rating: 183 MVA SN/ 247 MVA SE
- New Rating: 273 MVA SN/ 347 MVA SE

Estimated Cost: \$ 0.5M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Problem Statement: N-1-1 Thermal Violation - Indian River 4 Deactivation

- Thermal violation: Steel – Milford 230 kV line
- Contingency: various N-1 combinations

Potential Solution:

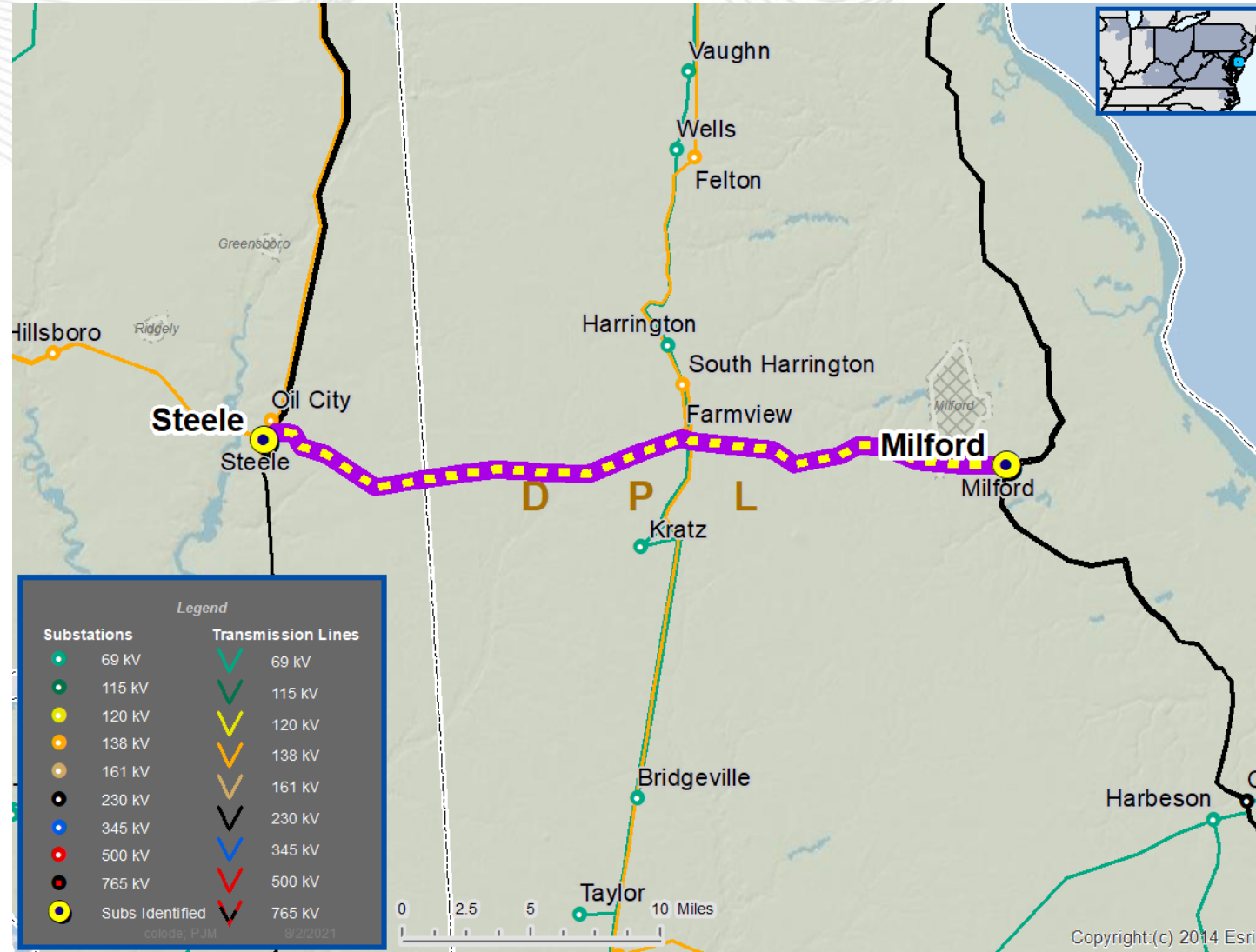
- New baseline **B3332 – Rerate the Steel – Milford 230 kV line**
- Current Rating: 395 MVA SN/ 552 MVA SE
- New Rating: 653 MVA SN/ 799 MVA SE

Estimated Cost: \$ 0.6M

Required IS Date: 06/01/2022

Projected IS Date: 12/31/2022

* Operating measures are not available in interim. PJM Planning / Operations and Transmission Owner are continuing to investigate mitigation.



Facilitator:
Sue Glatz,
Suzanne.Glatz@pjm.com

Secretary:
Michael Zhang,
Michael.Zhang@pjm.com

SME/Presenter:
Phil Yum,
Phil.Yum@pjm.com

Generation Deactivation Notification



Member Hotline

(610) 666 – 8980

(866) 400 – 8980

custsvc@pjm.com

- V1 - 9/30/21 - Original slides posted.

Attachment 2

Summary of PJM Reliability Analysis



Feedback

Generation Deactivations

Generator deactivations can alter power flows that may yield violations of established transmission system reliability criteria. Therefore system upgrades may be required to correct any identified reliability violation, in many areas of PJM. Visit the Learning Center site to learn about the steps PJM takes to keep the grid stable when power plants retire (<http://learn.pjm.com/three-priorities/planning-for-the-future/explaining-power-plant-retirements.aspx>).

The list of deactivations is typically updated within 24 business hours of notification from the generator. If a deactivation is not shown, PJM has not been notified of the deactivation.

Download: [XLS](#) | [XML](#) (/Media/Planning/gen-deactivation-data/GenDeactivationUnits.xml)

				Future Deactivations		Deactivated Generators		Withdrawn Deactivations	
Unit	Capacity (MW) Total: 411.9	Fuel Type (All) ▼	State (All) ▼	Age	Transmission Owner Zone (All) ▼	Owner Notification Date	Requested Deactivation Date	Reliability Analysis (All) ▼	Related Upgrades & /
indian									
Indian River 4	411.9		DE	41	DPL	6.29.2021	5.31.2022		TEAC 8.31.2021 PDF (/-/media/committees/groups/committees/titem-02-generation-dupdate.ashx) TEAC 8.31.2021 PDF (/-/media/committees/groups/committees/titem-02-generation-dupdate.ashx) B3326, B3331, B3332

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Quick Links

- Careers (</about-pjm/careers>)
- Request a Speaker (https://survey.qualtrics.com/jfe/form/SV_9FyRy35j6ZJeHad)
- Communications (</about-pjm/communications>)
- Open Access Transmission Tariff (<https://agreements.pjm.com/oatt>)
- PJM Glossary (</Glossary>)
- RSS Feeds (</about-pjm/newsroom/rss-feeds>)
- Issue Tracking (</committees-and-groups/issue-tracking>)
- Upcoming Changes (</markets-and-operations/etools/upcoming-changes>)
- Learning Center (<https://learn.pjm.com/>)
- Visiting PJM (</about-pjm/who-we-are/visiting-pjm>)
- Manuals (</library/manuals>)
- Training (</training>)
- Operating Agreement (<https://agreements.pjm.com/oa>)

Data Shortcuts

- Data Viewer (<https://dataviewer.pjm.com/dataviewer/pages/public/lmp.jsf>)
- Data Miner 2 (<https://dataminer2.pjm.com/list>)
- Data Snapshot (<http://datasnapshot.pjm.com/>)
- Data Directory (</markets-and-operations/data-dictionary>)
- System Map (<https://gis.pjm.com/esm/default.html>)
- Emergency Procedures (<https://emergencyprocedures.pjm.com/>)
- Interregional Data Map (</markets-and-operations/interregional-map>)



(/markets-and-operations/etools/pjm-now.aspx)

Contact

Member Relations

- (610) 666-8980 (tel:(610) 666-8980)
- (866) 400-8980 (tel:(866) 400-8980)
- Email (<mailto:custsvc@pjm.com>)
- Contact Directory (</about-pjm/communications/contact-directory>)
- Member Community (</markets-and-operations/etools/member-community>)

Media Relations

- (866) 756-6397 (tel:(866) 756-6397)
- Newsroom (</about-pjm/newsroom>)
- Media Relations Email (<mailto:PJMCorpComm@pjm.com>)

PJM Compliance Line


- (866) 776 6942 (tel:(866) 776 6942)

Mailing Address

2750 Monroe Boulevard
Audubon, PA 19403

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Feedback